Exhibit 594

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA

IN RE:	)	
	)	
CAMP LEJEUNE WATER	)	Case No. 7:23-cv-00897
LITIGATION	)	
	)	
This Document Relates to	)	
ALL CASES	)	

TUESDAY, JUNE 24, 2025

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Videotaped Deposition of TIMOTHY M. MALLON, M.D., M.P.H., taken pursuant to notice and conducted at Keller Postman, 1101 Connecticut Ave NW #1100, Washington, DC, 20036, at 9:43 a.m. EDT, on the above date, before Jennifer A. Dunn, Registered Merit Reporter, Certified Realtime Reporter, California, Illinois & Texas Certified Shorthand Reporter, and Missouri Certified Court Reporter.

Job No. MDLG7448979

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I N D E X

E X H I B I T S

E X H I B I T S (Cont.)

P R O C E E D I N G S

(Tuesday, June 24, 2025 at 9:43 a.m. EDT)

THE VIDEOGRAPHER: We are now on the record. My name is Gordon Thomas. I'm a videographer for Golkow.

Today's date is June 24th, 2025, and the time is 9:43 a.m.

This video deposition is being held at 1101 Connecticut Avenue Northwest, Suite 1100, Washington, DC, 02236.

In the matter of In Re: Camp Lejeune Water Litigation, filed in the United States District Court for the Eastern District of North Carolina.

The deponent is Dr. Timothy Mallon.

Will counsel please identify themselves?

MS. SPRAYREGEN: Sharon Sprayregen for the United States.

MR. GARAND: Carson Garand for the United States.

MR. BOYER: Cory Boyer for the United States.

MR. LEE: Randy Lee and Jim Roberts for the plaintiffs.

THE VIDEOGRAPHER: The court reporter is Jennifer Dunn, and will now swear in the witness.

TIMOTHY MALLON, M.D., M.P.H.,

of lawful age, having been first duly sworn to tell the truth, the whole truth and nothing but the truth, deposes and says on behalf of the Defendants, as follows:

EXAMINATION

BY MS. SPRAYREGEN:

Q Good morning, Dr. Mallon.

A Good morning.

Q I know we've done this before, but for the record, I represent the United States. My name is Sharon Sprayregen. And this is a court proceeding, even though we are not in a courtroom, and you are under oath.

Do you understand you are obligated to tell the truth?

A Yes.

Q Can you please state your full name and address for the record?

A Timothy Michael Mallon. My address is 6508 Folded Leaf Square in Columbia, Maryland, 21044.

Q The court reporter, as we've all discussed, is taking down everything we say. It is important that you answer every question verbally.

For example, you must say "yes or no," rather than nodding or shaking your head.

Do you understand?

A Yes.

Q We should try not to interrupt each other, otherwise the court reporter will not be able to record us accurately. Please wait until I have finished my question before you start to answer, and I will not interrupt while you are speaking.

Because we are doing this over videoconference, there will be some lag, but let's do our best to make this work for our court reporter. Okay?

A Yes.

Q If you don't understand a question, please let me know and I will try to clarify it. If you do -- if you do not ask for clarification, I will assume you understood the question; is that fair?

A Yes.

Q During the deposition, you may hear one of your attorneys say: "Objection." Unless your attorney instructs you not to answer the question, please answer the question after the objection has been made. Okay?

A Yes.

Q You may take breaks. Please just answer the question that is pending before you ask to take a break; is that fair?

A Yes.

Q Is there any reason why you are unable to give

truthful and accurate testimony today?

A No.

Q How did you first become aware of the Camp Lejeune Water Litigation?

A Probably an ad on TV.

Q When was that?

A 2022. Around there.

Q Who first contacted you about working on this matter?

A I think Kevin Dean.

Q When were you formally retained?

A October of 2024.

Q And which law firm, if you know, retained you?

A I think the Bell Legal Group.

Q Did you speak with Plaintiff's counsel prior to being formally retained?

A No.

Q So you were retained on your very first interaction with your -- withdrawn.

When speaking to Plaintiff's counsel for the first time is when you were retained?

A Yes. I had to think about that.

Q What was your assignment in this litigation?

A I was assigned to do a general causation report for kidney cancer and for leukemia, and then subsequently I

did two specific causation reports, one for Mr. Downs and another for Ms. Tukes.

Q When did you learn about Mr. Downs' case?

A Probably January of 2025, maybe.

Q And your report was submitted in February of 2025; is that right?

A That's right.

Q So you learned about Mr. Downs' case approximately a month before you submitted your report?

A Yeah, I didn't have a lot of time.

