

# Exhibit 582

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF NORTH CAROLINA  
SOUTHERN DIVISION  
No. 7:23-CV-897

IN RE: )  
)  
CAMP LEJEUNE WATER LITIGATION)  
)  
This document relates to )  
)  
ALL CASES )  
)

\* \* \* \* \*

The remote video deposition of  
VINCENT BIVINS, M.D., taken via  
Zoom videoconference on the 27th day  
of June, 2025, commencing at  
approximately 9:05 a.m. CST.

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1 VIDEOGRAPHER:

2 We're now on the record.

3 My name is Michael Matheny, a  
4 videographer for Golkow, a Veritext division.

5 Today's date is June the 27th, 2025, and  
6 the time is 9:05.

7 This remote video deposition is being  
8 held in the matter of Camp Lejeune Water  
9 Litigation, for the United States District Court of  
10 the Eastern District of North Carolina.

11 The deponent is Dr. Vincent Bivins.

12 Counsel will be noted on the stenographic  
13 record.

14 The court reporter is Lois Robinson, who  
15 will now swear in the witness.

16 VINCENT BIVINS, M.D.,  
17 the witness, after having first been duly  
18 sworn to tell the truth, the whole truth, and  
19 nothing but the truth, was examined and testified  
20 as follows:

21 EXAMINATION

22 BY MR. ANWAR:

23 Q Good morning, Dr. Bivins. Could I start  
24 by having you state and spell your complete name  
25 for the record?

1 A Yes. I'm -- first name Vincent,  
2 V-I-N-C-E-N-T, Michael, M-I-C-H-A-E-L, Bivins,  
3 B-I-V-I-N-S.

4 Q Thank you.

5 Could you also state your -- your current  
6 business address?

7 A Yeah. Our main office is --

8 I have to think about that for a second.

9

10 -- 3489 Independence Drive, Homewood,  
11 Alabama, 35209.

12 Q Thank you.

13 My name is Haroon Anwar. I'm an attorney  
14 with the Department of Justice. I represent the  
15 United States in the Camp Lejeune Water Litigation,  
16 which is pending in the Eastern District of North  
17 Carolina.

18 Do you understand that?

19 A Yes.

20 Q Okay. You've probably talked about this  
21 with your -- your lawyers already, but I just want  
22 to go through a couple ground rules to hopefully  
23 make today's deposition as smooth as possible.

24 The -- the first ground rule is you were  
25 just administered an oath at the beginning of the

1 deposition. It's the same oath to tell the truth  
2 as if you were actually testifying in a -- in a  
3 court of law.

4 Do you understand that?

5 A Yes.

6 Q Is there any reason today that you'd be  
7 unable to testify truthfully?

8 A No.

9 Q If --

10 I'll be asking you a number of questions  
11 today. From time to time, I may ask a bad or  
12 unclear question. If you don't understand my  
13 question, can you please let me know?

14 A Yes.

15 Q Otherwise, I will assume that you  
16 understood the question. Is that fair?

17 A Fair.

18 Q In normal conversation, it's very routine  
19 to sort of speak quickly and talk over each other.  
20 For purposes of a deposition, it makes the court  
21 reporter's life really hard, and it makes for a  
22 much messier record.

23 So, if you could, wait until I complete  
24 my question, pause for a second, and then answer my  
25 question. It -- I think it'll make the process go

1 a lot smoother today. Could we try to agree to do  
2 that?

3 A Yes.

4 Q And you've been doing a great job so far,  
5 but, also, for purposes of the record, if you could  
6 respond to all of my questions verbally and try to  
7 avoid head nods. You can head nod, but please  
8 answer the question verbally so that it comes --  
9 shows up on the record. Fair?

10 A Fair.

11 Q Okay. And I don't expect the deposition  
12 to take all day today, but it's also not intended  
13 to be a marathon or to punish you. We'll try to  
14 take a break just about every hour.

15 If you need to take a break for any other  
16 reason, just let me know. I'd be happy to  
17 accommodate you. The only stipulation I put on  
18 that is if there is a pending question, I'd ask  
19 that you answer my question before we -- we take a  
20 break. Can we agree to that?

21 A Agree.

22 Q Okay. Dr. Bivins, when did you begin  
23 working as an expert witness in this case?

24 A In and around November of 2024.

25 Q You're being compensated at a rate of a

1 thousand dollars an hour for your work on this  
2 case?

3 A That is correct.

4 Q And you're being compensated that same  
5 rate, a thousand dollars an hour, for your  
6 deposition testimony and trial testimony in this  
7 case? Correct?

8 A Correct.

9 Q I'm going to mark a document. So what  
10 I'll do is I will drop documents that I share with  
11 you, Dr. Bivins, into the chat so you have a local  
12 copy as well, but then I will also screen-share  
13 them with you.

14 (DEPOSITION EXHIBIT NUMBER 1  
15 WAS MARKED FOR IDENTIFICATION.)

16 MR. ANWAR:

17 Q So I am marking as Exhibit 1 an email  
18 that was produced to us in response to a document  
19 request asking for invoices related to your work on  
20 this case.

21 Do you recognize this document?

22 A Yes.

23 Q And this is an email from you to the  
24 lawyer there, Ted Ruzicka?

25 A That is correct.

1 Q And does this reflect all of the -- the  
2 hours and the charges that you've spent working on  
3 this case?

4 A That is correct.

5 Q And, so, to date, you've been paid  
6 \$62,000 for your work on this case?

7 A That is correct.

8 Q Do you have any other documentation  
9 related to payment or compensation for your work on  
10 this case aside from this email? Do you have any  
11 actual invoices or line-item bills?

12 A I do not.

13 Q Okay. That's all I wanted to ask about  
14 that document.

15 Does your payment depend on the outcome  
16 of the case?

17 A Does not.

18 Q Ballpark, what percent- -- percentage of  
19 your annual income is earned from serving as an  
20 expert witness?

21 A And that is, to clarify, other cases  
22 outside of this; correct?

23 Q Correct.

24 A Probably --

25 Give me a second to think about it.

1 Q Sure.

2 A -- less than 5 percent.

3 Q I should have asked you this in the  
4 beginning, but your -- this deposition is taking  
5 place via Zoom. You're -- are you currently  
6 sitting in a -- an office at your business address?

7 A I am.

8 Q Is there anyone present in that room with  
9 you?

10 A No, sir.

11 Q Do you have any documents there with you?

12 A I have just a notebook that I can take  
13 notes on, and I have access to my expert opinion.  
14 That's it.

15 Q Does -- does the notebook you have  
16 currently contain any notes related to this case?

17 A It does not.

18 Q And does the -- the report, the copy of  
19 your report there with you, does that have any  
20 markups or notes on it?

21 A It has a couple places that I've just  
22 highlighted.

23 Q Okay. Why don't we go ahead and mark  
24 your report as Exhibit Number 2.

25 (DEPOSITION EXHIBIT NUMBER 2

1 WAS MARKED FOR IDENTIFICATION.)

2 MR. ANWAR:

3 Q Doctor, I will scroll through this for  
4 you, so I will leave it to you. Can you see the  
5 document that's displayed there?

6 A I do.

7 Q Do you recognize this document?

8 A I do.

9 Q I'll scroll through the whole thing for  
10 you.

11 Does this appear to be a complete and  
12 accurate copy of your -- your expert report?

13 A It does.

14 Q And you mentioned a copy there with you  
15 where you've -- you've highlighted some things.  
16 Could you share what you've highlighted in the copy  
17 of the report you have there with you?

18 A You want me to talk through what I've  
19 highlighted?

20 Q Sure.

21 A Yeah. I've just sort of highlighted some  
22 notes on -- let's see -- my summary. I highlighted  
23 that TCE and benzene are known to be hazardous to  
24 human health. That's on page 2.

25 I highlighted Hadnot so I would remember

1 not to mispronounce it, on page 3. I just wanted  
2 to remember that.

3 I just highlighted -- let's see what else  
4 I highlighted. I highlighted, on page 10, the  
5 results of Dr. Reynolds' exposure report, the  
6 numbers for her ingestion amounts of both TCE and  
7 benzene.

8 I highlighted Dr. Bird's statements about  
9 TCE and PCE with the EPA banning of that, just  
10 highlighted that statement on page 12.

11 I sort of went over, just sort of  
12 reviewed a couple of cohort studies that was  
13 mentioned in my report on -- on TCE on paragraph 1,  
14 those two cohort studies by Raaschou-Nielsen and  
15 Hansen.

16 And I highlighted on page 14, again,  
17 talking about EPA banning TCE under the Toxic  
18 Substance Control.

19 I highlighted on page 15, just  
20 highlighted benzene has been classified as  
21 carcinic- -- carcinogenic to human -- to humans by  
22 IARC.

23 I highlighted just on page 16 just  
24 statements saying chlorinated solvents are like  
25 those compounds found at Camp Lejeune or other --

1 beyond the chlorinated solvents, here are other  
2 chemicals that are carcinogenic.

3 And, then, finally, on -- I  
4 highlighted -- I think this was Dr. -- Dr. Culp's  
5 statement about latency period on up to 40 years on  
6 page 18, and on page 19 where it talked about  
7 idiopathic where 82 percent of bladder cancers are  
8 attributable to modifiable factors.

9 And on page 20, I highlighted where I  
10 said, you know, Mr. Raymond's smoking history is at  
11 least as likely not a cause of bladder -- bladder  
12 cancer.

13 I also highlighted, "in fact," on page --  
14 same page, middle paragraph, "in fact, many  
15 epidemiological studies control for smoking and  
16 still see an increase in bladder cancer diagnosis."

17 And on page -- this was the last page,  
18 and it's -- it just says "exposures to more than  
19 one carcinogen only amplifies the risk of bladder  
20 cancer. Each carcin- -- carcinogen likely causes  
21 different types of cell damage, creating more  
22 mutations and promoting more aggressive tumor  
23 growth." I highlighted that.

24 So those are my highlights.

25 Q Thank you for going over those with me.

1           Now, attached to your report, Exhibit 2  
2 there, is Appendix A. Is Appendix A a complete and  
3 accurate copy of your CV?

4           A           It's not showing on my end.

5           Q           Oh, I'm sorry.

6                        So Appendix A attached to Exhibit 2,  
7 which is your report --

8           A           Yes, sir.

9           Q           -- that is a complete and accurate copy  
10 of your CV?

11          A           Yes, sir.

12          Q           Does this CV contain all of your  
13 publications?

14          A           I --

15                        Let me see. It may not. It -- it may  
16 not.

17          Q           Are there any publications that you're  
18 aware of that are not included on the CV?

19          A           Not --

20                        Again, I -- I don't know all of them,  
21 because I've been involved in a lot and --

22                        I mean, at this point, it would be very  
23 difficult for me to hash through. I have to look  
24 at --

25                        I'm looking --

1           Is there two pages to this or just one?  
2 I can't -- I'm only seeing one page. Just one  
3 page?

4 Q           There were -- the version I had has two  
5 pages, but it's the same page.

6 A           The same page?

7 Q           Yeah.

8 A           I mean, there is a few things I was  
9 involved in in residency, I think, that's not on  
10 here.

11           You know, there is a publication where --  
12 that came out looking at the drug UroGen 102 -- it  
13 was published last fall -- which is a --its's a  
14 bladder chemotherapy drug for bladder cancer,  
15 intermediate-risk bladder cancer. I don't think  
16 that's on here.

17           I was involved in some studies early on  
18 in prostate cancer. I don't think they are on here  
19 either.

20 Q           Okay. Do you -- do you maintain a  
21 complete list of your publications somewhere?

22 A           Uh, I would have to dig and find the old  
23 ones. I don't, to be honest with you.

24 Q           Okay. Turning to Appendix B of your  
25 report, Exhibit 2, Appendix B is labeled "prior

1 testimony." Correct?

2 A Yes, sir.

3 Q Okay. And does this -- does Appendix B  
4 consist of a complete list of your prior testimony  
5 at deposition or trial in the last four years?

6 A That looks correct.

7 Q Aside from these three cases, have you  
8 ever testified in any other cases at any time?

9 A No.

10 Q Okay. So these are the only three cases  
11 that you've -- you've ever testified in; correct?

12 A That is correct.

13 Q I just wanted to quickly ask you a few  
14 questions about each one. The -- the first case  
15 there listed appears to be a 2016 case, Rape v.  
16 Dr. Pacha, pending in the Circuit Court of  
17 Talladega County, Alabama. Is that right?

18 A That's correct.

19 Q And it looks like you testified at trial  
20 in that case; correct?

21 A That is correct.

22 Q What was your role in that case?

23 A Expert witness for the defense.

24 Q Was that a medical malpractice case?

25 A It was.

1 Q And, so, you -- you testified about --  
2 you offered opinions in that case about the  
3 standard of care? Is that right?

4 A I did.

5 Q The second case there is listed as  
6 Williams v. Jackson Hospital & Clinic, pending in  
7 the Circuit Court of Montgomery County, Alabama.  
8 It appears to be a 2016 case, and it looks like you  
9 testified in a deposition in that case. Is that  
10 right?

11 A That is correct.

12 Q What was your role in that case?

13 A I testified as an expert witness for the  
14 defense.

15 Q Was that also a medical malpractice case?

16 A It was.

17 Q And, so, did you offer opinions about the  
18 standard -- applicable standard of care in that  
19 case?

20 A That's correct.

21 Q And then the last case appears to be a  
22 2013 case, Murphy versus Jackson Hospital & Clinic,  
23 and Margaret Vereb, M.D., pending in the Circuit  
24 Court of Montgomery County, Alabama, and it looks  
25 like you testified at trial in that case. Is that

1 right?

2 A Correct.

3 Q Did you again serve as an expert witness  
4 for the defense?

5 A I did.

6 Q And was that also a medical malpractice  
7 case?

8 A It was.

9 Q Okay. So in that case, you were offering  
10 opinions about the applicable standard of care; is  
11 that right?

12 A That is correct.

13 Q Now, Exhibit 2, going back to the  
14 entirety of your report, does Exhibit 2 contain all  
15 of the opinions you've formed in this case to date?

16 A It does.

17 Q I'm going to take -- take off Exhibit 2  
18 for now. But if you want to refer to it throughout  
19 the deposition, feel free to refer to your copy,  
20 and I'm happy to put it back on as we're going  
21 along -- along. Excuse me.

22 I'm now going to show you what I'm  
23 marking as Exhibit 3.

24 (DEPOSITION EXHIBIT NUMBER 3

25 WAS MARKED FOR IDENTIFICATION.)

1 MR. ANWAR:

2 Q Dr. Bivins, do you recognize Exhibit 3?

3 A Let me see. It's moving pretty fast  
4 there. I couldn't see the title.

5 Q Sorry. Let me go back up to the top.

6 A Yes.

7 Q Is this a list of materials considered in  
8 forming your opinions in the Edward Raymond case?

9 A Yes.

10 Q I'll show you what I'm marking as Exhibit  
11 4.

12 (DEPOSITION EXHIBIT NUMBER 4  
13 WAS MARKED FOR IDENTIFICATION.)

14 MR. ANWAR:

15 Q Do you recognize Exhibit 4, Doctor?

16 A Yes.

17 Q Is this a supplemental list of your  
18 materials considered in forming your opinions in  
19 the Edward Raymond case?

20 A It is.

21 Q Between Exhibit 3, your initial materials  
22 considered list, and Exhibit 4, your supplemental  
23 materials considered list, are all of the materials  
24 you considered in forming your opinions in this  
25 case contained on those two documents?

1 A Yes.

2 Q As you sit here today, are there any  
3 documents or information you considered --  
4 Well, strike that.

5 As you sit here today, are there any  
6 documents you considered that you're aware of that  
7 are not identified either on your materials  
8 considered list or your supplemental materials  
9 considered list?

10 A And I assume -- I didn't get a chance to  
11 see the materials all the way. It was put up very  
12 fast. But I assume -- I mean, the only other thing  
13 was some PubMed searches and Google searches I did  
14 on my own to get familiar. So I assume those were  
15 on there, too. They should have been on my  
16 reference list.

17 Q Sure. Let me -- let me put that up for  
18 you.

19 So I'm displaying Exhibit 3 again, your  
20 materials considered list. And if we go through,  
21 at the end, there are some literature studies  
22 listed there.

23 A Yes. Yes. Okay. Fair enough. I didn't  
24 see those. That's fair enough.

25 Q Okay. So between the materials

1 considered list and the supplemental list,  
2 everything that you -- all documents and studies  
3 and records that you considered in forming your  
4 opinions in this case are -- are identified on  
5 those two lists; correct?

6 A Yes, sir.

7 Q Okay. Now, Dr. Bivins, you're not an  
8 attorney; right?

9 A No, sir. Not that smart.

10 Q You're -- you're not an economist;  
11 correct?

12 A No, sir. Not that smart.

13 Q You're not an accountant; right?

14 A No, sir.

15 Q You aren't an epidemiologist; correct?

16 A No, sir, I'm not.

17 Q You don't have a certification in  
18 epidemiology; right?

19 A I do not.

20 Q You've never been a principal  
21 investigator for an epidemiological study; correct?

22 A Correct. I have not.

23 Q You've never published peer- --  
24 peer-reviewed literature on epidemiology; right?

25 A I have not.

1 Q You haven't taught any courses on  
2 epidemiology; correct?

3 A I have not.

4 Q You aren't a geneticist; right?

5 A I am not.

6 Q You aren't a toxicologist; correct?

7 A I am not.

8 Q You don't have a certification in  
9 toxicology; correct?

10 A I do not.

11 Q You've never been a principal  
12 investigator for a toxicological study; correct?

13 A I have not.

14 Q You've never published peer-reviewed  
15 literature on toxicology; correct?

16 A I have not.

17 Q And you haven't taught any courses on  
18 toxicology; correct?

19 A I have not.

20 Q You're -- you're not an exposure expert;  
21 right?

22 A I am not.

23 Q And when I say "exposure expert," in  
24 other words, I mean you're not an expert in using  
25 models to estimate exposure to contaminants.

1 Correct?

2 A Correct. I have not.

3 Q Okay. You're not a risk assessment  
4 expert; correct?

5 A That is correct. I'm not.

6 Q And when I -- I say "risk assessment  
7 expert," I mean you're not an expert in evaluating  
8 the level of increased risk for an individual from  
9 exposure to a chemical. Correct?