Q And when did you learn about Mrs. Tukes' case?

A About the same time frame.

Q And what was your assignment to be in the specific causation case of this litigation?

A My assignment was to prepare these two reports and then to be available for deposition.

Q And what did you understand the two reports to be about?

A Well, with specific causation, I'm looking at their -- the two claimants' exposures and the relationship with their kidney cancer.

MS. SPRAYREGEN: Okay. I am now going to introduce a number of exhibits.

For the court reporter, tab 2 will be Exhibit 1.

And tab 3 will be Exhibit 2.

And tab 4 will be Exhibit 3.

And tab 5 will be Exhibit 4.

And tab 6 will be Exhibit 5.

And tab 7 will be Exhibit 6.

(Mallon Exhibits 1 through 6 marked for identification.)

BY MS. SPRAYREGEN:

Q So can you please take out Exhibit 2? Let me know when you have it in front of you. So Exhibit 2 should be the specific causation report for Mr. Downs; is that right?

Oh, excuse me. Exhibit 2 is the specific -- is for Ms. Tukes.

So please take out -- we can start with Ms. Tukes.

So I'm showing you what's been marked for identification as Exhibit 2.

And you recognize this document as your specific causation report for Mrs. Tukes?

A Yes.

Q Does this report contain all of the opinions you intend to offer in this case regarding Mrs. Tukes?

A Yes.

Q Do you agree with all the opinions and statements in this report?

A Yes.

Q Can you please take out Exhibit 1?
A I have it in front of me.
Q Do you recognize this document as your specific causation report for Mr. Downs?
A Yes.
Q Does this report contain all of the opinions you intend to offer in this case regarding Mr. Downs?
A Yes.
Q Do you agree with all the opinions and statements made in this report?
A Yes.
Q Can you please take a look at Exhibit 3?
And this is the Materials Considered List for Mr. Downs; is that right?
A Yes.
Q And please take a look at Exhibit 4.
This is the Materials Considered List for Mrs. Tukes; is that right?
A Yes.
Q And please take a look at Exhibit 5.
A I have it.
Q This is the First Supplemental Materials Considered List for both Mr. Downs and Mrs. Tukes; is that right?
A Yes.

Q And please take a look at Exhibit 6.
A Exhibit 6, yes.
Q This is the Second Supplemental Materials Considered List for both Mr. Downs and Mrs. Tukes; is that right?
A Yes.
Q Do the Materials Considered Lists that I've just shown you contain all the materials you considered for the specific causation reports of this case?
A I looked over the medical records for Mr. Downs. I got late in the process his information regarding his metastasis. It's sufficient.
Q When you say "it's sufficient," you're saying it's a complete and accurate copy of all the materials you considered for Mr. Downs?
A With the exception of what I just said in terms of his supplemental medical information regarding the metastasis, I didn't get that till late in the process, I don't think it's necessarily listed here, but Dr. Stadler covered that in his -- in his report, so I'm good.
Q So what you're saying is you think there may be some documents for Mr. Downs that you reviewed that are not listed on the Materials Considered Lists for Mr. Downs; is that right?
A I think there were 4,000 additional pages of

medical records, Counsel, that I'm not sure I completely addressed here. So to be fair, there may be a few pages that are not listed.

Q Understood. I will communicate with Counsel about that.

Did you review the reports of any of the United States general causation experts?

A I did.

Q You did?

A Yes.

Q Did you review Dr. Goodman's kidney cancer general causation report?

A Yes.

Q Did you review Dr. Shields' general causation report?

A Yes. I should say in both cases, not till after I had written my general causation report and not until after I had written the Downs and the Tukes report, so it was subsequent to my writing these two reports.

Q I don't believe that the Goodman report and the Shields' report are on the Materials Considered List for the Tukes and Downs reports.

A The reason being, I didn't see those until subsequent to the report being written.

Q So they were not considered for the report is what

you're saying?
A Correct.
Q But you did see them?
A Subsequently.
Q Subsequently. And did you review Dr. McCabe's kidney cancer report?
A Yes.
Q And is that the same as Dr. Goodman and Dr. Shields, you reviewed it subsequent to drafting your specific causation reports for --
A Did we list --
Q Tukes -- Mr. Downs and Ms. Tukes?
A I believe I saw McCabe before I wrote this, but I'm not certain of that.
Q So your reports were submitted on February 7th; is that right?
A I believe so, yeah.
Q Dr. McCabe's report was also submitted on February 7th?
A So I couldn't have seen it before then.
Q But you did see Dr. McCabe's kidney cancer report afterwards?
A Subsequently, yes.
Q Did you see any of -- did you review any of Dr. McCabe's other general causation reports?