10 A That is correct. I'm not.

11 Q You're -- you're not a regulatory expert;  
12 right?

13 A I am not.

14 Q You have no degrees in biochemistry,  
15 environmental health, or psychology; correct?

16 A That is correct. I do not.

17 Q You've never published peer-reviewed  
18 literature regarding the effects of TCE on bladder  
19 cancer; right?

20 A That is correct. I have not.

21 Q You've never published peer-reviewed  
22 literature regarding the effects of PCE on bladder  
23 cancer; right?

24 A I have not.

25 Q You never published peer-review

1 literature regarding the effects of vinyl chloride  
2 on bladder cancer; right?

3 A I have not.

4 Q You've never published peer-reviewed  
5 literature regarding the effects of benzene on  
6 bladder cancer; right?

7 A I have not.

8 Q You've never published peer-reviewed  
9 literature regarding the effects of Camp Lejeune  
10 water on bladder cancer; right?

11 A I have not.

12 Q And when I say "bladder cancer," can you  
13 explain for me in your words what you understand  
14 bladder cancer to mean?

15 A Yeah.

16 Okay. So bladder cancer --

17 And always when I'm talking to a patient  
18 or anyone, you know, it is cancer --

19 So, and always I explain cancer to my  
20 patients, and then, you know, whatever organ we're  
21 dealing with, that is that process.

22 So, you know, cancer is when you have a  
23 mutagenic effect where a normal cell has now  
24 transferred into a cell that don't obey the bodies  
25 of -- laws of the body. So now that's a -- it's a

1 cell that is regulated differently. It grows  
2 differently. And, so, that's cancer.

3 And then you superimpose that onto the  
4 organ, so in this case, bladder. So you would  
5 have -- and, so, typically, those are cancer cells,  
6 and when they grow, they form a tumor, and that is  
7 a group of cells, and that forms an actual  
8 malignancy, and that's -- and, so, it's in the  
9 organ of the bladder, so that's bladder cancer.

10 Q Thank you.

11 I think you mentioned this in your  
12 report, but is urothelial carcinoma the most common  
13 type of bladder cancer?

14 A That is correct.

15 Q And high-grade urothelial carcinoma is  
16 the type of bladder cancer that Mr. Raymond, Edward  
17 Raymond, was diagnosed with; correct?

18 A That is correct.

19 Q Have you ever examined Mr. Raymond?

20 A Have not.

21 Q Have you communicated with Mr. Raymond?

22 A Have not.

23 Q You're a practicing urologic oncologist;  
24 correct?

25 A That's correct.

1 Q Meaning you perform surgeries to treat  
2 urologic cancers?

3 A That's correct.

4 Q What -- what type of urologic cancers do  
5 you treat?

6 A Well, so there's, you know, several  
7 types, and I treat all types. The most common type  
8 is gonna be a urothelial carcinoma of the bladder.  
9 And within there, there's all -- you know, all  
10 different grades, high and low grade. You have  
11 high risk, intermediate risk -- excuse me -- and --  
12 and low risk, and you also have nonmuscle-invasive  
13 and muscle-invasive. And that's just how you  
14 classify all of urothelial -- urothelial. Excuse  
15 me.

16 You also have -- I've treated, you know,  
17 squamous cell carcinomas of the bladder and I've  
18 treated adenocarcinomas of the bladder, so all  
19 different types of cancers of the bladder.

20 Q How do you typically treat these types of  
21 cancers?

22 A Well, I think, you know, if we back up a  
23 little bit, you know, you first start -- I mean,  
24 the treatment process starts in hello, and -- and  
25 you, you know, you sit down with a patient and you

1 take a complete history and physical of the patient  
2 and you assess, you know, risk. You go through  
3 that differential of assessing risk, and -- and  
4 then -- and then you go through the diag- -- from  
5 there, you go through the diagnostic process.

6 And once you go through the diagnostic  
7 process where you can classify, then the treatment  
8 would be based on -- on -- on their risk, their  
9 stage, and their grade.

10 Q Sure.

11 Is BCG therapy a form of treatment of  
12 bladder cancer?

13 A In a certain class, it is.

14 Q What is a BCG?

15 A So BCG is --

16 I don't want to mess up the actual name.  
17 It's Bacillus Calmette-Guerin. I think that -- I'm  
18 pronouncing it correctly. But it's an attenuated  
19 form of -- of -- oh -- tuberculosis. And,  
20 basically, what you're doing is you're injecting  
21 that into the bladder to evoke an immune response.

22 And the whole point of BCG is to prevent  
23 recurrence. It's most -- it is treated in  
24 intermediate- and high-risk nonmuscle-invasive  
25 bladder cancers; so those cancers that have not

1 invaded into the wall, but they're a little bit  
2 more aggressive.

3 And what you're doing is you get immune  
4 response to potentially attack any residual cells  
5 to prevent reoccurrence.

6 Q Is transurethral resections, or TURBT, I  
7 think, TUBTs, is that a form of treatment of  
8 bladder cancer?

9 A So -- so -- so it's actually, a TURBT is  
10 when you resect a prostate. But a TURBT --

11 Q Oh, I'm sorry.

12 A -- it --

13 Yeah. That's okay.

14 -- is when you resect --

15 So -- so that's when you --

16 It's part of the diagnostic and  
17 therapeutic process. And, so, you're resecting the  
18 tumor, hopefully all of it, to -- to -- in order to  
19 stage it.

20 If it's a low-grade nonmuscle-invasive,  
21 then that's all you need to do. But if it's not  
22 invasive and it's high-grade, then BCG is one of  
23 the other options that you can use to -- to treat.

24 You know, if it's more aggressive and  
25 invasive, then that's a whole nother set of

1 treatment, known treatment.

2 Q Understood. Thank you.

3 Now, in your practice, how many patients  
4 per year would you estimate that you've diagnosed  
5 with bladder cancer?

6 A I probably diagnose --

7 Diagnosing, so these would be new  
8 patients.

9 -- two or three a week. And I  
10 probably -- well, that is how many I diagnose a  
11 week. So you just have to -- that's however that  
12 comes out. That would be times four, times, I  
13 guess, 12, I mean. So 150 a year, I guess, 100 to  
14 150 a year.

15 Q Would -- would that be constant over the  
16 past -- past years, 10, 15 years that you've been  
17 practicing?

18 A Yeah. I would say the diagnostic, that's  
19 probably true. I see a lot of bladder cancer here  
20 in the state of Alabama. It's not a lot of uro --  
21 uro-oncologists here. And, so, you know, you get a  
22 lot of patients that are referred to me.

23 Q Do you also treat patients that have been  
24 diagnosed with bladder cancer or urothelial cancer  
25 that you didn't necessarily diagnose but were

1 referred to you for treatment?

2 A Yeah. Yes, sir.

3 Q About how many per week patients that  
4 have been diagnosed by someone else with bladder or  
5 urothelial cancer do you treat?

6 A You know, most urologists will see the  
7 nonmuscle-invasive as a general urologist's  
8 patients. So most of those patients, they take  
9 care of, although I do get some of those patients.

10 The primary referrals I get are the ones  
11 that have muscle-invasive bladder cancer, and those  
12 are the ones that need, you know, more aggressive  
13 treatment in the form of maybe surgery. So in  
14 that --

15 I would say the bulk of the patients are  
16 probably nonmuscle-invasive cancer, in general,  
17 and -- and then the specialized -- or the ones that  
18 are surgical probably make up 10 percent, maybe 13  
19 percent.

20 So in that, I would say I typically get  
21 one -- one referral -- one to two referrals a week  
22 for -- for that patient population for muscle --  
23 for the muscle-invasive that need surgery.

24 Q Understood.

25 What do you tell your patients about the

1 risk factors for -- for bladder cancer?

2 A Well, you know, I -- you know, obviously,  
3 I start with assessing, you know, their history and  
4 physical, and I want to know, you know, what --  
5 what is their environment like? You know, where do  
6 they work, sleep, eat? I want to know what, you  
7 know, occupation they -- they hold. I'm gonna --  
8 I'm gonna ask if -- if they smoke. I wanna -- I  
9 wanna know their family history. Are there any  
10 genetic disorders? And I ascertain that moreover  
11 by asking more of cancer history.

12 And, so, those are the --

13 Or, you know, have they had cancer  
14 before? Is this a recurrence?

15 So those are the things I typically, as I  
16 classify, are the discussion around risk factors.

17 Q You'd agree that smoking is the most  
18 significant risk factor for bladder cancer; right?

19 MR. RUZICKA:

20 Objection. Form.

21 A I wouldn't -- I wouldn't -- I wouldn't  
22 agree to that at all. I wouldn't agree to that.

23 MR. ANWAR:

24 Q Why not?

25 A Well, I think it is a risk factor.

1 Q What is your understanding of the  
2 strength of the association between smoking and  
3 bladder cancer in terms of the -- the literature?

4 MR. RUZICKA:

5 Objection. Form.

6 You can go ahead.

7 A I think it's probably the most studied.  
8 I think that, you know, it is a known risk factor.  
9 The strength of -- of it being a risk factor as  
10 opposed to any other risk factors, I think -- I  
11 think anything that can cause genotoxic effects to  
12 the urothelial, for example, I don't know if one,  
13 you know, carcinogenic agent is -- is a stronger  
14 cause of, you know, that type of genotoxic effect.

15 I'm not sure if that's actually been  
16 studied. I haven't seen it or read it. But -- but  
17 that's not certainly something that I actually  
18 would have a discussion with a patient about as  
19 what is -- you know, this risk factor is stronger  
20 than that risk factor. Moreover, I just kind of go  
21 through and figure out what are the risk factors.

22 Q Is smoking the most well-known,  
23 understood risk factor?

24 MR. RUZICKA:

25 Objection. Form.

1 A I'm not sure. I know that it is a -- a  
2 risk factor.

3 MR. ANWAR:

4 Q How do you compare -- how would you  
5 compare smoking as a risk factor to some of the  
6 other risk factors you just -- you just identified?

7 A I think -- I mean, I think if a patient  
8 only has smoking in their history, then, obviously,  
9 that's -- probably will be the most important one  
10 to that patient. But I think that there's probably  
11 unknown risk factors, too.

12 And, so, I think it's important when I'm  
13 talking to patients to, again, evaluate all  
14 potential risk factors, because that's important to  
15 communicate to the patient so that -- so that at  
16 least the ones that are known, where you could  
17 identify, and you can potentially al- -- that may  
18 be part of their treatment plan --

19 For example, if I'm trying to --

20 I mean, these patients get diagnosed, and  
21 some of them have got, you know, plenty years of  
22 life left. And, so, if I can identify any risk  
23 factors and I can remove them from those risks, it  
24 potentially may help them going forward.

25 So I just try to identify any risk, I try

1 to counsel the patient about those risks, and --  
2 and see if we can, you know, alter that as we  
3 pertain to the counseling going forward, and also,  
4 any other family members or any other -- other  
5 people that may be at risk of those potential risk  
6 factors or those potential carcinogens.

7 Q Sure.

8 In your report, you state smoking is  
9 estimated to contribute to over 50 percent bladder  
10 tumors. Correct?

11 A I'll have to re-look at that, if you  
12 don't mind.

13 Q Sure. It's on page 19 of your report.

14 A Okay.

15 Q I'll pull it up.

16 A It is page -- where on page 19 is that?  
17 Or maybe you can pull it up and show it to me.

18 Q Sure.

19 A I don't see it on page 19.

20 Q I will highlight it for you.

21 A Yeah.

22 Q Right here, second sentence in this  
23 paragraph under -- second sentence in the second  
24 paragraph under opinion 2, it says "although  
25 smoking is estimated to contribute to over 50

1 percent of bladder tumors, it is the easiest to  
2 control for when studying populations."

3 Did I read that correctly?

4 A Yeah. And I'm sure that's a reference  
5 that I made from one of my articles.

6 And, certainly, smoking is a -- is a risk  
7 factor. And, again, the part here is contributes.  
8 And it's probably, for known risk factors, it  
9 certainly does contribute. I would agree that it  
10 certainly does contribute.

11 Q And here you state it contributes to over  
12 50 percent of bladder tumors; right?

13 A Yeah. I think what I said was estimated  
14 to contribute.

15 Q So here you say it's estimated to  
16 contribute to over 50 percent of bladder tumors;  
17 correct?

18 A Right. Yes. That's what -- yes.

19 Q Now, there was another portion of your  
20 report where you describe bladder cancer as a  
21 disease of toxic exposure. Is that right?

22 A Correct.

23 Q In your practice, do you always identify  
24 a toxic exposure as the cause of a patient's  
25 bladder cancer?

1 A If it's -- if it's -- if it's available.  
2 If it's available in the history, it's available in  
3 their occupational history, if it's available in  
4 the environmental history, then -- then, you know,  
5 then, obviously, we have a discussion with the  
6 patients about it.

7 Q In what percentage of your patients that  
8 are diagnosed with bladder cancer or urothelial  
9 carcinoma are you able to identify toxic exposure  
10 as a cause?

11 A You know, in the state of Alabama, I  
12 probably -- that's --

13 I would have to think about that question  
14 for a minute. I'm trying to see. That's a...

15 I would say probably, in my patient  
16 population, I would say 50 to 75 percent, maybe.

17 Q Now, bladder cancer -- cancer or  
18 urothelial carcinoma, it's not exclusively a  
19 disease of toxic exposure; right?

20 MR. RUZICKA:

21 Objection. Form.

22 A So -- so when -- when you think about  
23 bladder cancer, what it is is it is the mutagenetic  
24 -- mutagenic transformation of urothelial cells to  
25 urothelial cancer cells. And you -- what causes

1 that mutagenetic -- mutagenic effect is genotoxic  
2 substances, and yet there are some patients that  
3 are just born with those mutagenetic cells. And  
4 they'll pass down. And you see those in different  
5 disorders.

6 And, so -- so -- so that's what causes  
7 the bladder cancer. And so it's either you get  
8 somatic transformation, so you either get germline,  
9 which those are passed down from, you know,  
10 parents, and -- or there is a toxic effect on the  
11 cells that causes the cell --

12 So you either get the germline  
13 transformation because those mutant genes are  
14 passed down, or you get somatic transformation from  
15 a genotoxic agent.

16 Q So that's kind of what I was getting at.  
17 You identified family history as a risk factor for  
18 bladder cancer as well. Correct?

19 A It is -- it is -- it is a -- a risk  
20 factor. Correct.

21 Q And, so, in that case of a family  
22 history, there -- there could be a genetic aspect  
23 or cause of developing bladder cancer entirely  
24 independent of any toxic exposure. Correct?

25 MR. RUZICKA:

1           Objection. Form.

2           A           It could be a risk factor. But,  
3 typically, you would see that in the patient's  
4 family history. And those patients, in bladder  
5 cancer --

6                   And, moreover, there's a syndrome called  
7 Lynch syndrome, which really usually is seen more  
8 so up- -- urothelial upper tracts. But those  
9 patients have colorectal cancers, and you usually  
10 see that within a family.

11                   So when I'm assessing a patient for that  
12 risk factor, those are the things that I typically  
13 would see in those patients that have that  
14 disorder.

15           Q           Would you include smoking in the category  
16 of toxic exposure for purposes of bladder cancer?

17           A           I would. I mean, it is a -- it is a --  
18                   Excuse me.

19                   It can cause a genotoxic effect to the  
20 urothelium. It is an environmental exposure.

21           Q           In your practice, you focus on treating  
22 patients; right?

23           A           I focus on evaluating, I focus on risk  
24 assessment, and I focus on treating.

25           Q           In your practice, is identifying the

1 cause of a patient's bladder cancer less important  
2 than treating the patient; right?

3 A I don't -- I don't agree with that. For  
4 example, I get a gentleman that comes in, and that  
5 person is working in a certain environment. That  
6 person is a smoker. That person may be with me for  
7 10 or 15 years that I'm treating him. And -- and,  
8 so, I want to --

9 It's important that they understand all  
10 of those risks and -- so that we can change that  
11 portion. What I don't want to do is continue to  
12 have genotoxic effects on that patient's, you know,  
13 urothelium while I'm treating him.

14 And, so -- and so that patient may not  
15 get his bladder removed. That patient may be  
16 getting BCG or some other treatment. So I think  
17 it's important for that particular patient that --  
18 that not only do we give that patient a treatment  
19 plan, which may include medications or surgery, but  
20 we also -- it's important to identify and remove  
21 them from that risk.

22 And, moreover, are there other people,  
23 family members, friends, coworkers, that may be in  
24 the same -- may be incurring that same risk.

25 Q Do you --

1 A So I think it's all -- to answer your  
2 question, I think it's all important.

3 Q Okay. Do you perform a differential  
4 diagnosis or etiology to determine the cause of --  
5 in each of your patients diagnosed with bladder  
6 cancer?

7 A I do.

8 Q In -- in your words, what is your  
9 understanding of a differential diagnosis or  
10 differential etiology?

11 A In my words, a differential etiology is  
12 what are all the potential causes or risks that  
13 caused this cancer or caused that patient's cancer.

14 So I typically will, you know, go through  
15 all, you know, potential possible, and then, you  
16 know, we'll rule in or rule out, depending on what  
17 the patient's exposed to.

18 But we will make sure we go down the list  
19 when I sit down with a patient and start asking the  
20 patient questions to try to obtain a history so  
21 that I can form that etiology list or etiology --  
22 potential etiology list.

23 Q Is there a difference between a  
24 differential diagnosis versus a differential  
25 etiology?

1 A Well, I think, you know, sometimes people  
2 may use those terms interchangeably. But if I'm  
3 saying differential etiology, I'm thinking, well,  
4 what other risk that could contrib- -- potentially  
5 cause it.

6 When I'm saying "differential diagnosis,"  
7 you know, that depends on where I am in the  
8 spectrum of the diagnostic process.

9 If -- if the patient is coming in and  
10 they just have gross hematuria, then -- then --  
11 then the differential's gonna be one thing.

12 If I -- if I know when I see a tumor that  
13 a differential diagnosis is --

14 Is this a urothelial tumor? Is this a --  
15 That's a diagnosis.

16 Is this a urothelial tumor? Is this a  
17 squamous cell tumor? Is this adenocarcinoma? Is  
18 this some kind of rare, rare tumor, neuroendocrine  
19 or a sarcoma or something that's rare?

20 So, you know, all those things are a  
21 little bit different. That is diagnosed as  
22 different -- these are my differential diagnoses.

23 But in my practice, I do a differential  
24 etiology and then, subsequently, a differential  
25 diagnosis. I separate the two.

1 Q In the context of Mr. Raymond's case, are  
2 you using differential diagnosis and differential  
3 etiology to -- to mean the same thing?

4 A Yeah. I think that -- I think that, you  
5 know, his exposure risk is what -- I'm using that  
6 as etiology. I think that's what I put in my -- in  
7 my paper was his exposure risk, and that's  
8 etiology. Yeah.

9 Q Would you agree that performing a  
10 reliable differential etiology requires ruling in  
11 all potential causes and ruling out potential  
12 causes?

13 A Well, I think what I would say is when  
14 I'm sitting down with a patient, I sit down and I  
15 have a conversation and -- and I take a history.  
16 And when I take that history, I want to make sure  
17 that we cover all potential risks and to see if  
18 that patient has been exposed to all potential  
19 risks.

20 And then we kind of, you know, will  
21 tailor that according to whatever exposures that  
22 patient may or may not have had.

23 Q So you -- you do rule in potential causes  
24 and then rule out potential causes; right?

25 A I guess I'm a little confused as to that

1 question.

2 Q I think earlier in your testimony you  
3 essentially said that, that you -- you considered  
4 the risk factors or you rule in -- you consider  
5 potential causes, rule them in, and then you  
6 evaluate them and you -- you try to rule out  
7 potential causes to identify the -- the cause or  
8 cause of a patient's bladder cancer. Did I  
9 misunderstand you?

10 A I'm not sure. But I can -- I can easily  
11 clar- --

12 I'm not sure what --

13 You know, can I -- let me just  
14 clarify what --

15 Q Sure.

16 A -- if that makes it easier.

17 I sit down, and if a patient comes to me  
18 at this point, this patient has bladder cancer,  
19 whether he's -- that patient is referred -- he or  
20 she is referred or I diagnosed him myself. And  
21 along -- and what I want to do is -- is I will sit  
22 down and I will go through a thorough history with  
23 the patient, and I will go through and I will sit  
24 down and potentially go through with the patient  
25 through a system of questions all the potential

1 risks to see if that patient has been exposed to --  
2 to all of those risks.

3 Because the patient may or may not know.  
4 Right? And, so -- and, so -- and then once I sit  
5 down and we go through all the risks with the  
6 patient and I assume --

7 I assume that's the rule-out part we're  
8 talking about. I'm just a little bit confused on  
9 the ruling in, ruling out question.

10 Then -- then, whatever that patient's  
11 been exposed to --

12 Well, maybe that's the rule --

13 I can't -- I'm just confused on the rule  
14 in, rule out.

15 I just sit down. I go through the entire  
16 list of all potential causes with the patient to  
17 see if they've had exposure to that patient [sic]  
18 -- if they've had exposure to that substance or  
19 toxin or whatever.

20 And -- and then I form the list of  
21 potential etiologies or -- or actual etiologies  
22 according to what they've been exposed to.

23 So maybe that's the rule out. I'm just a  
24 little confused on the rule in, rule out question.  
25 That's all.

1 Q Okay. How do you -- how do you decide  
2 what risk factors or potential causes to rule in?

3 A Well, I think -- I think, you know -- I  
4 think there's just a certain set. Just from my  
5 training, you know, all of my conferences, all of  
6 my readings, I think, you know, we know the  
7 typical, you know, etiology causes that are known  
8 for bladder cancer.

9 So I make sure that, you know, I -- I  
10 review those with the patients and/or family  
11 that -- that are present, and -- and then I'm  
12 trying to assess has that patient been exposed to  
13 those known risk factors.

14 Q Based on your training and experience,  
15 what are the typical causes for bladder cancer?

16 A Definitely I think, you know, when you --  
17 you know, number one would be, you know,  
18 environmental, which it could be, you know, from  
19 various, you know, environmental toxins, you know,  
20 such as in the case with Mr. Raymond Edwards.

21 Then there's smoking.

22 There are herbicidal indications or  
23 evidence supporting herbicidals, you know, such as  
24 what's seen in the Agent Orange.

25 There are chronic infections. And I

1 think that's seen more in the squamous cell.

2           There are chemotherapy agents and --  
3 cyclophosphamide, for example. That's chemotherapy  
4 that usually was linked to childhood other tumors,  
5 and they got that chemotherapy. Radiation.

6           Family history, such as in Lynch  
7 syndromes. You know, those are the ones that are  
8 your more common ones that we kind of -- are known  
9 in the urology oncology literature.

10 Q           Are you always able to determine the  
11 cause of the bladder cancer diagnosed in your  
12 patients?

13 A           No. Sometimes -- I mean, I think there's  
14 significant increased unknown causes that still  
15 exist that we just don't know what they are today.

16 Q           And, now, what percentage of your  
17 patients are you able to determine the cause of a  
18 patient's bladder cancer?

19 A           Yeah. I think a -- yeah. I think I said  
20 earlier maybe 50 to 75 percent.

21 Q           And, so, then, in percentage of patients,  
22 you're unable to determine the cause of a patient's  
23 bladder cancer? We're talking 25 to 50 percent?  
24 Is that right?

25 A           In my -- in my practice. And that's a

1 rough estimate.

2 Q Understood.

3 For patients that you're unable to  
4 identify the cause, do you consider their bladder  
5 cancer to be idiopathic?

6 MR. RUZICKA:

7 Objection. Form.

8 A I think that I -- I don't typically use  
9 it. I think that term is used, you know, in  
10 different forms. I typically use "unknown causes."

11 MR. ANWAR:

12 Q Do you -- do you understand -- either --  
13 So, as I understand your testimony, you  
14 use the term "unknown causes." Correct?

15 A Correct.

16 Q Does idiopathic and unknown cause mean  
17 the same thing?

18 A In my mind --

19 Well, let me back up. I think people use  
20 that term differently. In my practice, I -- I --  
21 because I know that it can be used and it can be  
22 confusing, I don't typically use "idiopathic." I  
23 use "unknown causes." Some use idiopathic as  
24 unknown causes. Some use idiopathic as some type  
25 of spontaneous transformation. And, so, because of

1 that, I use "unknown causes."

2 Q Understood.

3 How many patients throughout your career,  
4 Doctor, have you seen or treated that spent time at  
5 Camp Lejeune?

6 A You know, interesting. I remember --

7 So I think I've seen -- I don't know --  
8 maybe two, three that have come in and -- over the  
9 years, and I remember, you know, them coming in and  
10 saying that they were at Camp Lejeune. And I can't  
11 exactly remember what potential cancer they may  
12 have had. I don't remember in my practice any type  
13 of GU cancers that the patients had.

14 But, you know, I -- I really -- I would  
15 say probably less than five over my career, and --  
16 but -- but I don't remember the details.

17 Q Of the less than five patients that  
18 you've seen throughout the years that spent any  
19 time at Camp Lejeune, how many of those patients  
20 were diagnosed with bladder cancer?

21 MR. RUZICKA:

22 Objection. Form.

23 A I don't know. I mean, I don't remember  
24 seeing them for bladder cancer. I just, you know,  
25 I just remember Camp Lejeune. I remember them

1 talking about it, just sort of kind of roughly, in  
2 retrospect. But I -- I don't remember.

3 MR. ANWAR:

4 Q When is the last time you saw a patient  
5 that told you they spent any time at Camp Lejeune?

6 A It's been years.

7 Q Plus or minus five years?

8 A I can't remember. I don't want to go on  
9 the record and say. May- -- may- -- may- -- it's  
10 maybe -- maybe 5 years. I don't remember in the  
11 last probably two, three years, so maybe five  
12 years.

13 Q Do you recall what time frames those  
14 patients that you mentioned spent time at  
15 Camp Lejeune, when time frames that they spent time  
16 at Camp Lejeune for?

17 A I don't remember having detailed  
18 conversations about their -- their time at  
19 Camp Lejeune. I just remember discussions. For  
20 some reason, I just remember them talking about,  
21 you know, Camp Lejeune.

22 I sort of remember some issues, them  
23 talking about water contamination. And it was  
24 probably part of just a, you know, just  
25 conversation. But I know -- I don't remember that

1 as part of any workup, medical workup that I was  
2 actually participating in.

3 Q Have you -- any of the patients that  
4 you've seen, the less than five patients that  
5 you've seen that spent time at Camp Lejeune, did  
6 you -- or have you told any of them that it was the  
7 Camp Lejeune water that caused the -- the medical  
8 issue that they were seeking treatment for from  
9 you?

10 A No, sir.

11 MR. RUZICKA:

12 Objection. Form.

13 A No, sir.

14 MR. ANWAR:

15 Q Your -- your practice doesn't require  
16 familiarity with TCE; correct?

17 MR. RUZICKA:

18 Objection. Form.

19 A Would you give me -- can you explain that  
20 question a little bit more? When you say "your  
21 practice," are you talking about my -- my business  
22 practice? Are you talking about my medical  
23 evaluation of a --

24 I'm not -- I need a little bit more  
25 explanation of it. That's all. Please.

1 MR. ANWAR:

2 Q Your practice as a -- as a urologic  
3 oncologist in diagnosing and treating patients  
4 doesn't require familiarity with TCE; correct?

5 MR. RUZICKA:

6 Objection. Form.

7 A I don't -- I mean -- I guess --

8 It doesn't require. I'm still confused  
9 as to the question.

10 So do I have knowledge of TCE? I guess  
11 I'm trying to understand the question a little bit  
12 better.

13 From what I'm hearing is there's a  
14 requirement to know about TC- --

15 That's what's confusing about the  
16 question.

17 Q I guess I'm -- what I'm getting -- what  
18 I'm getting at, in your -- your day-to-day practice  
19 when you're seeing and treating patients, you don't  
20 need to know about T- -- TCE, generally speaking,  
21 in order to do your job as a doctor; right?

22 A Well, I think, as a good urologic  
23 oncologist, you want to know -- you want to have  
24 familiarity with any of the potential risks and  
25 causes of bladder cancer, particularly if you're

1 treating bladder cancer. Let me be more specific.  
2 Because you could be a urologist oncologist and not  
3 treating bladder cancer.

4 But certainly any urologist oncologist --  
5 in particular, my practice -- I want to have  
6 familiarity with all potential risk factors so  
7 that, you know, I can be up to date as possible to  
8 deliver the best care to the patient.

9 Q Prior to your involvement in this case,  
10 have you ever had a conversation with a patient  
11 about TCE as a risk factor?

12 A I never had one with a patient, no.

13 Q Prior to your involvement in this case,  
14 have you ever had a conversation with a patient  
15 about PCE as a risk factor?

16 A No.

17 Q Prior to your involvement in this case,  
18 have you ever had a conversation with a patient  
19 about vinyl chloride as a risk factor?

20 A No.

21 Q And prior to your involvement in this  
22 case, have you ever had a conversation with a  
23 patient about benzene as a risk factor?

24 A No.

25 Q Have you ever been subject to any

1 disciplinary actions or censures by licensing  
2 bodies?

3 A No, sir.

4 Q Any disciplinary actions by any court or  
5 tribunal?

6 A No.

7 Q I can keep going, but we've been going  
8 for a little over an hour. If you'd like to take a  
9 break, we can take a short --

10 A I stand in surgery six hours at a time,  
11 so you're ready to go.

12 Q Okay. Sounds good. Yeah. We can just  
13 plow through, then.

14 A That's right.

15 Q Would you agree that medicine is not an  
16 exact science?

17 A Agree.

18 Q You'd agree that the cause of bladder  
19 cancer is multifactorial; correct?

20 A Agree.

21 Q Would you agree that every patient is  
22 different, with idiosyncratic risk factors?

23 A Would you define idiosyncratic for me?

24 Q Um, specific to the individual patient.

25 A Correct.

1 Oh, would you -- I tell you what. Now  
2 would you repeat the question?

3 Q Sure.

4 A That would be --

5 Q Would you agree that every patient is  
6 different, with idiosyncratic risk factors?

7 A Agree.

8 Q Would you agree that the precise cause of  
9 any patient's bladder cancer is generally unknown?

10 A I think the precise cause of anyone's  
11 cancer is unknown. I mean, I think that that's --  
12 in general, we -- we make conclusions based off  
13 enough evidence. But when you -- when you start  
14 dealing in absolutes, I don't think you can deal in  
15 absolutes.

16 Q Bladder cancer is one of the most common  
17 cancers in the United States; correct?

18 A Yes.

19 Q Do you know where it ranks among the most  
20 common cancers?

21 A Uh, I would have to look at that number  
22 again. I know it's in the -- I think it's in the  
23 top five, five or seven, as far as just incidence  
24 of men or in people, yeah. It's in the --

25 I would have to look at that number.

1 Q Okay. So just based -- without looking  
2 at it, your understanding is bladder cancer is in  
3 the top five or seven of most common cancers;  
4 correct?

5 A I think so. I think so.

6 Q And I think we discussed earlier  
7 urothelial carcinoma is the most common type of  
8 bladder cancer; correct?

9 A Correct.

10 Q And I think in your report you say  
11 urothelial carcinoma comprises 90 percent of  
12 bladder cancers. Correct?

13 A Correct.

14 Q You agree that bladder cancer is more  
15 common in men than in women; right?

16 A Yes.

17 Q Do you know why that is?

18 A There's a lot -- there's some  
19 presumptions there that, like -- you know, that  
20 women typically will have a delay in diagnosis --  
21 excuse me -- and they believe that some of that  
22 is -- is women actually, you know, having menstrual  
23 cycles and sort of kind of misdirecting their blood  
24 in the urine for being menstrual or maybe some  
25 other symptoms for being UTIs. So a lot -- there's

1 some presumptions there. I don't know if we  
2 really, really know. But we know the numbers  
3 exist.

4 Q We just simply know, generally speaking,  
5 based on the available information, bladder  
6 cancer's more common in men than in women.

7 A Correct.

8 Q Is one possible explanation for that that  
9 smoking is more common in men than in women?

10 MR. RUZICKA:

11 Objection. Form.

12 A I can't -- I can't conclude that. I just  
13 know that -- that, you know --

14 What I can conclude is that bladder  
15 cancer is more common in men than women.

16 MR. ANWAR:

17 Q In your practice, what percentage of your  
18 patients diagnosed with bladder cancer are men?

19 A Probably 60 to 70 percent.

20 Q Would you agree that bladder cancer is  
21 most common among white Americans compared to  
22 African American or Hispanic Americans?

23 A I would agree.

24 Q Do you know why that is?

25 A Don't -- do not know why.

1 Q Like all cancers, the risk of developing  
2 bladder cancer increases due to age; right?

3 MR. RUZICKA:

4 Objection. Form.

5 A So it is -- it is -- I would not say it's  
6 due to age. I would say that -- I would say that  
7 men typically are diagnosed at a later point in  
8 life.

9 Q Do you know why that is?

10 A Yeah. I think when you -- it goes back  
11 to --

12 I don't -- we don't fully know. Okay?  
13 But I think that latency period from -- I think,  
14 you know, that's part of it when you --

15 So -- so to develop a cancer --

16 And, again, you -- not again. But the  
17 word "development," you -- you have -- you go  
18 through a process. And that process is you have  
19 a -- an event, and that event is, let's say, in  
20 this case, a genotoxic effect. You damage the  
21 cells recurrently, probably. Makes it even more  
22 intense. And -- and -- and then eventually you get  
23 genotoxic effects on the genes and the DNA.  
24 Eventually, those genes will start making mutant  
25 genes. You start replicating mutant genes.

1 Eventually they start making abnormal cells.

2 And when you are younger, your immune  
3 system is stronger. When you get older, that  
4 immune system is the same age you are. And, so,  
5 over time, it takes that time for that tumor,  
6 that -- that exposure risk, to form an actual  
7 cancer. So you have to form a tumor. Then you  
8 form a cancer. And that process takes years.

9 And, so -- and, so, I don't think that  
10 the age itself is causing the cancer.

11 Something just happened.

12 Q Oh. I'm pulling up your report. I'm  
13 sorry. I didn't mean to interrupt you.

14 I just wanted to show you -- this is page  
15 17 of your report. You have there age in your  
16 discussion of risk factors. And the first sentence  
17 there is "like all cancers, the risk of developing  
18 bladder cancer increases due to age."

19 Did I read that correctly?

20 A Well, developing the actual cancer,  
21 right. It occurs at a -- because --

22 But it -- but it -- it occurs -- yeah.  
23 The risk of it is at -- at -- the cancer occurs at  
24 an older age of actually developing the bladder  
25 cancer. But the process of -- of the cancer takes

1 years. So -- so to be diagnosed with that cancer,  
2 yes, at a -- at earlier age. But, again, that  
3 process from your event as I just described to you  
4 actually developing the cancer is that latency  
5 that's been well documented, and it goes through  
6 that process of when you actually are diagnosed  
7 with cancer.

8 Q Do you still agree with that statement  
9 that you have there in your report?

10 A Yeah. Because the risk of developing the  
11 cancer is -- it is at an increase of -- at an  
12 increased age. I do.

13 Q And then you go on to state the average  
14 age at diagnosis is 73. Correct?

15 A Correct.

16 Q And Mr. Raymond, in this case, was  
17 diagnosed with urothelial carcinoma in 2021 at the  
18 age of 78; correct?

19 A That's correct.

20 Q And I think we discussed earlier he was  
21 diagnosed with high-grade urothelial carcinoma.  
22 Correct?

23 A Correct.

24 Q In your practice, what percentage of your  
25 patients are diagnosed with urothelial carcinoma

1 over the age of 73?

2 A Ooh. I would say they -- without knowing  
3 specifics, I would say probably most of them are  
4 over 65. But, you know, over 73 itself,  
5 probably --

6 In Alabama, I think we may even see  
7 them -- yeah. Probably 50 percent. And, again,  
8 that's a -- that's just a ballpark guess.

9 Q In that same paragraph, you state -- and  
10 I'll highlight it there for you -- "the age at  
11 diagnosis is in accordance with his long" --  
12 Mr. Raymond's -- "long latency period and is  
13 reflective of the effect of his exposure to known  
14 carcinogens decades -- decades prior."

15 Did I read that correctly?

16 A Yes, sir. And I think that's pretty -- I  
17 think I said that, you know, when you look at the  
18 sentences two above, where I said there is decades  
19 between exposure to the mutagen and mutagen  
20 overcoming the body's suppression, that's what I  
21 was describing earlier, too. So I think all of  
22 that is the same. That's that process where it  
23 takes the latency to occur.