A Not that I recall.
Q And did you review Dr. Lipscomb's general causation report?
A Yes.
Q Did you review the reports of any of the plaintiffs' general causation experts in this case?
A Yes. I had the opportunity to do that.
Q So did you review Dr. Bird's kidney cancer --
A Yes.
Q Withdrawn. Yeah, withdrawn.
Did you review Dr. Bird's kidney cancer general causation report both for --
A I'm sorry, go ahead.
Q That's okay. I do it, too, but both for my sake and the court reporter's, please let me finish my question. I understand it's difficult. I also have the tendency to want to jump in. So let's start again.
Before submitting your specific causation reports for Mr. Downs and Ms. Tukes, you reviewed Dr. Bird's general causation kidney cancer report; is that right?
A No, that's not correct.
Q Okay. When did you review Dr. Bird's general causation kidney cancer report?
A A week ago.
Q For the first time?

A For the first time.
Q And you're referring to his report, not his deposition transcript?
A His deposition transcript. I don't think I ever saw his report.
Q Okay. And going back to what you testified about reviewing for the U.S. general causation experts, did you review Dr. Goodman's kidney cancer report or her deposition transcript, or both?
A Both.
Q And for Dr. Shields, did you review his report, his deposition transcript, or both?
A I reviewed his report, his almost 600-page report, and I skimmed through his deposition transcript, but didn't read it.
Q And for Dr. McCabe, did you review his deposition transcript, his kidney cancer general causation report, or both?
A I think I reviewed his report.
Q And for Dr. Lipscomb, did you review his deposition transcript or his general causation report, or both?
A The transcript.
Q And what -- withdrawn.
Did you review Dr. Hatten's general causation

kidney cancer report?

A Not that I recall.

Q Did you review Dr. Hatten's general causation deposition?

A No.

Q So you've reviewed nothing of Dr. Hatten's; is that correct?

A Correct.

Q Have you reviewed Dr. Gilbert's report or her deposition transcript, or both?

A I did review her report. I did -- I don't recall reviewing her deposition transcript.

Q I'm sorry, I didn't hear you. Was that a "I did review her report?

A I did review her report.

Q Thank you. And did you review Dr. Savitz's general causation rebuttal report, his deposition transcript, or both?

A I did review his deposition -- not his deposition. I reviewed his general causation rebuttal, but didn't review anything else.

Q And for Dr. Madigan, did you review his general causation rebuttal report, his deposition transcript, or both?

A Same answer. I reviewed his rebuttal, but not any

deposition.

Q And I know the answer to the first one, but for keeping the record clean, I'm going to ask it.

Did you review the -- Dr. Stadler's specific causation report?

A Yes.

Q And I should have let you know that I am now transitioning to the United States experts. I am not trying to pull one over on you.

Did you review Dr. Vance's report?

A No.

Q You did not review Dr. Vance's report?

A Correct.

Q Did you review Dr. Johnstone's report?

A Only the draft deposition report.

Q I'm sorry. The -- could you repeat that?

A The draft deposition transcript.

Q Thank you. And did you review Dr. Lakind's report?

A No.

Q Did you review Dr. Bailey's report?

A No.

Q Did you ask to see either Dr. Lakind or Dr. Bailey's reports?

A I don't recall. I mean, I specifically thought

about it, but there was just not enough time, so I didn't review either report.

Q My question was: Did you ask to see them, not if you thought about asking to see them.

A So the answer is: No. I did not ask to see them.

Q Did you review the reports of any of the plaintiffs' other specific causation experts in this case?

A No.

Q I believe you reviewed Dr. Reynolds' report; is that correct?

A Yes. You said: "Plaintiffs," so, yes. I did review that.

Q Did -- do you agree with the opinions Dr. Reynolds' offered?

A Yes, mm-hmm.

Q Did you review Dr. Allen's rebuttal report?

A Yes, I did.

Q Did you agree with the opinions Dr. Allen offered?

A I did.

Q Did you review Dr. Lotan's report?

A Yes.

Q Did you review Dr. Margulis' report?

A Yeah.

Q Did you review Dr. Josephson's report?

A I believe you just asked me about that. And I

said: Yes. I saw the draft after the deposition transcript.

Q No, I never asked you about Dr. Josephson.

A Yeah. Name recognition.

Q I understand. I am taking depositions of you and Dr. Madigan, so I fully empathize.

A Thank you.

Q So you have not reviewed Dr. Josephson's report; is that correct?