24 Q In that sentence, what known carcinogens  
25 are you referring to?

1 A I think that, you know, when you go back  
2 to the -- all of the reports and, you know, when --  
3 when you --

4 This is on -- we're talking about, just  
5 so we're clear, we're talking about Mr. Edwards  
6 here; correct?

7 Q Mr. Raymond. Sure.

8 A Raymond. Raymond Edwards.

9 And so -- and so those carcinogens would  
10 be, in his case, TCE and benzene.

11 Q Would you consider his smoking history to  
12 be one of the known carcinogens?

13 A Yes, I would.

14 Q And Mr. Raymond was a 50-year  
15 pack-per-day smoker; correct?

16 A Correct.

17 Q And Mr. Raymond also worked at a GE  
18 silicone plant for 38 years; correct?

19 A You're asking me if he worked at a GE  
20 silicone plant?

21 Q For 38 years. Correct?

22 A Yes.

23 MR. RUZICKA:

24 Objection. Form.

25 Go ahead.

1 MR. ANWAR:

2 Q And while working at that plant, he was  
3 exposed to copper and silicone dust; correct?

4 MR. RUZICKA:

5 Objection. Form.

6 A He -- he was exposed to that.

7 MR. ANWAR:

8 Q Would you consider his exposure to copper  
9 and silicone dust, or silica, to be included in the  
10 known carcinogens you're referring to in that  
11 sentence?

12 A To Mr. --

13 You mean as far as Mr. Raymond is  
14 concerned?

15 Q Yes.

16 A Well, no, because --

17 And, again, I -- I just take from his  
18 deposition, he -- I think he worked -- I think he  
19 said he worked eight years, maybe, in that plant  
20 exposed to those, and then the rest of the time, I  
21 think he said -- and if I'm correct -- worked at a  
22 desk.

23 But, moreover, he also said he wore  
24 protective -- PPE, personal protective equipment,  
25 N95 mask, personal eyewear.

1           So I've got to assume that if he had  
2 appropriate, you know, PPE, then he wouldn't have  
3 had that type of exposure to -- to those -- those  
4 agents you just described, and, therefore, I would  
5 rule that out of my differential.

6           Q           Understood. We'll talk more about that  
7 in a little bit here.

8           The -- the next sentence in this  
9 paragraph states "a consideration of Mr. Raymond's  
10 age alone as a risk factor is inappropriate. It  
11 can be considered in connection with other risk  
12 factors as an additive factor, but age alone is not  
13 the cause of his bladder cancer."

14           Did I read that correctly?

15           A           That is correct.

16           Q           I wanted to ask you what you meant by  
17 additive factor in that sentence.

18           A           (Reading) Well, yeah. I -- I think --  
19 what I -- what I meant in that sentence is you --  
20 you -- you add age to --

21           So he -- we know that he had other risk  
22 factors, such as toxic, you know, chlorinated  
23 solvents. He had cigarette smoke. And when you  
24 have those toxic agents, those genotoxic agents,  
25 and then they cause a mutagenic effect that creates

1 can- -- mutant cancer cells and -- and as he ages,  
2 then his immune system is -- becomes -- becomes  
3 somewhat suppressed because he has a 70-year-old  
4 immune system, just like he is.

5 Now those cancer cells that developed  
6 from those genotoxic agents are now able to form an  
7 actual cancer. So --

8 But did age itself cause the cells to  
9 become cancerous -- mutagenic and cause cancer  
10 cells? No. That has -- that is not a risk, or at  
11 least we don't know that as a risk as of this  
12 point.

13 However, the age as it relates to his  
14 defective immune system, in addition to his now  
15 mutagenic cells, that can now cause those cancer  
16 cells to form cancers. That's why I meant --  
17 that's what I meant by that additive effect.

18 Q Understood.

19 Now, earlier you agreed that smoking is a  
20 known risk factor for urothelial carcinoma.

21 Correct?

22 A Correct.

23 Q And I think I just asked you that, and  
24 you confirmed that Mr. Raymond smoked one pack of  
25 cigarettes per day for 50 years; right?

1 A Correct.

2 Q And, per your report, and consistent with  
3 my understanding, that was -- that 50-year period  
4 was 1963 to 2013; correct?

5 A Yes, sir. I think that was taken from  
6 his deposition. Yes, sir.

7 Q Now, one pack of cigarette -- one pack of  
8 cigarettes contain ten cigarettes; right?

9 MR. RUZICKA:

10 Object to form.

11 A I'm gonna submit to say -- I'm not a  
12 cigarette smoker, so I'm not sure. But, yes, I  
13 would agree with you. I just -- yes, sir.

14 MR. ANWAR:

15 Q Okay. When you -- when you --  
16 Do you use the term "pack-per-day" in  
17 smoker -- in your practice as a physician?

18 A I do. I do.

19 Q And when you refer to a pack per day,  
20 what do you mean in terms of the number of  
21 cigarettes?

22 A I assume it's what --  
23 To be honest with you, I really haven't  
24 thought about that in terms of the numbers of  
25 cigarettes. We just, in my training, we just use

1 pack per day, and I know a pack, and so that helps  
2 me understand sort of the volume that they smoke.  
3 But I don't know how many's in there.

4 Q Okay. Let's -- let's just assume it is  
5 ten cigarettes per pack. Okay?

6 A Yes, sir. Yes, sir.

7 Q Assuming ten cigarettes per pack, one  
8 pack per day means 3,650 cigarettes per year.

9 Correct?

10 MR. RUZICKA:

11 Objection. Form and foundation.

12 A I -- you know, I can do the numbers, but  
13 I'm just gonna trust that. Yes, sir.

14 MR. ANWAR:

15 Q Yeah. And that would be ten times 365;  
16 right?

17 A Yes, sir.

18 Q And -- and I might have --

19 Okay. Let's conservatively --

20 I might have misspoke. Do you know, does  
21 a pack of cigarettes contain 20 cigarettes per day,  
22 or 20 cigarettes in a pack?

23 MR. RUZICKA:

24 Objection. Form and foundation.

25 A I don't.

1 MR. ANWAR:

2 Q Okay. And, so, if -- if --

3 Assuming there are 20 cigarettes in a  
4 pack, one pack per day for a year is actually 7,300  
5 packs -- 73 [sic] cigarettes per year; correct?

6 MR. RUZICKA:

7 Objection. Form and foundation.

8 A I'm gonna -- I'm gonna agree with you. I  
9 -- I could do -- I could do the math, but, I mean,  
10 you've done it, and I just agree with it.

11 MR. ANWAR:

12 Q And it's simply 20 times 365; correct?

13 A Yes, sir. Yes, sir. Agree.

14 Q And, then, for 50 years, it would  
15 essentially be 20 times 365 times 50; correct?

16 A Yes, sir.

17 MR. RUZICKA:

18 Objection. Form and foundation.

19 MR. ANWAR:

20 Q And I did the math, and that comes out to  
21 365,000 cigarettes during that 50-year time period.  
22 Do you have any reason to disagree with that?

23 MR. RUZICKA:

24 Objection. Form and foundation.

25 A No, sir.

1 MR. ANWAR:

2 Q Would you agree that the age of onset of  
3 smoking is highly associated with bladder cancer  
4 risk?

5 MR. RUZICKA:

6 Objection. Form.

7 A I think from the standpoint, probably age  
8 itself and the -- would probably add to his  
9 exposure time. And if he started earlier, then  
10 probably you're gonna -- your cumulative time is  
11 probably gonna be longer.

12 I'm not sure if age of itself has a --  
13 just a direct effect on bladder cancer. But I  
14 think that literature is just -- it's assumed that  
15 it is that your -- you typically would have a  
16 longer exposure time.

17 MR. ANWAR:

18 Q And Mr. Raymond reported beginning  
19 smoking around the age of 18; correct?

20 A Yes, sir.

21 Q In your report, you also state that  
22 Mr. Raymond experienced passive exposure to tobacco  
23 smoke. Correct?

24 A Yes, sir.

25 Q Are you -- are you referring to

1 secondhand smoke when you say "passive exposure"?

2 A Yes, sir. I think his wife may have  
3 smoked for a while, if I remember correctly.

4 Q And his wife, Mrs. Raymond, smoked one  
5 pack per day for 45 years; right?

6 A I think that's what's stated in --  
7 I have to refer to the -- back to the  
8 deposition. But I know -- I remember her being a  
9 smoker for a while, for some time.

10 Q Okay. And Mr. and Mrs. Raymond smoked  
11 together in their home; right?

12 A That's what I understand from the  
13 deposition.

14 Q And Mr. Raymond smoked in his car; right?

15 MR. RUZICKA:

16 Objection. Form.

17 A I -- I would have to refer back to the  
18 deposition.

19 MR. ANWAR:

20 Q Would you -- you agree that secondhand  
21 smoke exposure under these circumstances is also a  
22 risk factor for Mr. Raymond's bladder cancer?

23 MR. RUZICKA:

24 Objection. Form and foundation.

25 A I think I've read a few articles that may

1 have some small suggestion of that. But I'm -- I  
2 would agree.

3 MR. ANWAR:

4 Q Now, Mr. and Mrs. Raymond quit smoking in  
5 2013; right?

6 A Correct.

7 Q And Mr. Raymond was diagnosed with  
8 bladder cancer in 2021; right?

9 A Correct.

10 Q And, so, Mr. Raymond was diagnosed --  
11 diagnosed with bladder cancer about eight years  
12 after he quit smoking?

13 A Correct.

14 Q In your report, you state that there --  
15 "there's evidence to support that smoking cessation  
16 decreases the risk of development of bladder  
17 cancer, and the risk decreases with longer periods  
18 of abstinence from smoking."

19 Is that right?

20 A That is correct.

21 Q And I think, in your report, I think you  
22 state that "the risk of bladder cancer is shown to  
23 decrease -- decrease by 30 percent after one to  
24 four years of cessation."

25 Did I -- do you recall that?

1 A Yes.

2 Q And in your report you cite a study by  
3 the author Brennan, et al., in the year 2000. Do  
4 you recall that?

5 A I do.

6 Q I'd like to mark that as Exhibit 5.

7 (DEPOSITION EXHIBIT NUMBER 5  
8 WAS MARKED FOR IDENTIFICATION.)

9 MR. ANWAR:

10 Q And I'll represent to you, actually, this  
11 is the abstract for the study, not the full study.  
12 Feel free to take a look at this.

13 But does this look like the abstract for  
14 the study that you cited, Dr. Bivins?

15 A I believe so.

16 Q Okay. And in the beginning of the  
17 abstract, it says the primary risk factor for  
18 bladder cancer is cigarette smoking; right?

19 A Yes.

20 Q Would you, having -- now, reviewing this  
21 article, would you agree with that?

22 MR. RUZICKA:

23 Objection. Form.

24 A Says "immediate decrease in the risk of  
25 bladder cancer was observed for those who gave up

1 smoking. This decrease was observed over 30  
2 percent after one to four years and was over 60  
3 percent after 25."

4 Yes, sir.

5 MR. ANWAR:

6 Q Well, and the portion --

7 So you're -- you were reading this  
8 portion of the --

9 Sorry. It keeps doing that.

10 But this sentence right here; correct?

11 A Yes, sir.

12 Q Okay. And my question to you was: This  
13 first sentence in the abstract is "the primary risk  
14 factor for bladder cancer is cigarette smoking."

15 Given that you cited this, this article,  
16 would you -- would you agree with that?

17 MR. RUZICKA:

18 Objection. Form.

19 A I think this is looking at -- this  
20 article is just looking at cigarette smoking and  
21 bladder cancer. So I don't --

22 And, again, I'm not saying -- I'm not  
23 sure --

24 I don't agree with the fact that they are  
25 saying that this is the only -- the primary risk

1 factor for bladder cancer. I think that that, in  
2 my interpretation, this is the primary risk in this  
3 study.

4 So this -- this study was powered for  
5 smoking and bladder cancer. And, so, if it -- if  
6 this -- if this study was looking at all factors  
7 and they made that statement, then I probably would  
8 have an issue because it's -- it -- that study  
9 would be powered looking at risk factors.

10 This study is powered for cigarette  
11 smoking and bladder cancer. So I think that that's  
12 what they're just looking at as a primary factor is  
13 cigarette smoking and bladder cancer.

14 MR. ANWAR:

15 Q If we go a little further down in the  
16 abstract, it says "there was a" -- here, "there was  
17 a linear increasing risk of bladder cancer with  
18 increasing duration of smoking ranging from an odds  
19 ratio of 1.96 after 20 years of smoking to 5.57  
20 after 60 years smoking."

21 Did I read that correctly?

22 A Yes, sir.

23 Q Okay. Do you -- do you agree with that  
24 statement?

25 A And, again, the -- as I interpret that

1 statement, it's just saying the longer you smoke,  
2 the higher the risk of -- of bladder cancer. And I  
3 think they were saying there's a linear risk in  
4 that statement, that, you know, the odds ratio was  
5 1.96 after 20 years. Right? And then even 5 --

6 Yeah, I agree with that statement.

7 Q What is your understanding of an odds  
8 ratio?

9 A I think that if you -- it -- and it --

10 Well, let me -- so, just to be clear, I'm  
11 not a statistician, so I want to be clear on that.

12 My understanding is if you are -- you  
13 know, their interpretation from a statistical --

14 And, again, I would --

15 There's a lot that goes into --

16 I don't think you can take --

17 Let me go back. I don't think you can  
18 take an odds ratio in and of itself without looking  
19 at, you know, the confidence intervals and seeing  
20 how a study is powered.

21 So if we're just looking at it on paper  
22 and we're just sort of trying to make some  
23 conclusion with the odds ratio by itself, I don't  
24 know if you can righteously do that. I want to --  
25 I want to state that.

1           So I don't know how powerful that is when  
2 you're asking me about just an odds ratio in and of  
3 itself. But -- but it compares to cohorts is what  
4 it does.

5           Q           Would you -- would you agree that it -- a  
6 1.96 odds ratio after 20 years of smoking -- the  
7 confidence intervals are -- are listed there, 1.48  
8 to 2.61 -- would -- a 1.96 odds ratio after 20 year  
9 of smoking is a statistically significant increased  
10 risk of developing bladder cancer after 20 years of  
11 smoking?

12           MR. RUZICKA:

13                    Objection. Form and foundation.

14           A           I -- again, I'm not a statistician. And  
15 just looking at studies, I mean, just looking at  
16 that, I would probably agree.

17           MR. ANWAR:

18           Q           And a 5.57 odds ratio after smoking for  
19 60 years, that's also a statistically significant  
20 increase, like a very significant increased risk of  
21 developing bladder cancer after 60 years of  
22 smoking; correct?

23           MR. RUZICKA:

24                    Objection. Form and foundation.

25           A           Yeah. Again, I'm gonna say that we're

1 pulling, you know, without really digging into the  
2 actual study itself, you know, I think it's -- you  
3 know, that's a -- you know, we -- we -- we -- we  
4 are pulling something out of --

5 And, again, I need to understand their  
6 confidence intervals. And I would just have to go  
7 back and review confidence intervals to see what --  
8 how that's comparing, you know. So --

9 But -- but it seems that there -- we also  
10 know in the literature that smoking and the longer  
11 you smoke, it does increase your risk. So I don't  
12 have a reason to think that that's not right,  
13 that's not -- that's incorrect.

14 MR. ANWAR:

15 Q And the sentence a little further down  
16 says, "however, even after 25 years of cessation of  
17 smoking," is what I believe it's referring to, but,  
18 so, "however, even after 25 years, the decrease in  
19 risk did not reach the level of never smokers."

20 Did I read that correctly?

21 MR. RUZICKA:

22 Objection. Form.

23 A I think that list --

24 Yes. And I agree. I think that the  
25 patients, once they've smoked, they will always

1 have a risk. I don't disagree with that statement.

2 MR. ANWAR:

3 Q Okay. And that -- that's what I was  
4 gonna ask you. I think you state it in your report  
5 as well. Cessation of smoking doesn't eliminate  
6 the risk of bladder cancer entirely; correct?

7 A That's correct.

8 Q Now, Mr. Raymond's brother passed away  
9 from lung cancer; right?

10 A I believe that's correct. Yes, sir.  
11 Yes, sir. From the deposition, that's correct.  
12 Yeah.

13 Q And Mr. Raymond's brother was a smoker  
14 for 60 years; right?

15 MR. RUZICKA:

16 Objection.

17 A I I'd have to review the deposition. I  
18 can't remember.

19 MR. ANWAR:

20 Q If that's what it --

21 A I don't have a reason to disagree with  
22 it.

23 Q If that's what it says in the deposition,  
24 you don't have any reason to disagree?

25 A No, sir.

1 Q Now, you -- you also identify chemical  
2 exposure as a risk factor for developing bladder  
3 cancer; right?

4 A Yes, sir.

5 Q What chemicals or occupational exposures  
6 are commonly considered by urol- -- urologists to  
7 be considered -- or to be risk factors for bladder  
8 cancer?

9 MR. RUZICKA:

10 Objection. Form.

11 A Well, I think, as far as occupational,  
12 you know, I do think silica dust is one.

13 I think that it's known that arsenic  
14 exposure.

15 I think -- you know, and petroleum  
16 workers with benzene.

17 I think TCE and PCE are chemicals.

18 I think there's, in the paint industry,  
19 there --

20 And, again, I have to look through those  
21 again. But when I'm assessing risk, I -- I want to  
22 know are there certain dyes, aniline dyes, that are  
23 increased risk of urothelial carcinomas.

24 Then you have some of the herbicides. We  
25 talked about those different chemicals that I can't

1 pronounce right now. So those are the main ones  
2 that we think about.

3 Q Sure.

4 Now, earlier, you agreed -- and I think  
5 you're aware that Mr. Raymond worked at a silicone  
6 plant -- silicone plant for 38 years. Correct?

7 A Correct.

8 Q And you agree that he was exposed to some  
9 degree of copper or silicone dust; right?

10 A Agree.

11 MR. RUZICKA:

12 Objection. Form.

13 MR. ANWAR:

14 Q You agree?

15 A Agree. Well, assumptions. He worked  
16 there, and -- and I assume he was exposed to it.  
17 But, again, to be clear, I think that exposure  
18 means he was in the environment, but he was wearing  
19 protective equipment.

20 Q And, as I understood your report and your  
21 testimony today, you ruled -- you ruled out  
22 silicone dust as a cause for Mr. Raymond's bladder  
23 cancer, silicone dust exposure, as a cause for  
24 Mr. Raymond's bladder cancer for two reasons,  
25 primarily; because he wore protective equipment and

1 then because for 30 of the -- the latter 30 of the  
2 38 years, he mostly worked in an office  
3 environment. Is that right?