A Yes.

Q And did you review Dr. Smith's rebuttal report?

A No.

Q Did you consider any materials not listed in your Materials Considered Lists that were entered as exhibits today?

A No.

Q No academics, texts, studies, or treatises, that weren't listed?

A Everything I've considered is listed on the first, second, and third supplemental deposition -- or Supplemental Materials Considered List.

Q For the record, you're talking about the two original Materials Considered List and the First and Second Supplemental Materials Considered Lists; is that --

A That's correct.

Q Again. And I really understand the desire to jump in, but please try to let me finish my question. I really get it.

Did you speak with any other Plaintiffs' experts in the course of preparing your reports for Mr. Downs and Ms. Tukes?

A No.

Q So please take out Ms. Tukes' report, which is Exhibit 2. And turn to the back where it has your CV.

Can you flip through your CV quickly, and let me know if you recognize this document as your current CV?

A I just want to make sure all the publications are current. Yes. It is my current CV.

Q Can you please turn to the third page of your current CV?

A It would help if the pages were numbered.

Q It's the page that has on the top: "Department of Preventive Medicine and Biostatistics," with the dates July 12th to June 2016.

A Yes, I can see that.

Q The ninth point says that you are a preceptor or you were, excuse me, a preceptor for occupational medicine residence and medical students, served as course director for four occupational medical -- I'm going to start again.

The bullet point that I was trying to read says:

"Preceptor for occupational medicine residents and medical students. Served as course director for four occupational medicine courses."

Did I read that correctly?

A Yes.

Q And can you now turn to the fifth page of your CV, the one that has "Prior Teaching Activities," at the bottom of it?

A Okay.

Q And under "Prior Teaching Activities" is listed the course "PMO973. OEM Journal Club Co-Course Director."

"PMO542. Clinical Occupational Environmental Medicine Course Co-Director."

"PMO655. Safety and Injury Prevention Course Director."

"PMO642. Clinical PM Services and Selected Topics and OEM Co-Course Director."

"PMO558. Intro to Preventive Occupational Medicine Residency's Course Co-Director."

"PMO549. Toxicology Course Lecturer."

Did I read that correctly?

A Yes.

Q And in your CV, the bullet point that we just discussed under the -- when you were at the Department of Preventive Medicine and Biostatistics between July 12th and

June 2000 -- July 2012 and June 2016, the course director for four courses, does that refer to four of the courses that are listed on the subsequent page of your CV?

A I think it said five. But yes, these are the courses I was referring to.

Q For the record, you may want to update your CV.

A Thank you.

Q And then on the fourth page of your CV, under "Department of Preventive Medicine and Biostatistics," between July 2004 and June 2010, you have a bullet point that says the same thing as what we just read, that you served as a course director for four occupational medicine courses.

Do you see that?

A Which line down?

Q The tenth line down.

A Yes.

Q And are you referring to the same courses that are listed on the next page of your CV?

A Yes.

Q So how many times were you a course director for PMO973?

A How many times? So I was in the residency from 2004 to 2016. So what's that, 12 years.

So I was co-course director for PMO973 for 12

years.

Q And how many times were you a co-course director for PMO542?

A Same.

Q For 12 years?

A Yes.

Q And how many times were you a course director for safety and injury prevention?

A Probably, I want to say two years.

Q And how many times were you a co-course director for clinical PM services and selected topics in OEM?

A 12 years.

Q And how many times were you a co-course director for Intro to Preventive Occupational Medicine Residencies?

A 12 years.

Q And for how many years were you a course lecturer in toxicology?

A Certainly from '04 to 2010, so that's six years. And then -- let's just say six years.

Q What does it mean to be a course director?

A Well, so in this setting, I would organize the course content, the curriculum. I would arrange for speakers to come in and speak on selected topics, and I would make sure that every -- every topic that is kind of mandated by the curriculum was covered in terms of a

lecturer.

And then usually the associate residency director and myself would split up, you know, it was a term of 12 weeks, so probably each of us would have, as a minimum, two or three lectures that we would each do, and then we would arrange for speaker -- guest speakers to come in and give presentations on the remaining topics.

Q Is being a course director different from being a law professor, teaching a course in law school, if you know?

A Probably not much different.

Q Do you know how law school courses are organized?

A I did take one law school course in environmental law at the University of Michigan, at the law school.

Q Is being a course director different from teaching a large undergraduate course as a professor?

A Not in my experience.

Q The reason I'm asking is because what you described to me sounds different from a course where a law professor teaches the course and gives every single lecture in the class or almost every lecture in the class and isn't supervising a number of other people.

A Well, I understand. Your experience is different than mine.

Q Were you a course director or a co-course director for any other courses that are not listed on your CV?

A You know, there is one that we talked about last time, and that was the occupational and environmental epidemiology course. And I was the -- a co-course director for that course for, I think two years, and I was a lecturer for probably another couple of years after that, so a total of four years.

Q And what does it mean to be a lecturer for the course?

A Well, I probably gave one or two lectures during the duration of the course.

Q So the occupational and environmental epidemiology course that you were a course director for, is --

A I don't think it's mentioned any place else in the CV.

Q Not PMO542; is that correct?

A Correct.

Q And were you ever a course director for a toxicology course?

A In 2004, the current residency program director left, so the following year I was a course director for the toxicology course, so that would be in 2005, where I was the course director, so I gave several lectures, and as discussed previously, I arranged for guest lecturers to come in and give talks on some of the other content in the course.

Q I believe you testified at the last deposition that you were the program director for the toxicology course for at least a couple of years; is that correct, or did you misremember when you said that?

A No. I thought what I said before and what I said today was consistent.

Q Okay. So you're saying you were a course director for one year and you were a program director for at least a couple of years?

A No, no, no. Course director is course director. Program director refers to the residency program.

Two different things.

Q Could you explain that a little bit more to me since this is not my field?

A So the occupational and environmental medicine residency program is a residency program accredited by the Accreditation Council for Graduate Medical Education, and so they certified our residency program as being part of the 67 or 70 or so residencies that are accredited at the Uniformed Services University.

Also, under the American Board of Preventive Medicine, they authorize us to train residents, and so the ACGME gives their blessing that we've met all the requirements and criteria, so as program director, I make sure that every aspect of the residency program meets all of

the requirements of the ACGME, the Accreditation Counsel of Graduate Medical Education, as program director.

Course director, it's specifically for that one course where I organize and provide lectures for the residents as a particular course director.

Q So what you just said now makes sense, but I can show you the testimony. I believe what you testified is that you were the program director for the toxicology course; is that correct?

MR. LEE: Objection to form. You can show him whatever you want to.

BY MS. SPRAYREGEN:

Q I can. Can you answer the question? If not, I can show it to you.

A Well, so if I misspoke and called it a program director when I was a course director, I stand corrected.

Q So can you clarify for me what you were?

A Both. I was both the program director and the course director. Course director for the toxicology course.

Q And program director for?

A The residency program.

Q The residency program.

You know what, let's just make this easier. You want to introduce -- for the record, I'm going to introduce Exhibit 7, which is Dr. Mallon's deposition.

(Exhibit 7 marked for identification.)

THE WITNESS: Did you get the errata sheet, Counselor?

MS. SPRAYREGEN: I don't know if I did.

THE WITNESS: Okay. There was really nothing of substantive change.

BY MS. SPRAYREGEN:

Q And if you turn to page 15 of the transcript, it's on page 5 of the document.

A Page 5. I'm there.

Q Okay. Thanks. I'm just trying to understand what you did. I totally understand if you misremembered, I'm not trying to play gotcha here.

On page 15, it says, QUESTION: "And did you teach any other courses in epidemiology?

"ANSWER: Not as a course director, but I provided lectures in a variety of classes that incorporated epidemiology."

And that's on lines 14 to 19.

And then in terms of -- when I asked what courses did you give lectures in that -- what courses did you give lectures in? The answers that I see are on page 16 of the transcript: "General epidemiology."

That's at lines 10 to 11.

"Intro to OEH," which is on 16, lines 9 to 11.

And then "Biostatistics," which is on page 18, lines 13 to 16.

So does that still sound right to you?

A Well, in terms of the biostatistics, I was never a course lecturer in that, but I had to teach and review with the residents the biostatistics that they were learning, so we did more review and we covered the biostatistics and the epidemiology as part of their training, in preparation for the boards -- the Board of Preventive Medicine Board.

Q Did you ever teach a class in biostatistics?

A Not specifically, no.

Q So when you were teaching residents, was this the equivalent to tutoring?

A Yes, I think you could -- you could summarize it that way.

Q Other than what I've just discussed and the lectures in toxicology, did you give lectures in any other courses that you can recall?

A Not that I can recall.

Q And when you testified that you were a course lecturer in toxicology -- toxicology, were you referring to PMO549?

A Yes.

Q And is it accurate to say that you gave a few lectures every year in toxicology for about six years?

A Yes.

Q Do you recall testifying about your work studying the association between burn pit exposures and certain diseases, right?