4 A Correct.

5 Q Okay. So for that first eight years, he  
6 -- he was an operator working directly with silica  
7 equipment; correct?

8 A According to his deposition, yes.

9 Q And you -- you -- you note in your report  
10 that he was -- he wore protective equipment.  
11 Correct?

12 A According to his deposition, yes, sir.

13 Q And that protective equipment may have  
14 included a respirator. Correct?

15 A If I remember correctly, it was eye  
16 goggles or protect- -- eye-protective wear and N95  
17 mask.

18 Q Would wearing a respirator --

19 Well, strike that.

20 Wearing a respirator or N95 mask doesn't  
21 prevent breathing in silica dust 100 percent of the  
22 time; correct?

23 MR. RUZICKA:

24 Objection. Form and foundation.

25 A I'm not -- so I'm gonna probably have

1 you --

2           There's probably an expert that could  
3 really, really answer that better than I can as  
4 a --

5           You know, I just -- if it's -- if it's  
6 deemed a protective equipment against a certain  
7 agent, I've just got to assume that it is going to  
8 do its job, and I don't -- I can't really comment  
9 on whether it protects it a hundred or 95. I just  
10 assume it does. I just assume there are some laws  
11 that would -- would mandate that or not have  
12 them -- or OSHA or somebody would. But I can't  
13 comment on that.

14 MR. ANWAR:

15 Q           So in ruling out exposure to silica dust  
16 as a cause of Mr. Raymond's bladder cancer, you  
17 assumed that his protective equipment protected him  
18 100 percent of the time -- 100 percent of the time  
19 to 100 percent degree of the exposure; correct?

20 MR. RUZICKA:

21           Objection. Form.

22 A           You know, most -- multiple things with  
23 that. Number one, 100 percent, I never use it in  
24 anything, number one. That's absolutes, and I just  
25 don't deal in absolutes. That's number one.

1           But, number 2, moreover, as it states,  
2 personal protective equipment, I assume that's what  
3 it does is personally protect. And, so, I've just  
4 got to assume that there's got to be some  
5 regulations that -- that -- that sort of kind of  
6 govern that, and I just can't --

7           I -- I assume that it is doing what it is  
8 supposed to be doing, which is protecting. So,  
9 therefore, yes, I rule that out because of that.

10 Q           Do you know what type of N95 mask or  
11 respirator Mr. Raymond wore?

12 A           I do not.

13 Q           Do you know what percentage of the time  
14 Mr. Raymond wore an N95 mask or a respirator?

15 A           I -- I mean, I don't.

16 Q           Do you know if Mr. Raymond ever took off  
17 his respirator or N95 mask?

18 A           I don't. I assume he -- I don't.

19 Q           Do you know what the levels of silica  
20 dust in that -- the GE plant, the silicone plant,  
21 were that Mr. Raymond worked at?

22 A           I do not know that.

23 Q           And for the first eight years that he was  
24 there, he was working directly with the silica  
25 equipment, not in an office; correct?

1 A According to my understanding from his  
2 deposition.

3 Q Now, in addition to the protective  
4 equipment, you understand -- and we talked about it  
5 -- that you ruled out exposure to silica as a cause  
6 of Mr. Raymond's bladder cancer because the latter  
7 30 years of his 38 years at that plant, he mostly  
8 worked in an office setting; correct?

9 A Correct.

10 Q Well, based on Mr. Raymond's testimony,  
11 even in that office setting as a control operator,  
12 he didn't stay in the office 100 percent of the  
13 time; correct?

14 MR. RUZICKA:

15 Objection.

16 A Well, I can't remember that. I don't --  
17 let me back up. That, I don't -- I don't remember.  
18 I would assume no one stays in an office, you know,  
19 all the time, in any office. But I -- I -- I don't  
20 have a comment on --

21 I mean, I can't make any -- agree or  
22 disagree with that in any fashion. I don't know.

23 MR. ANWAR:

24 Q He -- he did sometimes have to work  
25 directly with silica equipment during that 30-year

1 period; right?

2 MR. RUZICKA:

3 Objection. Form.

4 A I don't know. I would assume if he did,  
5 he -- he -- if he -- if he is, you know, an  
6 experienced person at this point, he's been wearing  
7 protective equipment when he was working there, I  
8 just assume he has to be --

9 You know, so I don't -- I don't -- I  
10 don't know. But if -- if he did, I would assume he  
11 would have been wearing protective equipment when  
12 he was in that environment.

13 Q Given that Mr. Raymond worked directly  
14 with silica equipment his first eight years at that  
15 plant, given that I think you -- you agreed earlier  
16 that nothing is 100 percent, even with protective  
17 equipment, and given that he still worked outside  
18 of the office within the plant from time to time  
19 during the 30-year period he worked as a control  
20 operator, exposure to -- to silica is a risk factor  
21 for Mr. Raymond that can't be ruled out; right?

22 MR. RUZICKA:

23 Objection. Form.

24 A I mean, so, first of all, again, I -- I  
25 don't -- I don't -- I don't -- there is nothing

1 that said he went into the plant where there -- you  
2 know, there's nothing there. And there's nothing  
3 there that says he went -- if he did go in, he --  
4 he -- he did not have his personal protective  
5 equipment on.

6 And, third, I -- if I'm making  
7 assumptions, if he did do that and he's worked  
8 eight years where he wore it, I would assume he  
9 would have worn it and it would have been the same  
10 for me. So that doesn't change my position on --  
11 on this risk factor for him.

12 Q I'm gonna -- let's just take a quick look  
13 at his deposition. I'm gonna mark this as Exhibit  
14 6.

15 (DEPOSITION EXHIBIT NUMBER 6  
16 WAS MARKED FOR IDENTIFICATION.)

17 MR. ANWAR:

18 Q At the bottom, so turning to page 153, at  
19 the bottom there, he's asked a question "did you  
20 have to work with -- work on the silicon  
21 equipment?"

22 And he responds, "Not much. Being the  
23 control operator, I got a little bit of a break.  
24 And you had maintenance people do most of the --  
25 the bull work and stuff like that."

1 Does that response suggest to you that  
2 100 percent of the time he -- he was excused from  
3 working on silicon equipment?

4 MR. RUZICKA:

5 Objection. Form and foundation.

6 A I don't know what that means. I can't  
7 comment on what that means.

8 MR. ANWAR:

9 Q So when he was working mostly in an  
10 office setting as a control operator, you don't  
11 know the degree to which he -- he continued to work  
12 within the plant on silicon equipment; correct?

13 A I can't say. I mean, again, I don't have  
14 any records or he didn't state, so I have no  
15 comment on it, really. I mean, I can't make any --  
16 any comment on it.

17 Q Now, Mr. Raymond worked at that plant for  
18 38 years; correct?

19 A Yes, sir.

20 Q And we'll talk more about it. But  
21 Mr. Raymond, in terms of his time at Camp Lejeune,  
22 he spent two years at Camp Lejeune; correct?

23 A Correct.

24 Q Are you aware that the -- the specific  
25 silicone plant that Mr. Raymond worked at in

1 Waterford, New York, is the subject of litigation  
2 related to toxic exposure claims?

3 A I am not aware of that.

4 Q Would that -- does that -- would  
5 knowledge of the fact that there's litigation  
6 related to his silicone plant toxic exposure  
7 litigation, would that change your differential in  
8 ruling out his exposure to silica as a cause of his  
9 bladder cancer?

10 MR. RUZICKA:

11 Objection. Form and foundation.

12 A No, it doesn't change, because, you know,  
13 as I stated earlier, number one, I -- I -- I  
14 recognize that it is a risk factor. However, it  
15 doesn't change in this situation because it's not a  
16 risk factor for him because he wore, you know,  
17 personal protective equipment. So there's -- the  
18 fact that there's litigation on that doesn't -- I  
19 mean, it doesn't change his risk factor profile.

20 MR. ANWAR:

21 Q In your assumption that he was protected  
22 from exposure to the silica based on him wearing  
23 personal protective gear, you don't have any  
24 information about the effectiveness of the personal  
25 protective gear that he was wearing; correct?

1 A I -- I don't. I'm not a expert on  
2 personal protective equipment.

3 Q Did you, in forming your opinion, did you  
4 research that at all?

5 A I did not.

6 Q How come?

7 A I just took the assumption that if he was  
8 wearing it, I took the assumption that, you know,  
9 he -- it was personal protective equipment. He was  
10 wearing a respirator, so I just took that  
11 assumption that he was -- he was protected with his  
12 personal protective equipment, and I didn't --

13 I'm not even sure --

14 And maybe it listed what it was. I can't  
15 remember if it was even listed, the type. I think  
16 it was N95, but maybe --

17 But I -- but I did not do the research on  
18 that.

19 Q Have you ever worn a N95 mask?

20 A I have.

21 Q In what context have you worn an N95  
22 mask?

23 A Well, I think we wore certain types of  
24 those masks during COVID. But some military --

25 I was in the, previously, military, and I

1 was in a ordinance platoon. And, so --

2 And I can't remember all the details.  
3 That's 30, 25, 30 years ago. But I do remember  
4 wearing respirators during that time.

5 Q And based on your experience wearing a  
6 respirator, N95 mask, was it your experience that  
7 the mask or the respirator was effective 100  
8 percent of the time?

9 MR. RUZICKA:

10 Objection. Form and foundation.

11 A I can't remember. I mean, I'm not trying  
12 to be, you know -- you know, antagonistic with  
13 this, but I -- I can't remember 25 years ago.

14 And, you know, during COVID, when I was  
15 wearing those N95s, I mean, that's hard to say  
16 because we wore them, we didn't wear them. And,  
17 so, I just assumed we were protected with them.  
18 And I just assumed if I got COVID -- and I did -- I  
19 just assumed that I got COVID, you know, when I  
20 didn't have a mask on.

21 So I just assumed that it was doing what  
22 it was supposed to do. That's -- those are the  
23 only comments I've got. I had confidence in them,  
24 if that's the question.

25 Q Do you wear protective equipment when

1 you're performing surgery?

2 A I do.

3 Q What -- what type of protective equipment  
4 do you wear when you're performing surgery?

5 A Masks. It's not an N95 mask, obviously.  
6 It's not N95. It's just a mask, and I can't tell  
7 you the kind. Eyewear, a gown, a surgical gown.  
8 Excuse me. Surgical gloves.

9 Q In your experience wearing protective  
10 equipment as a surgeon, a urologic oncologist, has  
11 that protective equipment that you've worn been  
12 effective 100 percent of the time?

13 MR. RUZICKA:

14 Object. Form and foundation.

15 A I've had a needle stick, but that's a  
16 different ballgame. I mean, I think -- I think  
17 having a needle stick, you know, you can stick  
18 through protective equipment, but it's not powered  
19 to protect against a needle.

20 And, so, is it powered to protect against  
21 spills? Is it powered to protect against, know,  
22 aerosolized germs? Yes, then it has been. But the  
23 stuff that it's not powered against, like a needle  
24 stick, then I've been stuck with a needle.

25 MR. ANWAR:

1 Q And I think earlier you mentioned during  
2 COVID you would wear an N95 mask.

3 A Yes.

4 Q Correct?

5 A Correct.

6 Q And at some point, you still got COVID;  
7 correct?

8 MR. RUZICKA:

9 Objection. Form.

10 A Correct.

11 MR. ANWAR:

12 Q Now, as I understand your report, it's  
13 your opinion that it is as like- -- at least as  
14 likely as not that exposure to TCE from  
15 contaminated water at Camp Lejeune is hazardous to  
16 human health and could cause the development of  
17 bladder cancer. Is that right?

18 A Correct.

19 Q Okay. And it's also your opinion that it  
20 is at least as likely as not that exposure to  
21 benzene from contaminated water at Camp Lejeune is  
22 hazardous to human health and could cause the  
23 development of bladder cancer. Correct?

24 A Correct.

25 Q Now, I think earlier you agreed you're

1 not a toxicologist or an epidemiologist; right?

2 A Correct.

3 Q You're relying on the reports of the  
4 plaintiff's general causation experts, Dr. Hatten,  
5 Plunkett, Gilbert, Culp and Bird; correct?

6 A Correct.

7 Q Did you review the reports of the United  
8 States general causation experts, Dr. -- Drs.  
9 Goodman, Shields, or Lipscomb?

10 A I did not.

11 Q Why not?

12 MR. RUZICKA:

13 Form.

14 A I didn't have access to them. I -- they  
15 were never presented to me.

16 MR. ANWAR:

17 Q In reaching these opinions about  
18 exposure, at least as likely as not that exposure  
19 to TCE and benzene from water at Camp Lejeune is  
20 hazardous to human health and could cause the  
21 development of bladder cancer, did you perform your  
22 own review of the literature?

23 A I did.

24 Q What did your literature search consist  
25 of?

1 A You know, PubMed, Google searches.

2 PubMed -- primarily PubMed and Google searches.

3 Q What were the search terms that you used  
4 on PubMed?

5 A Risk factors, bladder cancer, and then,  
6 down that list of different risk factors, TCE,  
7 benzene, bladder cancer, then EPA, but along with  
8 Camp Lejeune, ATSRD [sic] Camp Lejeune. I would  
9 take some of the citations on -- on some of the  
10 causation reports and I would just kind of read  
11 those articles myself to get an understanding.  
12 Also, cigarette smoking and bladder cancer.

13 Let's see.

14 And other -- other -- I think I just said  
15 other risk factors for bladder cancer. That's sort  
16 of the kind of things I looked at.

17 Q What about your search terms on Google?  
18 What -- what search terms did you use?

19 A Same -- same ones.

20 Q Would you agree that a search should be  
21 crafted to produce both positive and negative  
22 results?

23 A Can you restate that again?

24 Q Sure.

25 Would you -- would you agree, when

1 you're -- you're searching the literature to  
2 determine whether exposure to a substance is a  
3 cause for bladder cancer or risk factor for -- for  
4 bladder cancer, would you agree that the search  
5 should be crafted in a way that results in both  
6 positive and negative, favorable, unfavorable,  
7 results?

8 A Yeah. Okay. I understand the question.

9 Yeah, I -- I think that when I do  
10 searches, I just want the results and the evidence.  
11 And I'm certainly not looking for positive or  
12 negative. I just want, you know, what is --  
13 what -- what does the evidence show or what does  
14 the studies show or, you know, what -- you know, so  
15 what do the results show? And if they're positive  
16 or they're negative, then -- then that's  
17 information.

18 And, again, I'm not sure what positive  
19 and negative means other than just what -- what  
20 is -- what is -- what are the results.

21 Q You want to -- you want to see the  
22 results that suggest that there is an association,  
23 and you want to see the results that suggest that  
24 there isn't an association. Correct?

25 A What you're getting at, I would state,

1 are the results. Yes, sir.

2 Q Otherwise, you risk forming an unbalanced  
3 opinion. Correct?

4 MR. RUZICKA:

5 Objection. Form.

6 A Well, I think that's what I'm saying. I  
7 -- I -- whenever -- wherever the results take me is  
8 where they take me.

9 And, again, I think you and I can agree.  
10 I definitely want to be able to -- I want to be  
11 able to not have --

12 Or I want to -- excuse me. I want to be  
13 able to have an unbiased opinion and -- or  
14 unbalanced opinion, I guess. I just want to be  
15 able to take the results that are given to -- in  
16 order that I may form an opinion.

17 MR. ANWAR:

18 Q Did anyone provide you with any of the  
19 studies for your report?

20 A What was provided to me were all of the  
21 expert reports, and I went and did, you know,  
22 citation searches from -- I looked at their  
23 citations and looked up the studies. And, so --  
24 and I looked up -- did the research. And I did my  
25 own research by putting in -- by putting in, you

1 know, those key terms I stated earlier. But, for  
2 the most part, on all our -- all of the citations  
3 and references, I looked those studies up.

4 Q How did you decide which studies to  
5 include in your report and which studies to exclude  
6 in your report?

7 A Um, how did I decide which studies to...

8 I -- I tried to stick with, you know --  
9 you know, as I -- as I -- as I looked at my search,  
10 if I remember correctly, I wanted to see the big  
11 agencies first, and I tried to find meta-analysis  
12 first. And then I went through to cohort studies.

13 So I relied on, you know, what -- when --  
14 you know, when -- I relied on what was being said  
15 in the EPA, the IARC, the ATSRD [sic], and then  
16 from there, I would read, and then there would be  
17 things that I want further, you know, sort of  
18 understanding of, and then I would go and look at  
19 citations either that were addressed maybe in the  
20 causation reports or I would look them up myself,  
21 and then I would get a deeper dive into certain  
22 areas, and then I would use those as citations.

23 Q When you performed your search on Google  
24 and PubMed, do you recall the number of results  
25 that you encountered?

1 A I can't remember. It was a lot. I mean,  
2 you know, I can't remember.

3 When you -- when you -- let me -- let me  
4 ask you what you're asking first. When you say  
5 "the number," what -- what do you mean by "the  
6 number"?

7 Q I guess when you went to search out  
8 literature to determine whether exposure to water  
9 at Camp Lejeune is a risk factor for -- for bladder  
10 cancer and you -- you describe sort of the search  
11 terms that you used, what were the number of the  
12 results that -- that appeared?

13 A Like the number of studies that -- maybe  
14 that appeared?

15 Q Correct. Studies, publications,  
16 analyses.

17 A I can't remember. I mean, it was, you  
18 know -- I can't remember the exact number.

19 Q Would it have been in the range of the  
20 hundreds?

21 A I don't think so. I don't think it was  
22 that number.

23 Q Do you think it was more than a hundred,  
24 one hundred?

25 A No, I don't think it was that many.

1 Q Did you review each and every study?

2 A Um, you know, I think that was probably  
3 not. No, sir. Impossible. Impossible. No, sir,  
4 I did not.

5 Q And was that solely because there --

6 A There's a lot of articles. I probably  
7 focused more so on -- on bladder cancer and, you  
8 know, the solvents that -- that were, you know,  
9 involved here. So that's one thing. You know,  
10 I -- I stuck to, you know, benzene, TCE.

11 And TCE and PCE had such a lot of  
12 correlations, I read up on the PCEs also, but I  
13 prob- -- I did not focus on, you know, all articles  
14 as it pertains to water contamination at -- at  
15 Camp Lejeune. So I focused on the bladder cancer  
16 ones.

17 Q A number of the studies that are  
18 identified in your materials considered list are  
19 occupational studies; right?

20 A I believe so. I'll have to look at them.  
21 I believe so.

22 Q And you'd agree that occupational  
23 exposure levels would be magnitudes higher than the  
24 chemical levels present in Camp Lejeune water;  
25 right?

1 MR. RUZICKA:

2 Objection. Form and foundation.

3 A Your -- your -- your question is do I  
4 agree with that there are probably more  
5 occupational studies than environmental studies  
6 with the chemicals at Camp Lejeune?

7 MR. ANWAR:

8 Q No. My -- my question is that you would  
9 agree, generally, occupational exposure involves  
10 far greater magnitudes of exposure than -- than the  
11 water at Camp Lejeune.

12 MR. RUZICKA:

13 Objection. Form and foundation.

14 A We're not -- okay. So --

15 Yeah. We're not talking about studies  
16 anymore. You -- we're talking about exposure now.

17 MR. ANWAR:

18 Q Well, I am talking about the studies  
19 still. I think the start of the questioning was  
20 you cited a number of studies that involve  
21 occupational exposures; correct?

22 A Yeah. I think I have some occupational  
23 exposure studies in there.

24 And then your question to me is would  
25 occupational -- would occupational studies outweigh

1 exposure studies? I'm just trying to make sure I  
2 understand the question.

3 Q So you've cited occupational studies  
4 as -- in your materials considered list and in your  
5 report, and occupational studies consider levels of  
6 exposure that are far greater than the levels of  
7 exposure in the water at Camp Lejeune; correct?

8 MR. RUZICKA:

9 Objection. Form and foundation.

10 A I'm not sure.

11 MR. ANWAR:

12 Q Do you consider Camp Lejeune water as a  
13 risk factor when evaluating your patients?

14 A Probably --

15 You know, I don't see Camp Lejeune  
16 patients, or I have not seen a Camp Lejeune patient  
17 that I know of with bladder cancer in my practice.

18 Q I'm gonna show you what I'm marking as  
19 Exhibit 7.

20 (DEPOSITION EXHIBIT NUMBER 7  
21 WAS MARKED FOR IDENTIFICATION.)

22 MR. RUZICKA:

23 Everyone doing good? Anyone need a  
24 break?

25 A I'm okay to --

1 THE COURT REPORTER:

2 A bathroom break soon would be  
3 appreciated.

4 MR. ANWAR:

5 Okay. Why don't -- why don't we take a  
6 break now, then? I think we're in a good spot.

7 MR. RUZICKA:

8 Just like 5, 10 minutes?

9 MR. ANWAR:

10 Sure.

11 VIDEOGRAPHER:

12 We're going off the record. The time is  
13 11:13.

14 (OFF THE RECORD.)

15 VIDEOGRAPHER:

16 We are back on the record. The time is  
17 11:24.

18 MR. ANWAR:

19 Q We are back on the record from a short  
20 break, Dr. Bivins. Are you okay to continue?

21 A Oh, yeah.

22 Q Did you speak with your -- your -- anyone  
23 during the break?

24 A No, sir.

25 Q I wanted to backtrack -- backtrack really

1 quick. Earlier you had mentioned regulations in  
2 the context of the conversation we were having  
3 about Mr. Raymond wearing protective equipment at  
4 his -- at his place of employment, the silicone  
5 factory. Do you -- do you recall that?

6 A I think I said -- I think what I said was  
7 I assume there are. But -- I think that's what I  
8 said.

9 Q Do you know for a fact whether any  
10 regulations do or do not exist?

11 A No. I mean, I just -- I -- I mean, I  
12 don't.

13 Q I'm gonna show you what I'm marking as  
14 Exhibit 7. It's still waiting for...

15 I'll try to --

16 Do you see anything, Dr. Bivins? Is it  
17 still loading?

18 A Still loading.

19 Q Okay.

20 A You need to get Verizon, man.

21 Q Connected to Wi-Fi.

22 A You in DC?

23 Q Yeah.

24 Do you -- are you able to click on the  
25 document that I dropped in the chat?

1 A Hold on. Just let me see.

2 And which number is that? Seven?

3 Q Yeah.

4 A All right. Yeah. Let me see.

5 Q Let's just do it that way.

6 A Why is that taking me to my --

7 Q It is your -- so it's --

8 Exhibit 7 was produced to us. I believe  
9 it is your patient intake form.

10 A It's causing me to save it. Hold on a  
11 minute. It's not loading up either. Let me see if  
12 I can --

13 I think it's asking me to download it.  
14 Let me just see if I can --

15 MR. RUZICKA:

16 Yeah. I think you'll have to download it  
17 and save it so you can view it on your PDF.

18 THE WITNESS:

19 All right. Just give me a second. Yeah,  
20 I can do that. That's going to documents, if you  
21 don't mind.

22 All right. Let me just pull it up now.  
23 Documents. There it is.

24 All right. Here we go.

25 Okay. Looks like a form that patients

1 fill out for my office here.

2 MR. ANWAR:

3 Q Yeah. I was gonna say, do you recognize  
4 Exhibit 7?

5 A I do.

6 Q What is it?

7 A Looks like it's an intake form. And the  
8 first one just gives a history that patients will  
9 fill out when they get -- when they get here.  
10 That's page -- what -- let me see -- 1 and 2.

11 And then page 3 looks like it's a Berlin  
12 score, which is, you know, for men's health  
13 assess- -- or men's or women's health to assess  
14 sleep apnea.

15 Then we have a 4 is a benign prostate  
16 hyperplasia sort of kind of questionnaire to assess  
17 their voiding symptoms, urinating symptoms.

18 And then the last one --

19 Is that right?

20 It's a -- there's a demographic sort of  
21 intake form.

22 And the last one is a sexual health  
23 intake form. So just various intake forms on  
24 various diseases for a general urologist.

25 Q I just wanted to ask you a few questions

1 about that first page of the intake form.

2 A Yeah. Sure.

3 Q That's your practice, Urology Centers of  
4 Alabama; right?

5 A Yeah. That's correct.

6 Q Okay. And on the first page, there are  
7 places for the patient to fill out their name, date  
8 of birth, list of medications. Correct?

9 A Yes, sir.

10 Q Okay. Then you also ask a few questions  
11 about medical history, surgical history, family  
12 history, social history. Correct?

13 A Yes, sir.

14 Q Okay. And for family history, you -- you  
15 do ask about family -- family history and bladder  
16 cancer; correct?

17 A That is correct.

18 Q And, then, under social history, you do  
19 ask about tobacco; correct?

20 A We should. Let me look here.

21 Yes. Yes, yes.

22 Q Here, you don't ask about Camp Lejeune  
23 water or any of the chemicals at issue. Correct?

24 A That's correct.

25 Q Okay. You can set that aside. Those

1 were the questions I had about that.

2 A Okay. Okay.

3 Q Now, earlier I think you agreed, but,  
4 just to be clear, you're not an expert in modeling  
5 chemical exposures in individuals; right?

6 A Correct.

7 Q Okay. And you're not an expert in  
8 assessing the individual risk of chemical  
9 exposures; correct?

10 A Correct.

11 Q You're relying on the plaintiff's  
12 experts, Dr. Reynolds, Dr. Bird, and Dr. Hatten; is  
13 that right?

14 A Correct.

15 Q Did you review the reports of DOJ's  
16 experts, Dr. LaKind and Dr. Bailey?

17 A I did not.

18 Q Why not?

19 A They were not presented to me to -- to  
20 review.

21 Q In your report, you note that  
22 Dr. Reynolds provided a report that estimated the  
23 cumulative ingestion amounts for Mr. Raymond during  
24 his time at Camp Lejeune. Do you recall that?

25 A Yes.

1 Q And Dr. Reynolds used ATSDR's water  
2 models to estimate daily exposure levels in  
3 plaintiffs; right?

4 A Yes.

5 Q Did you review ATSDR's water modeling  
6 reports yourself?

7 A Um, no, sir, I don't think I -- no, sir.

8 Q Were you aware that ATSDR's water  
9 modeling reports state that the available data are  
10 not specific enough to accurately estimate daily  
11 levels of contaminants at Camp Lejeune?

12 MR. RUZICKA:

13 Objection. Form. Foundation.

14 A I'm not aware of that.

15 MR. ANWAR:

16 Q Were you aware that ATSDR's water  
17 modeling reports state that the models can't be  
18 used to determine whether an individual has  
19 suffered health effects?

20 MR. RUZICKA:

21 Objection. Form and foundation.

22 A Not aware of that.

23 MR. ANWAR:

24 Q In your report you state "I've reviewed  
25 the specific causation reports of Dr. Hatten and

1 Dr. Bird regarding Mr. Raymond's level of exposure  
2 which found that Mr. Raymond was exposed to levels  
3 that could have been shown to be -- that had been  
4 shown to be hazardous to human health;  
5 specifically, bladder cancer."

6 Do you -- do you recall that?

7 A Yes.

8 Q You don't quantify the levels that have  
9 been shown to be hazardous to human health, though;  
10 correct?

11 A Correct.

12 MR. RUZICKA:

13 Objection. Form.

14 MR. ANWAR:

15 Q And you're relying on Drs. Bird and  
16 Hatten for their opinions on what that means;  
17 correct?

18 A Yes, sir. They're the experts, so I  
19 totally rely on them.

20 Q And you don't identify any threshold  
21 amount of exposure for any of the -- the chemicals  
22 at issue with respect to Camp Lejeune water where  
23 an individual is guaranteed or as likely as not to  
24 develop bladder cancer; correct?

25 MR. RUZICKA:

1                   Objection. Form.

2           A           I'm not a toxicologist. I just totally  
3           rely on their reports.

4           MR. ANWAR:

5           Q           You relied on Dr. Reynolds' calculations  
6           to quantify exposure for Mr. Raymond; correct?

7           A           Yes, sir.

8           Q           And you don't rely on exposure  
9           calculations other than those than Dr. Reynolds;  
10          correct?

11          A           Correct.

12          Q           Are you aware that Dr. Reynolds used  
13          total mass of ingested chemicals?

14          A           I -- again, you know, I'm -- I just, you  
15          know, relied on -- on her report and took her  
16          conclusions, and that's what I used to form my  
17          opinion.

18          Q           And were you aware she measured in total  
19          mass and measured in micrograms?

20          A           And, again, I -- I'm not a toxicologist.  
21          I don't know --

22                    You know, I wouldn't know what the  
23          standard of measuring and what, you know,  
24          measurement would be appropriate for, you know,  
25          that particular, you know, to -- to --

1           And I think she did ingestion amount. So  
2 I don't know what measurement would be appropriate  
3 for -- to -- to -- to --

4           You know, so I'm not sure. I just -- I  
5 just relied --

6           Her, as a toxicologist expert, I'm gonna  
7 make the assumption that that's appropriate and --  
8 yeah.

9 Q           Okay. Dr. Bivins, did you compare  
10 Mr. Raymond's exposure to volatile organic  
11 compounds -- I guess specifically TCE and PCE --  
12 excuse me -- TCE and benzene -- from sources other  
13 than Camp Lejeune water?

14 A           I guess I'm not understanding the  
15 question.

16 Q           Are you aware that cigarettes contain  
17 benzene?

18 A           I didn't know. I know that there are a  
19 lot of different toxins within it, but I -- I  
20 didn't realize that cigarettes had, actually,  
21 benzene in it. I did not know that.

22 Q           I'm gonna show you what I'm marking as  
23 Exhibit 8.

24                   (DEPOSITION EXHIBIT NUMBER 8  
25                   WAS MARKED FOR IDENTIFICATION.)

1 MR. ANWAR:

2 Q Hopefully it loads. I'll send it in the  
3 chat as well.

4 This is a journal article entitled  
5 "Exposure to Benzene and Other Volatile Compounds  
6 from Active and Passive Smoking."

7 Do you see that?

8 A I do.

9 Q Okay. Have you ever seen this journal  
10 article before?

11 A I have not. Look forward to reading it,  
12 though.

13 Q And it was published in the Archives of  
14 Environmental Health. Do you see that?

15 A Yes.

16 Q And in the -- the abstract there, I  
17 wanted to direct your attention to the middle sort  
18 of portion here. It says "it is calculated that a  
19 typical smoker inhales 2 milligrams benzene daily  
20 compared to .2 milligrams per day for the  
21 nonsmoker."

22 Did I read that correctly?

23 A Yes.

24 Q Were you aware of that?

25 A I was not aware of it.

1 Q You would agree that there are a thousand  
2 micrograms in 1 milligram; correct?

3 MR. RUZICKA:

4 Objection. Form.

5 A Yes.

6 MR. ANWAR:

7 Q So 2 -- 2 milligrams there for a typical  
8 smoker on a daily basis is 2,000 micrograms;  
9 correct?

10 A Agree.

11 Q Would you consider Mr. Raymond to be a  
12 typical smoker?

13 MR. RUZICKA:

14 Objection. Form.

15 A He smoked a pack per day, if I remember  
16 correctly, so that's a smoker. Yes, sir.

17 MR. ANWAR:

18 Q Okay. And let's jump back to your  
19 report. And on page 10 of your report, you include  
20 the exposure chart from Dr. Reynolds' expert  
21 report. Correct?

22 A Yes.

23 Q Okay. And her -- based on her  
24 calculations, Mr. Raymond's total cumulative  
25 exposure to benzene is 3,498 micrograms total from

1 Camp Lejeune water; correct?

2 A Correct.

3 Q According to the article -- article we  
4 just looked at, a typical smoker is exposed to  
5 2,000 micrograms benzene per day from smoking.  
6 Right?

7 MR. RUZICKA:

8 Objection. Form and foundation.

9 A Pointing to that article, yes.

10 MR. ANWAR:

11 Q And, so, assuming -- assuming that  
12 article is correct, Mr. Raymond's exposure to  
13 benzene would have exceeded his exposure to  
14 Camp Lejeune in just two days of smoking. Correct?

15 MR. RUZICKA:

16 Objection. Form and foundation.

17 A I mean, I think a couple of things. One  
18 would be what we don't know is exposure at the  
19 level of the urothelial. So, one -- so two things.  
20 Number one is we don't know what absorption is  
21 gonna be, and that absorption at the level, you  
22 know, smoking absorption versus drinking,  
23 ingestion, dermal, and, you know --

24 So -- so we don't know what that -- the  
25 difference is at the level when it reaches the

1 bladder urothelium. That's number one.

2 And to me, what all of this says is it's  
3 all additive because both of them are risk factors,  
4 or synergistic.

5 Q Well, based on the article we just looked  
6 at, if a smoker is exposed to 2,000 micrograms  
7 per -- on a daily basis, per day, and that means  
8 2,000 -- that means two days of smoking is 4,000  
9 micrograms, that exceeds the total cumulative  
10 amount of 3,498 micrograms exposure to benzene that  
11 Dr. Reynolds determined for Mr. Raymond based on  
12 Camp Lejeune water; right?

13 MR. RUZICKA:

14 Objection. Form and foundation.

15 A I'm -- I think it's a lot of assumptions  
16 there, actually. And -- and I'm not refuting any  
17 of it. It's just what we don't know is how much  
18 exposure got absorbed. That's what we don't know.

19 MR. ANWAR:

20 Q Okay.

21 A And, so, it's an unknown. He --

22 It may have been 2 micrograms in a  
23 cigarette, but how much is getting absorbed through  
24 the lungs into the bloodstream, from the  
25 bloodstream into the kidneys and liver and from

1 there? So we don't -- that's what we don't know.

2 But -- but it may be. And, again, as I  
3 said in my opinion, I -- I mean, I -- I -- I'm  
4 recognizing that he had both of those risk factors.  
5 And, so, which means that it could be synergistic  
6 or additive, one of the two, easily.

7 So I'm not refuting that. I'm just  
8 saying we just don't know. It's one thing to say  
9 what's in a cigarette. It's another thing to say,  
10 well, what --

11 From the cigarette -- from the cigarette  
12 to his bladder, you know, how much of it got  
13 absorbed in the liver, how much of it got absorbed  
14 in the bloodstream, how much of that got absorbed  
15 into the -- either the kidneys or the liver, and  
16 then how much of that 2 -- what is that? -- I think  
17 you said 2,000 micrograms actually made it to the  
18 bladder, and because there are two different routes  
19 of absorption.

20 So it would have been apples and oranges,  
21 you know, when we're trying to compare that study  
22 to -- to this exposure chart.

23 MR. ANWAR:

24 Q Understand- -- understanding all of that,  
25 4 ,000 is greater than 3,498; right?

1 MR. RUZICKA:

2 Objection. Form.

3 A If we're just talking numbers, I agree,  
4 yes. Yes, sir, I agree with that.

5 MR. ANWAR:

6 Q Okay. And if -- if a smoker is exposed  
7 to 2,000 micrograms of benzene per day, take -- if  
8 you multiply that by 365 over the course of a year,  
9 that number goes up by magnitudes; correct?

10 MR. RUZICKA:

11 Objection. Form.

12 A I mean, it does. The numbers -- again,  
13 those numbers go up. But, again, we're talking  
14 apples and oranges. We're talking ingestion versus  
15 inhalation.

16 MR. ANWAR:

17 Q Inhalation -- I mean, cigarette smoking  
18 is a risk factor for -- for bladder cancer; right?

19 A Oh, absolutely. And I think, like I said  
20 earlier, I think this is one of his risk factors.  
21 So I'm agreeing with you now.

22 Q And when you take that 2,000 daily,  
23 multiply it by the course of the year, 365, and  
24 then, in Mr. Raymond's case, multiply it by 50  
25 years, you're talking about a number that's even

1 magnitudes and magnitudes larger; correct?

2 MR. RUZICKA:

3 Objection. Form and foundation.

4 A Well, I mean, but, again, I think both of  
5 them are risk factors, and I think both of them  
6 contribute to his cancer. Whether that 50,000  
7 versus this number here, I think both of them, you  
8 know, contributed to it.

9 But, again, what I don't know is how much  
10 of that 50,000 made it to the bladder.

11 MR. ANWAR:

12 Q Well, I will tell you I did the math over  
13 the course of one year at 2,000 micrograms per day.  
14 You end up -- a typical smoker ends up with  
15 cumulative benzene exposure of 730,000 micrograms.  
16 And over the course of 50 years, if you multiply  
17 that out by 50 years, the typical smoker ends up  
18 with 36 and a half million micrograms exposure to  
19 benzene.