A Yes, ma'am.

Q Do you consider this investigation to be epidemiology?

A I do.

Q Do you consider your work on this investigation to be toxicology?

A It involves certainly components of toxicology, for sure.

Q Can you explain how your work on that investigation was toxicology?

A Absolutely. So the premise for our analysis was that we recognize that the troops -- the deployed troops were exposed to up to 400 different chemicals that were present in the burn pit smoke, and so we -- we specifically had sampling, environmental sampling, which is unusual, for the troops, the 200 troops that were deployed.

An Air Force bioenvironmental engineer had collected breathing zone samples for these 200 troops during the time that they were exposed to burn pits and they were deployed in both Iraq and Afghanistan.

So we took that information and then we looked at

their blood samples that were collected and we analyzed the blood samples for those same components that were in the burn pit smoke, and so we had to use molecular, you know, molecular -- molecular genetics, really, to look at alterations in biomarkers of exposure.

So specifically looking at mRNA alterations, micro RNA alterations, as a direct result of chemical exposure. So that component alone speaks to the toxicology, the toxicologic basis of that research.

And then the epidemiology part of it is we structured the -- we structured the research such that we had 200 cases of people exposed, and we had 200 controls that we selected from other people that were not deployed, and we compared the health outcomes in the deployed group and we compared that to the health outcomes in the non-deployed group, and what we found out was that there was an increase in respiratory hazards related to deployment exposure compared to the non-deployed troop, and so I think this was a pretty solid epidemiologic study.

One of my co-workers, one of my co-PIs in this study, a doctor of Ph.D. and epidemiology as a result of this work, so I think that you could safely say it was a very solid epidemiology project.

Q Can you please turn to the second page of your CV? I know it's not labeled, but it's the one that has Veteran's

Evaluation Services at the top.

A What page?

Q The second page of the CV.

A ES, okay.

Q Yeah. Under Section 6: "Prior Positions Held."

You see "Health Research System Administration Comp Injury Counter Measures"?

A Yes.

Q And then the third bullet point is: "Prepare recommendations for program director and Lee review"?

A Yes, ma'am.

Q What was that?

A This was in support of HRSA, and part of HRSA's mission is to coordinate the review of vaccine injuries for both pediatric and for adult patients. And this work was basically for a period of a year until the program was put on hold by Congress and by litigation, they -- until the program was paused, I would look at vaccine injury cases and review the medical documentation and provide a recommendation to the medical director of the program, whether or not people should be compensated based on their vaccine injury.

And I did that based on the extent of the medical record documentation that supported injury, or lack of injury, in those case files.

Q And moving up on the page, under the -- your work for the Veteran's Evaluation Services between October 2017 to present, do you see where I'm looking on the page?

A On the top.

Q Yes. The third bullet point says: "Address causal connection between exposure and related health outcomes."

Do you see that?

A Yes.

Q What did you do for that?

A Well, it says there is what I currently do for the VA, which is to review veterans' claims, and as part of that, we have essentially what the VA has in their medical documentation, they send the medical file to VES, and they have a physician reviewer look at the medical documentation in the claim file.

And there's a variety of conditions that people can submit claims for, but, essentially, to summarize, a lot of it is the presumptive conditions that are identified in the Camp Lejeune Litigation -- not litigation. In the Justice Act.

The VA regulations identify what are those presumptive conditions, so I'll review the medical records for any presumptive conditions and then any additional conditions that might be related to exposure to Camp

Lejeune, all the VA will specifically ask which questions they want me to answer in regards to the exposure and the health outcome that's present in the claim file, and I'll submit a medical opinion as it relates to an individual veteran's claim.

Q Do you refer to this in your prior litigation as writing specific causation reports for the VA?

A I don't believe I did. Because it wasn't -- it wasn't something that I was ever deposed on. It wasn't something that ever went to court. It was just basically doing my job for the VA, which is to review cases and make a determination and submit the opinion.

Q You're not an attorney, correct?

A Correct.

Q And you're not an economist, correct?

A I'm sorry?

Q You're not an economist; is that correct?

A That's correct.

Q And you're not a geneticist; is that correct?

A I am not formally a geneticist, that's correct.

Q Do you have any training in genetics?

A I thought you might ask me that question. Yes.

I do have training in genetics. I took a genetics course in medical school, and I had a senior research project as a undergraduate -- undergraduate mas -- not

master's, just my BS.

My senior research project was in molecular genetics, looking at alterations in coding for -- I don't recall all the specifics, but my molecular biology professor, that was his line of research, and I supported his research as part of my senior thesis for my BS in biology.

Q You've never taught any courses in genetics; is that correct?

A That's correct.

Q And you've never taught any courses in molecular pathology; is that correct?

A Correct.

Q And you've never published in the peer-reviewed literature on genetics; is that correct?

A Correct.

Q And you've never published in the peer-reviewed literature on molecular pathology; is that correct?

A Well, I think that the alterations in microRNA that we saw in the burn pit exposures would probably meet the criteria for what you just said, in molecular genetic alterations due to burn pit exposures.

Q Other than what you just described about the molecular alternations due to burn pit exposures, have you published in the peer-reviewed literature in molecular

pathology?

A No.

Q You don't have any certifications in genetics; is that correct?

A That's correct.

Q And you don't have any certifications in molecular pathology; is that correct?

A Correct.

Q And you don't have any degrees in statistics; is that correct?

A Statistics. No degrees, but, you know, it's a -- it's a very large component of training for a master's in public health.

Q And you've never published in the peer-reviewed literature regarding the effects of TCE on kidney cancer; is that correct?

A Correct.

Q You've never published in the peer-reviewed literature regarding the effects of PCE on kidney cancer; is that correct?

A That's correct.

Q And the same for vinyl chloride; is that correct?

A Yes.

Q And the same for benzene; is that correct?

A Yes.

Q And you're not an oncologist; is that correct?
A That's correct.
Q And you're not a urologist; is that correct?
A That's correct.
Q And you're not a surgeon; is that correct?
A Correct.
Q And you're not an immunologist; is that correct?
A That's correct.
Q Would you agree that a doctor who is a clinician is directly involved in the diagnosis, treat -- and treatment and care of patients?
A Was that a question, Counselor?
Q I'm -- yes.
A Could you clarify that, please?
Q How would you define a clinician?
A Well, clinician in what area?
Q I'll move on. When was the last time you saw patients?
A That's a good question. So what I do daily is to review medical records on veterans who are essentially patients, and so I do that daily.
Q When you review these medical records, are you -- do you consider the veterans -- withdrawn.
Do you consider the medical records of the -- I'll strike that.

Do you consider the veterans patients when you're reviewing your medical records?

A To the extent that anybody in a patient when you're doing disability reviews, yes.

Q When was the last time you diagnosed and treated a patient?

A That's probably 20 years ago.

Q And what --

A I take that back, Counselor, because during the residency program, I precepted residents up until 2016 in the clinical occupational medicine clinic at Walter Reed Army Medical Center or now National Military Medical Center.

And so, you know, we saw patients day in and day out and we had to teach the residents how to do that.

So seeing patients -- seeing patients with occupational injuries, occupational exposures, that had to be evaluated with, evaluated in terms of HIV, bloodborne pathogens, you know, the list goes on.

Q Have you ever treated a patient for kidney cancer?

A I will say that during my residency training in the -- my internship year, I had the opportunity to treat patients with kidney cancer.

Q Since being a resident, have you treated a patient for kidney cancer?

A Not since then, no.

Q Have you ever diagnosed a patient with kidney cancer?

A No.

Q When were you a resident?

A I graduated from my last residency program in -- let's see, 1996.

Q Can you turn to the transcript, which is Exhibit 11, page -- excuse me, Exhibit 7.

A The depo transcript?

Q The depo transcript. And it is Exhibit 7. My bad.

Page 290, and it is on the 74th page of the document.

A Page 290.

Q The bottom numbers, it's on page 74.

A 74. 290. Okay.

Q So starting on page 290, in response to a question at line 20, you answered: "I believe I talk about it in my CV. I have been doing, for the last eight years, work for Veteran's Evaluation Services, writing specific causation reports for veterans who worked at Camp Lejeune and developed cancer and noncancer outcomes, and those reports are submitted to the VA through the Veteran's Evaluation Services.

Did I read that correctly?

A Yes, you did.

Q And is that what you -- what the line in your CV that we talked about that says, quote: Address causal connection between exposures and related outcomes refers to?

A Yes.

Q What specific steps do you take to determine whether, in your opinion, a veteran's kidney cancer was related to his or her time at Camp Lejeune?

A I would say it's a weight of the evidence review of the information that's available in terms of exposure reports, review of individual risk factors that might contribute to the health outcome of concern, looking at the extent of the medical literature to see what is and what is not supported in the medical literature regarding any associations between the exposures and health outcomes of concern. That's the short version.

Q The first thing you mention was exposure reports. Right?

A Yes.

Q What exposure reports are available?

A For whom?