20 A To the lungs.

21 MR. RUZICKA:

22 Objection. Form and foundation.

23 Go, if there was a question.

24 MR. ANWAR:

25 Q Do you have any reason to disagree with

1 the numbers that I just --

2 A No, I'm not -- I'm not disagreeing with  
3 your numbers at all. The question is if we're  
4 talking about bladder and bladder cancer, those  
5 numbers was presented to the lungs. And, so,  
6 that's what the lung sees. The question is how  
7 much of that benzene makes it to the bladder.  
8 That's the point I'm making is -- is, you know, if  
9 you give me a coefficient of what's being absorbed  
10 at the level of the lungs, what's being absorbed at  
11 the level of the -- from the lungs to the  
12 bloodstream, those things --

13 What we don't know in that sort of kind  
14 of comparison, you know, we just don't know what's  
15 making it to the bladder -- the bladder. Right?  
16 And, so, that's what I mean by apples and oranges.

17 But, again, and even if you make that  
18 assumption, again, they both are additive and -- or  
19 synergistic, in my opinion.

20 Q You agree that we don't fully understand  
21 the causes of bladder cancer; right?

22 MR. RUZICKA:

23 Objection. Form.

24 A I think --

25 Well, and again, I'm not -- you know, I

1 don't want to be an antagonistic witness, but I  
2 think we do understand that -- we understand the  
3 process. I don't --

4 You know, you get a mutagenic cell.  
5 We've talked about that already. You get genes  
6 that transform, and you get somatic transformation  
7 and, in that process, develop in cancer. I don't  
8 know if that's what you're asking.

9 You're asking what all risks --

10 I guess your question, do we know all the  
11 risks? Is that your question you're asking?

12 MR. ANWAR:

13 Q I guess, putting it differently, would  
14 you agree that science is continuing to identify  
15 new potential causes of bladder cancer?

16 A I would agree with that.

17 Q Okay.

18 A There are unknown causes.

19 Q And there are instances of bladder cancer  
20 we cannot explain; correct?

21 A Yes, sir. And that's what I meant by  
22 there are unknown causes.

23 Q Sure.

24 Would you agree that having a risk factor  
25 or even many risk factors for bladder cancer

1 necessarily means that you --

2 A Oh, you just disappeared on me. Sorry  
3 about that. I don't mean to --

4 Are you still there? Am I still there?

5 Q I'm still there. Are --

6 Can you hear me?

7 A I can't see. This chart is in here. I'm  
8 trying to look at you.

9 Q Let me -- let me reask that question  
10 again. I will take the exhibit down. Sorry.

11 A Okay. There you go. Sorry. I wanted to  
12 look at you.

13 Q No worries.

14 A You still disappeared on me. I can't  
15 find you. Let me see.

16 There you go. Okay. All right.

17 Q Would you agree that having a risk factor  
18 or even many risk factors for bladder cancer  
19 doesn't necessarily mean that you will get bladder  
20 cancer?

21 A Oh, absolutely. I mean, again, that  
22 process that I described earlier, I mean, if your  
23 immune system is -- is intact and it's able to  
24 fight off those, I mean, you -- you can get -- you  
25 can get transformation to a cancer cell. You

1 can -- you can have cancer cells. And -- and that  
2 risk factor caused that can- -- those cancer cells.

3 But, you know, if your immune system is  
4 able to --

5 And the way I describe it to my patients,  
6 the immune system is like the state patrol. It  
7 finds all of those bad players out there and sort  
8 of take them off the highway.

9 But as you age or whatever factors affect  
10 your immune system, it is not able to do that, then  
11 that process is what -- is when you form a cancer.

12 So I think there -- there are -- you  
13 know, it -- you know, you do have those incidents  
14 and situations where you get a risk factor, and you  
15 may form cancer cells or get mutagenic changes, but  
16 it doesn't form an actual cancer.

17 So, yes, you can have a -- you can have  
18 the risk, you can have that risk cause those  
19 changes, and yet you still don't form an actual  
20 cancer, identifiable diagnosed cancers. So, yes,  
21 that can occur. And probably because you have --  
22 your immune system is strong enough to prevent it  
23 from -- from forming that actual cancer. But that  
24 can occur.

25 Q Is it fair to say that Mr. Raymond's

1 bladder cancer might have occurred regardless of  
2 exposure to Camp Lejeune water?

3 MR. RUZICKA:

4 Objection. Form.

5 A If he had never gone to Camp Lejeune and  
6 he had never been at Camp Lejeune and been exposed  
7 to Camp Lejeune, I mean, I guess that's a really  
8 hard question to say. I mean, he is a smoker. I  
9 mean, that's always a risk. We know that not all  
10 smokers form cancer, also.

11 But I think that's a hard question. I  
12 don't -- that's hard for me to answer right there.  
13 And, so, would he still have a risk if he had not?

14 I think a better way to answer that  
15 question for me is will he still be at risk had he  
16 not gone to Camp Lejeune? The answer's yes. Would  
17 he have formed a cancer if he had not gone to  
18 Camp Lejeune? I don't think any of us would know.

19 MR. ANWAR:

20 Q It's not your testimony that everyone  
21 that goes to Camp Lejeune develops bladder cancer;  
22 right?

23 A No. That's --

24 And, again, that goes back to my earlier  
25 statement. Not everyone that's at any risk forms

1 bladder cancer, you know, because you could be at  
2 that risk and you never get -- you never get the --  
3 the genes -- you never -- you never get the mutant  
4 genes, so you never form.

5 Or if you got the mutant genes, your  
6 immune system gets rid of the cancer and it never  
7 happens. And you can form the --

8 I mean, again, so it's a cascade of  
9 things that have to occur, but -- but you're --  
10 you're right. Everybody that goes and gets exposed  
11 don't mean they're gonna form cancer. Whether  
12 they --

13 Any of the risk factors that you -- that  
14 I've named doesn't mean you're going to -- to  
15 develop a cancer.

16 Q And, so, that would be true of  
17 Camp Lejeune water; right?

18 A That's every risk factor.

19 Q And it's also true that Mr. Raymond's  
20 bladder cancer might have occurred regardless of  
21 Camp Lejeune water; correct?

22 MR. RUZICKA:

23 Objection. Form.

24 A You mean --

25 I mean, yeah, it could have. I mean, he

1 had other risks. He had other risk factors or  
2 other risk factor that -- that was present. So,  
3 yes, that could have been the case.

4 Q Is there some background risk for  
5 developing bladder cancer?

6 A I'm not sure what that means.

7 Q Do you -- do you know how many cases per  
8 year of bladder cancer there are in the United  
9 States?

10 A Uh, 80-something -- 83,000, I think.

11 Q And I think we already discussed bladder  
12 cancer is one of the most common cancers in the US;  
13 right?

14 A Yes.

15 Q Would you agree that we're exposed to  
16 some carcinogens daily as a part of our everyday  
17 life?

18 MR. RUZICKA:

19 Objection. Form. Foundation.

20 A You mean --

21 So we're talking in general right now?

22 MR. ANWAR:

23 Q Yes.

24 A Absolutely. Sunlight, you know, this  
25 Diet Coke, probably. If we're talking in general,

1 yes. You know, we don't know what's in the air  
2 outside. You've got people that's walking in  
3 asbestos buildings. It's just -- yes, sir.

4 Q Do our own bodies make carcinogens?

5 A So to answer that question, what --  
6 what -- what hap- -- what can't -- what happens is  
7 can our bodies make --

8 We can be --

9 So -- so to answer your question, two  
10 forms. One is from a familial standpoint  
11 genetically, you can get mutant genes that you're  
12 just born with, and those genes will make abnormal  
13 DNA and abnormal protein that eventually will  
14 manifest itself. And, so -- and, usually, those  
15 tumors are aggressive and they show up early and  
16 they overwhelm your immune system.

17 You can also get genes that the mutant  
18 gene itself affects the actual tumor suppression  
19 genes. We have tumor suppression genes that  
20 suppresses this form of cancer. And if you have  
21 genes that affect your tumor suppression -- or that  
22 affect tumor suppression genes, then you're gonna  
23 be prone to develop that cancer.

24 And so -- so -- so when -- when you --  
25 so -- so that's one.

1           And then, we are exposed to all type of  
2 toxins every single day. And -- and so -- and so  
3 if your immune system is defective or you've got --  
4 or you got a gene that -- that's mutant that forms  
5 a cancer or -- or cancer cell, then that is that  
6 sort of kind of where we inherently will develop  
7 cancer.

8           So -- so it is those familial genes that  
9 you --

10           Instead of having an agent that causes  
11 the -- the mutant form of a normal gene, you're  
12 born with that mutant gene. So that's one way to  
13 do it. And -- and, again, you can also, as we  
14 stated before --

15           Well, that's typically -- let me back up.  
16 That's typically how that process happens. You  
17 know, everything else is you -- you've got some  
18 genotox- -- some genotoxic effect, whether that's  
19 sunlight to your skin -- that's genotoxic --  
20 whether that's radiation to organs that we use to  
21 treat cancer can then form.

22           So, for example, when you take a bladder  
23 cancer that's a, you know, typical, a -- a squamous  
24 cell carcinoma, well, that radiation eventually is  
25 genotoxic. So even though we may be treating, for

1 example, prostate cancer, it could form a secondary  
2 bladder cancer because it was exposed -- the  
3 bladder was exposed to that radiation. So that can  
4 be geno- -- that can be genotoxic. And, so -- and  
5 then that can form cancer.

6 So you've got those things that are  
7 genotoxic, and then it is a reason for the cancer  
8 cells. Or you can be born with that mutagenic  
9 gene. But because you're born with it, it still --  
10 it still has a process that it could take years for  
11 that cancer to actually form.

12 We see that all the time in our prostate  
13 cancer patients, where they have BRCA gene that  
14 forms those abnormal genes. But those patients may  
15 take, you know, four or five decades before they --  
16 they show up. But they are born with that gene  
17 abnormality.

18 Q Would you agree that TCE and benzene are  
19 widely present in the environment?

20 MR. RUZICKA:

21 Objection. Form. Foundation.

22 A I'm not an epidemiologist. I would have  
23 to refer to them to talk about, you know, what  
24 their presence is in the environment.  
25 Pathologists.

1 MR. ANWAR:

2 Q Are you aware that benzene and TCE are  
3 often detected in many common foods that we eat?

4 A Again, I would have to refer to some  
5 experts in food or experts in -- in epidemiology.  
6 I'm sure that falls under another -- another expert  
7 besides a surgical urology oncologist.

8 Q That's not something you considered as  
9 part of your analysis; correct?

10 A No, sir. No, sir. No, sir.

11 Q Okay. So we spent some time earlier  
12 talking about your process for ruling out  
13 Mr. Raymond's occupational exposure as a cause of  
14 his bladder cancer. I wanted to focus a bit more  
15 on Mr. Raymond's exposure to Camp Lejeune water.

16 Mr. Raymond was at Camp Lejeune from 1963  
17 to 1965; correct?

18 A Correct.

19 Q And his bladder cancer --

20 So that's --

21 Strike that.

22 So he was exposed to Camp Lejeune water  
23 for approximately two years; correct?

24 A Correct.

25 Q And his bladder cancer developed in 2021;

1 correct?

2 A Correct.

3 Q Or was diagnosed in 2021; correct?

4 A Correct. Yes, sir.

5 Q And so Mr. Raymond's bladder cancer and,  
6 to be more specific, his urothelial carcinoma was  
7 diagnosed 56 years after his last day at  
8 Camp Lejeune; correct?

9 A Correct. Sounds right, yes, sir.

10 Q On the flip side, Mr. Raymond has been  
11 smoking or had been smoking one pack per day since  
12 he was 18, in 1963, until 2013; correct?

13 A Correct.

14 Q I guess I'm -- my question to you is how  
15 did you reconcile or how did you weigh smoking as a  
16 risk factor against Camp Lejeune -- exposure to  
17 Camp Lejeune water as a risk factor when  
18 Mr. Raymond's exposure to Camp Lejeune water was 56  
19 years ago for two years versus his smoking, which  
20 was constant for 50 -- for 50 years?

21 A I think, first --

22 MR. RUZICKA:

23 Objection. Form.

24 Go ahead.

25 A I think, first, I didn't weigh them

1 against each other. I weighed them together, one.

2 Number 2 is the -- you know, the -- as I  
3 stated earlier, you know, latency for bladder  
4 cancer, whatever the cause, is just that whole  
5 process of -- from exposure through the process of  
6 genotoxicity to mutagenic changes to forming a  
7 mutagenic cell, somatic transformation to forming  
8 cancer cells, from cancer cells that are  
9 microscopic and undiagnosed to the mutant versus  
10 that immune response to the time that he was  
11 diagnosed.

12 And I think that --

13 And then -- and then from even the time  
14 where it shows up as a tumor to the point where  
15 it's actually recognized. So all of that's just  
16 time. And -- and it's just -- it is not a short  
17 period of time.

18 And, so, that's why I said I weigh them  
19 together. And I -- and I think both of them are  
20 risks that contribute to his cancer. And --

21 But I don't think, weighing them against  
22 each other, in my -- as I think through this, I  
23 think they both play a role, either synergistically  
24 or additively, in the development of his cancer.

25 Q So is it your testimony that his exposure

1 to Camp Lejeune water and his smoking are both  
2 contributing causes to his bladder cancer?

3 MR. RUZICKA:

4 Objection. Form.

5 A They -- they are both risks of form --  
6 they are both risks for him being diagnosed with  
7 bladder cancer.

8 MR. ANWAR:

9 Q When you say they're both contributing  
10 causes, do you have any opinion about the  
11 percentage to which each contributes --

12 MR. RUZICKA:

13 Objection. Form.

14 MR. ANWAR:

15 Q -- based on the extent and timing of the  
16 exposures?

17 MR. RUZICKA:

18 Objection. Form.

19 A No, sir, I don't.

20 MR. ANWAR:

21 Q Is it your opinion that they were 50/50  
22 contributing causes?

23 A No, sir. I -- I don't agree with that.

24 Q Why not?

25 A I don't think we know.

1 Q Is it your opinion the -- that the  
2 Camp Lejeune water was an 80 percent contributing  
3 cause and that the smoking was a 20 percent  
4 contributing cause?

5 MR. RUZICKA:

6 Objection. Form.

7 A No, sir. That's -- that's -- that is not  
8 my opinion at all.

9 MR. ANWAR:

10 Q Do you believe either the Camp Lejeune  
11 water or Mr. Raymond's smoking history --

12 So let me back up.

13 Do you believe either Mr. Raymond's  
14 two-year exposure to Camp Lejeune water 56 years  
15 ago or -- versus his smoking history, 50-year  
16 smoking history, either could have been the  
17 independent cause of his bladder cancer?

18 MR. RUZICKA:

19 Objection. Form.

20 A I -- I think they both are risks. I  
21 think he was exposed. I think that they both are  
22 carcinogenic. I think they're both, you know,  
23 genotoxic. I think he was exposed to both.

24 I think there's a huge latency between  
25 the exposure and his development of an actual

1 cancer, diagnosable cancer. And I think they both  
2 are risks, and I think that's my opinion.

3 MR. ANWAR:

4 Q Do you have any opinion about the latency  
5 of -- period for exposure to any of the  
6 contaminants at -- at issue with respect to  
7 Camp Lejeune water?

8 A Well, I think at the end of the day, I,  
9 you know, I understand, you know, that there's a  
10 latency with --

11 And I understand that process as it  
12 pertains to, you know, a genotoxic chemical and the  
13 eventual formation of cancer. So I think I do  
14 understand latency, you know.

15 Does -- do I know specifically any  
16 particular chemical or -- or VOC or any other  
17 environmental toxin and how they -- you know, how  
18 we transcribe or think about their latency, I  
19 don't. But I do understand the latency between  
20 exposure and bladder cancer.

21 Q Understood.

22 As I understand it, based on more recent  
23 records that we've received, Mr. Raymond's  
24 urothelial carcinoma -- and I guess based on the  
25 opinions in your report -- that Mr. Raymond's

1 urothelial carcinoma has now metastasized.

2 Correct?

3 A Yes, sir.

4 Q And I believe he was diagnosed with  
5 metastatic urothelial carcinoma in August of 2024?

6 Is that right?

7 A I believe that's right. Yes. August,  
8 September -- yes, sir. Yes, sir.

9 Q In your report, you note that his  
10 metastatic urothelial carcinoma carries a five-year  
11 mortality rate of 8 percent. Do you recall that?

12 A Yes, sir.

13 Q What did you mean by that?

14 A His chance of being alive in five years  
15 is 8 to 10 percent. It's a -- it's a -- his  
16 mortality is high. That's -- that's what that  
17 means.

18 Q Do you -- do you know the average life  
19 expectancy for a man in the United States?

20 A Um, I would have to look that up. You  
21 know, I've seen it. It changes. As of today, I  
22 would have to look that -- that number up.

23 Q Now, Mr. Raymond also at some point had  
24 issues with erectile dysfunction; correct?

25 A Yes, sir.

1 Q Okay. Would you agree that Mr. Raymond's  
2 erectile dysfunction was the product of his age and  
3 not secondary to his bladder cancer?

4 A I mean, I --

5 Again, what I would say, I think that  
6 his -- his urologist may have said that. I mean,  
7 you know, he had age and smoked. I think he was  
8 having some --

9 And, again, I may be wrong. I think he  
10 may have had some heart issues at one point in  
11 time, AFib. I can't remember. I think that's  
12 correct. I mean, I think all of those things. But  
13 certainly age can.

14 And, you know, bladder cancer, in and of  
15 itself, is not gonna cause erectile dysfunction.  
16 You know, when you start getting into the  
17 metastatic disease part, you know, or some  
18 treatments, maybe. But I think, at the time, he  
19 wasn't having any of that. So I think that's  
20 probably just a function of his age, maybe smoking,  
21 maybe heart disease.

22 I have to look and see if he's  
23 hypertension. I don't have it in front of me. But  
24 the medical disease probably would contribute to  
25 that, too.

1 Q Did you review the -- the Camp Lejeune  
2 Justice Act in reaching your opinions?

3 A I did.

4 Q Why did you review the -- the  
5 Camp Lejeune Justice Act in reaching --

6 A Well, when I said I reviewed it, I think  
7 I -- I think I -- I -- you know, that was -- that  
8 standard was set out for me early on. That's  
9 number one.

10 Number two, I think as I was reading  
11 through some of the records, it -- it -- they --  
12 they were talking about it, so I looked it up. And  
13 I think that's why I read about it.

14 When I was reading some of the expert  
15 opinions, also, so -- so I just kind of looked it  
16 up myself.

17 Q When you say that standard, the  
18 Camp Lejeune Justice Act standard, was set out for  
19 you early on, what did you mean by that?

20 MR. RUZICKA:

21 Objection. Vague.

22 And, Dr. Bivins, you can answer that  
23 question to the extent that you don't have to  
24 disclose any of your conversation with any  
25 attorneys or experts in this case. So if you're

1 able to answer with that -- with that caveat, go  
2 ahead.

3 A Well, I mean, I think -- I think, you  
4 know, understanding the -- you know, what's gonna  
5 be the standard of -- as I'm -- as I'm looking at  
6 and evaluating, you know, the --

7 When I -- when I'm reviewing expert  
8 witnesses for medical malpractice, there's a  
9 standard that, you know, I have to look at as I'm  
10 reviewing. And, so, you know, understanding what  
11 the standard is as I'm reviewing these expert --  
12 these expert causation reports or any of these  
13 records as it pertains to Mr. -- Mr. Raymond, so  
14 that's what -- you know, that's what I meant by  
15 that.

16 And then -- and then -- and then I saw it  
17 in multiple causation reports. So I just kind of  
18 looked -- looked at -- looked it up myself.

19 MR. ANWAR:

20 Q Were you provided a copy with the  
21 Camp Lejeune Justice Act's language?

22 A No. Well, no, I was not provided with  
23 that -- with that. But I did look it up myself.

24 Q You -- you included the language of the  
25 Camp Lejeune Justice Act in your report; correct?

1 A Correct.

2 Q Why did you make the decision to include  
3 that in your report?

4 A It was very consistent in all of the --  
5 in all of the experts' reports, so I included it in  
6 mine.

7 Q Did you incorporate or consider the  
8 Camp Lejeune Justice Act causation standard in  
9 forming your opinions in this case?

10 A I did.

11 Q How did your consideration of the  
12 Camp Lejeune Justice Act legal standard, the legal  
13 causation standard, play into your differential  
14 etiology?

15 MR. RUZICKA:

16 Objection. Form and foundation.

17 A I'm sorry. I missed that.

18 MR. ANWAR:

19 Q So you -- you --

20 I believe a moment ago you testified that  
21 you considered the Camp Lejeune Justice Act's  
22 causation standard in forming your opinions in this  
23 case. Correct?

24 A I did.

25 Q How -- how did you consider it in

1 relation to the differential etiology that you --  
2 you performed with respect to Mr. Raymond?

3 A Well, you know --

4 And one other thing I want to add, too,  
5 before I answer that question is that, you know,  
6 it's not too indifferent [sic] than -- than what I  
7 do all the time. And, you know, when I do that all  
8 the time when I see patients with bladder cancer or  
9 any of my cancers, you know, looking at that  
10 cause -- the Justice -- the Camp Lejeune Justice  
11 Act, I mean, you know, is there a causal  
12 relationship? And that's one. And the second one  
13 is at least as likely as not. But that's pretty  
14 much how I approach all my patients. So that  
15 wasn't too indifferent [sic]. So that's number  
16 one.

17 So, but, then, back to your question, you  
18 know, having understood that -- understood that,  
19 are these -- are these risks either, A, is there a  
20 causal relation -- is it -- is it such that I can  
21 conclude that there's a causal relationship or can  
22 I -- can I prove that it concludes -- excuse me --  
23 that it is as legally as likely as not?

24 And, so, that's how I -- I used that as I  
25 started to go down each one of my differentials.

1 They didn't make my differentials, but once I  
2 had -- once I established that differential list, I  
3 just went down and applied it to each one.

4 Q So you applied the causation standard to  
5 each of the risk factors? Is that --

6 A Yes.

7 Q -- what --

8 A Yes. Yes.

9 Q Do you typically consider legal standards  
10 when performing a differential etiology?

11 MR. RUZICKA:

12 Objection. Form.

13 A No, I don't. But -- but what I would  
14 say, that, you know, even though this is a legal  
15 standard, this is not -- it's the same -- it's the  
16 same -- it's the same approach that I use every day  
17 when I'm going through my differentials to --

18 When I'm -- when I'm coming up with the  
19 same differentials, I'm looking at it and saying  
20 did this -- did this cause that or is this at least  
21 as likely to have caused this as not?

22 That's the same standard that I'm  
23 putting -- it's not --

24 I'm not using that legal standard -- I'm  
25 not using that legal standard when I'm looking at

1 my -- and talking and evaluating my patients, but  
2 it's the same approach as I do every day.

3 So I don't -- I don't put a legal  
4 standard to -- to how I evaluate my patients. But,  
5 essentially, that is essentially the same thing I  
6 do with all of my patients. It's no different.

7 Q So when you're -- you're discussing  
8 potential risk factors with your patients, are  
9 you -- are you talking with them in terms of at  
10 least as likely as not as opposed to more likely  
11 than not?

12 A I mean, I --

13 And some of that probably is just not out  
14 loud with them either, but I'm just -- I'm sitting  
15 down, going through with them that this is -- is  
16 either likely a cause or at least as likely as the  
17 cause.

18 And, so, as I said earlier, this is not  
19 too indifferent [sic]. I didn't say it was in the  
20 lines of the same. But -- but it's -- you know, I  
21 am going through that. Because there are gonna be  
22 some things that are just clearcut in certain  
23 diseases, and there's gonna be some that are gonna  
24 be could-be causes, you know, or could be as much  
25 of a cause as not a cause. And, again, that's

1 important as I'm -- as I'm laying out a plan for my  
2 patients. So all of those things are important.

3 But back to your question is, you know,  
4 again, some of it's -- some of it's written-out  
5 form. Some of it's verbal. Some of it's -- is  
6 actually just mentally for me as I'm thinking  
7 through with my patients.

8 Q Have you ever previously reviewed  
9 statutory language in offering an expert opinion?

10 MR. RUZICKA:

11 Objection. Form.

12 A To help me, can you just -- can you  
13 give -- help me understand that a little bit  
14 better?

15 MR. ANWAR:

16 Q I guess you've -- you've testified as  
17 a -- an expert in three medical malpractice cases;  
18 right?

19 A Correct.

20 Q In any of those cases when you were  
21 offering your opinions, did you consider the legal  
22 standard?

23 A Yeah, no, I think there is legal standard  
24 to --

25 And, again, you're asking me that

1 question without me knowing the details. So I  
2 don't want to -- I don't want to get too into  
3 specifics, because I'm not readily available.

4 But, you know, when I'm sitting down,  
5 there are legal standards to medical malpractice as  
6 far as standard of care. And -- and -- and, so, I  
7 have to understand what that is, and I do review  
8 that when -- when I'm looking at cases. I just  
9 don't know all --

10 For the state of Alabama, for example, I  
11 can't tell you what it is today because it's not  
12 right in front of me. But absolutely, I do review  
13 that.

14 Q Have you ever used the phrase "reasonable  
15 degree of medical probability" in your -- in your  
16 practice as a urologic oncologist or in the prior  
17 cases in which you served as an expert witness?

18 A Reasonable degree of medical probability?

19 Q Correct.

20 A I don't know if I've used those exact  
21 terms before.

22 Q Do you have any understanding of that  
23 phrase?

24 A Um, I think I can take it from -- on --  
25 on merit of what -- what that is.

1 Q What is it -- what is your understanding  
2 of it?

3 MR. RUZICKA:

4 Objection. Form.

5 A If I'm --

6 And, again, if I'm -- if I'm thinking  
7 about what that means, is reasonable degree that  
8 whatever issue we're talking about is medical  
9 probable, that it is a possibility or probability  
10 that this can -- whatever's said, it can occur.

11 MR. ANWAR:

12 Q Have you ever diagnosed a patient using  
13 an at-least-as-likely-as-not standard?

14 A I've never -- so -- so diagnosing a  
15 patient and -- and actual coming up with a list of  
16 risks and list of etiologies, that's one -- that's  
17 two different things to me. All of it is critical  
18 in creating a plan for the patient.

19 So when -- when I'm -- when I'm coming up  
20 with a diagnosis, usually that's not a term I'm  
21 using in a diagnosis. Because when we're talking  
22 about a presumptive diagnosis, that's one thing.  
23 Usually you can get to a diagnosis where you don't  
24 need to use at least as likely as not because,  
25 typically, when you diagnose them with bladder

1 cancer, you've got pathology, and so that's not at  
2 least as likely as not when you're talking about an  
3 actual diagnosis.

4 But when you're talking about coming up  
5 with etiologies, that's a little bit different.  
6 One is because, as we stated earlier --

7 And we're talking just in general, my  
8 patient population. And we can even talk about  
9 bladder cancer, for example.

10 You know, there are a lot of unknowns  
11 there. And, so -- so that term, that term, in and  
12 of itself, I may not have used that term or those  
13 words.

14 Have I had the spirit of something  
15 similar? Absolutely. Because there is a lot of  
16 unknowns in -- in causes with bladder cancer.

17 And, so -- so that term can -- that  
18 spirit of that term has been used as I'm looking at  
19 coming up with a differential etiology or risk,  
20 rather.

21 Q Do you hold your opinions in this case,  
22 in Mr. Raymond's case, to a reasonable degree of  
23 scientific and medical certainty or probability?

24 A And, again, I'm just trying to follow you  
25 so I can --

1           Yeah. Let me --

2           Do I hold my opinion in this case as  
3 to -- my opinion on Mr. Raymond Edwards to a  
4 reasonable degree of probability. Yes.

5           Did I -- did I -- did I particularly -- I  
6 want to make sure I had the question first, that I  
7 -- I think I answered it, because I think I -- I  
8 think I got the question. If that was the  
9 question, the answer is yes.

10 Q           I'll ask a follow-up just to be sure.

11           Do you -- do you hold your opinions about  
12 the cause of Mr. Raymond's bladder cancer in this  
13 case to a reasonable -- reasonable degree of  
14 scientific and medical certainty?

15 A           Yes.

16 Q           I'm just about done.

17           What'd you do to prepare for today's  
18 deposition?

19 A           I just sort of reviewed all the causation  
20 reports. I reviewed my -- I reviewed my opinion  
21 multiple times. I reviewed Mr. Raymond's  
22 deposition. I reviewed the doctor --

23           Is it Kates? I forgot his name.

24 Q           Dr. Hates?

25 A           Yeah, her report. I think that's all.

1 Just kind of reviewed -- and then some of the  
2 literature.

3 Q Did you meet with the lawyers?

4 A By Zoom, yes.

5 Q Approximately how many times did you  
6 meet?

7 A For preparation for this deposition?

8 Q Correct.

9 A I think two times. Yeah, two times.

10 Q Was there anyone present in those  
11 meetings that was not a lawyer, aside from you?

12 A I think his assistant, JT Malone, may  
13 have been there.

14 Q Okay. And --

15 A Yeah. Yeah. JT was there. Yeah.

16 Q Understood. And you --

17 MR. RUZICKA:

18 JT is an attorney.

19 THE WITNESS:

20 Okay. I just realized that as I was  
21 saying it. Sorry, JT.

22 MR. ANWAR:

23 Q All right. So it sounds like there  
24 wasn't anyone in those meetings that were not  
25 lawyers. Is that right?

1 A That's correct.

2 Q Okay. Earlier, I think you testified  
3 that you haven't had any communications with  
4 Mr. Raymond. Correct?

5 A Correct.

6 Q Have you communicated with any of the  
7 other plaintiffs in the case?

8 A No, sir.

9 Q Did you have any staff help you write  
10 your report or review the records you relied on?

11 A No, sir.

12 Q Or considered.

13 Okay. Are you familiar with the  
14 Campbell-Walsh-Wein textbook?

15 A Oh, yeah. I'm sorry. Yes. Yes. Yes.

16 Q Would you consider that a reliable  
17 authority in the field of urology?

18 MR. RUZICKA:

19 Object to the form.

20 A Yes. I mean, we -- we -- we -- you know,  
21 I -- I probably -- and probably most practicing  
22 uro-oncologists probably don't utilize it. It's  
23 sort of a foundation when you're a resident, you  
24 know.

25 But, I mean, I don't know when is the

1 last time I actual- --

2 I mean, I utilize probably more articles  
3 and research-based stuff now than I would probably  
4 utilize Campbell's.

5 But it is a foundation. That is our  
6 foundation textbook in training.

7 Q Understood.

8 I saw on your -- your CV that you served  
9 time in the United States Army Reserve. Is that  
10 right?

11 A Yes, sir.

12 Q Okay. Thank you for your service.

13 A Army and Air Force.

14 Q Oh, yeah. I see that there. Army and  
15 Air Force.

16 So it looks like you were in the United  
17 States Army Reserve from '89 to '92? Is that  
18 right?

19 A Correct.

20 Q And you served in Alaska -- no. In  
21 Alabama, Brundidge, Alabama?

22 A That's correct.

23 Q Okay. And then you were at Tinker Air  
24 Force Base -- or Air Force Army National Guard base  
25 in Birmingham, Alabama?

1 A That's correct.

2 Q Okay. And that was from '92 to '96?

3 A Yes, sir.

4 Q Okay. Does that encompass the -- the  
5 entire time that you spent in the service?

6 A No, sir. I --

7 So -- so '96, I graduated. So up until  
8 '92, I was an ordinance maintenance officer.

9 And, then, '92 I switched, once I got in  
10 medical school, to the medical corps.

11 So, then, from '96 until ninety -- I have  
12 to go back -- '98, '99, I -- I was no longer -- I  
13 discontinued service.

14 And then I got -- went into the Air  
15 Force. I got back into the service in '98, I  
16 believe, and I went from '98 till about 2000 --

17 And that was in the Air Force Reserve.

18 And I went from '98 to --

19 No. That's incorrect. That is not  
20 correct. I went from '97, '98 till about '99, I  
21 believe, in the Army.

22 And, then, somewhere along in there, I  
23 got back in the Air Force. I think it was 2000.

24 Then from 2000 till about 2005 or '6, I  
25 was in the Air Force Reserve at Tinker and then

1 down in Maxwell in Montgomery.

2 And that's when I was honorably  
3 discharged after that.

4 Q Understood. Thank you.

5 When you were in the Army Reserve as an  
6 ordinance officer, what did you do as an ordinance  
7 officer?

8 A Maintenance. Just was over maintenance  
9 company. Our platoon, really.

10 Q Maintenance of what?

11 A Trucks, equipment. You know, I --  
12 That's been 20 years ago, so it was just  
13 more so supply -- supply chain stuff for  
14 maintenance parts, equipment, and what have you.

15 Q Did your time in the military serve as  
16 any -- was that any part of the reason at all you  
17 decided to get involved in this case?

18 A No, sir.

19 Q Are there any questions or -- excuse  
20 me -- any answers to my questions that you wish to  
21 change before we wrap up the deposition?

22 A No, sir.

23 Q Is there anything I asked you that you  
24 didn't remember at the time but you recall now?

25 A No, sir.

1 Q Okay. I think those are all the  
2 questions I have for you, Dr. Bivins. Thank you  
3 for your time.

4 A Thank you.

5 MR. RUZICKA:

6 And I don't have any questions for you,  
7 Dr. Bivins. Appreciate your time today.

8 THE WITNESS:

9 Okay, gentlemen. Hey, I appreciate  
10 y'all's time, too, and y'all be safe and have a  
11 happy weekend. Okay?

12 MR. ANWAR:

13 Thank you.

14 VIDEOGRAPHER:

15 This ends the deposition. The time is  
16 12:29.

17 (OFF THE RECORD.)

18 MR. RUZICKA:

19 And I should have put on the record, but  
20 Dr. Bivins will read and sign. We'll get you the  
21 errata sheet.

22 MR. ANWAR:

23 Yeah, works for me. That was really for  
24 the court reporter.

25 THE COURT REPORTER:

1 Yes.

2 So, Mr. Ruzicka, you have a standing  
3 order for a copy; is that right?

4 MR. RUZICKA:

5 Yeah, I believe there's a standing order  
6 for the plaintiffs in this case.

7 THE COURT REPORTER:

8 Okay. You don't need a rough draft?

9 MR. RUZICKA:

10 I --

11 That's a great question. I don't know  
12 what the --

13 Zina, did we get a resolution on that  
14 issue?

15 THE COURT REPORTER:

16 You do want a rough draft, Mr. Anwar?

17 MR. ANWAR:

18 What do you think the timeline is on the  
19 final?

20 THE COURT REPORTER:

21 Ten business days, so two weeks from  
22 today.

23 MR. ANWAR:

24 Okay. If we did expedited, what would  
25 the timeline be on that?

1 THE COURT REPORTER:

2 There's different rates. I mean, there's  
3 one rate for two days, two business days, there's  
4 another bracket for three to four days, another  
5 rate for five to seven days.

6 MR. ANWAR:

7 Okay. Why don't we just order the rough  
8 and leave it at that?

9 THE COURT REPORTER:

10 Okay. Are you ordering the video as  
11 well?

12 MR. ANWAR:

13 I think not for the time being.

14 THE COURT REPORTER:

15 And, Mr. Ruzicka, do you need the video?

16 MR. RUZICKA:

17 Not for the time being, no. And I will  
18 take a rough. That'd be great.

19 THE COURT REPORTER:

20 Okay, gentlemen. I'll get those to you  
21 by Monday.

22 (Deposition concluded at 12:31 p.m.)  
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C E R T I F I C A T E

I do hereby certify that the above and foregoing transcript of proceedings in the matter aforementioned was taken down by me in machine shorthand, and the questions and answers thereto were reduced to writing under my personal supervision, and that the foregoing represents a true and correct transcript of the proceedings given by said witness upon said hearing.

I further certify that I am neither of counsel nor of kin to the parties to the action, nor am I in anywise interested in the result of said cause.



LOIS ANNE ROBINSON, RPR, RMR  
REGISTERED DIPLOMATE REPORTER  
CERTIFIED REALTIME REPORTER



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DECLARATION OF WITNESS

I, the undersigned, declare under penalty of perjury that I have read the foregoing transcript, and I have made any corrections, additions, or deletions that I was desirous of making; that the foregoing is a true and correct transcript of my testimony contained herein.

EXECUTED this \_\_\_\_\_ day of \_\_\_\_\_,  
2025, at \_\_\_\_\_, \_\_\_\_\_.  
(City) (State)

\_\_\_\_\_  
VINCENT BIVINS, M.D.

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate.

The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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