Q For these veterans that you were evaluating to determine whether or not their time at Camp Lejeune is related to their kidney cancer?

A Well, fortunately, the VA produces a VA exposure

memorandum, and in it is a summary of the ILER, I-L-E-R, which is an individual longitudinal exposure record.

And in there, they summarize what the individual exposure is that each veteran had, the best available information based on industrial hygiene sampling, based on a review of the military occupational specialty in regards to the specific veteran of concern.

So the ILER is a nice summary of what the exposures are. So that is part of the VA exposure memorandum that is included in every single VA case that gets submitted.

So I review that as part of the record.

Q Do any of these ILERs quantify a veteran's exposure to any of the VOCs involved in this case?

A Yes.

Q How do they do that?

A Well, as I mentioned before, the ILER is a summary of what is uploaded by the service deployment health environmental specialist.

So, as in the case of the burn pit exposures, there was a bioenvironmental engineer who was deployed with the troops, and they sample the environmental exposures that the troops encounter when they're deployed.

And that information that is collected gets uploaded into the ILER for every specific veteran who's

deployed, when they collect that information.

It's not always there. Probably 90 percent of the time it's not there, but to the extent that it's available, it gets uploaded into the ILER.

Q And you also -- you do these reports for individuals who were stationed at Camp Lejeune; is that correct?

A Yes.

Q Is there an ILER for individuals who are stationed at Camp Lejeune?

A Yes.

Q How is their exposure quantified?

A You know, that's a great question. It's quantified most commonly by the duration of exposure, so the VA tracks the number of months that an individual was stationed at Camp Lejeune. It also tracks the military occupational specialty of the veteran who was stationed at Camp Lejeune.

So it's a combination of both recognizing that there's a drinking water exposure, ingestion, and inhalation when they shower, plus recognizing that there are military occupational exposures. If the person's a mechanic, if they're, you know, if they're an engine mechanic, a aviation mechanic, understanding the MOS and the specific exposures that are related to the MOS gives me the ability to

understand what the total environmental exposure and occupational exposure component looks like.

And I include discussion in every report of both the environmental and the occupational exposure for each veteran that I do.

Q Do the reports state where on base the veteran lived and worked?

A To the extent that that's available, but almost every report doesn't get into that level of detail in terms of where they stayed on base.

Q So would it be fair to say for the vast majority of veterans, when you're looking at their exposure, you're looking at their MOS and the time they spent at Camp Lejeune only?

A I would say, but you have to put it in the perspective that I'm familiar with Morris Maslia's report, where he did the environmental model -- modeling. I had read that report long before I knew anything of the plaintiffs' cases, and so I was familiar with the environmental modeling and I knew that there was ongoing exposure that was very closely characterized by Morris and his team, Dr. Bove, so that information was available, and I had to use that in terms of my causation determinations.

Q So in your specific causation reports, and we'll get to this a little later, you discussed the Bove 2014a

article, right?

A Yes.

Q And you discuss Table 6 of that article, correct?

A Yes.

Q And that group's exposures into low, medium, and high; is that right?

A Yes.

Q Do you use that Table 6 when you're doing these specific causation reports that we're discussing now?

A Yes.

Q You do?

A I do.

Q And you have enough information to determine the microgram per liter months, excuse me, the cumulative microgram per liter months that the individuals who are evaluating have consumed?

A I'm happy to say yes.

Q And how do you have enough information to determine the cumulative microgram per liter months that these individuals have consumed?

A Well, I base the determination based on the individual exposure reports that Dr. Kelly Reynolds put together.

Q I'm not talking about -- I appreciate that. I'm not talking about Mr. Downs and Mrs. Tukes. I'm talking

about the specific causation reports that you do for your work at the Veteran's Evaluation Services, do you use the Bove 2014a Table 6?

A I would say that most of the reports that I do don't require that because the level of detail that the VA provides is not sufficient to be able to go into Table 6 and make a determination.

I can only use what information is available in the record, you can't make that up.

Q I completely understand that, and that was what I was trying to ask. Is there information, when you're doing these reports for the Veteran's Evaluation Services, that allow you to quantify an individual's exposure using the Bove 2014a Table 6?

A Well, I would say, to put it in context, I was -- I was thrilled when they published the ATSDR 2018 report and the subsequent 2024 mortality and incident studies, where they looked at exposure duration and that -- that provided more assurance that as I looked at exposure duration of veterans that I was on the right track in terms of recognizing that the longer the exposure occurred, the greater the likelihood of that causation was actually occurring.

Q Would it be fair to say that for most of the veterans you're evaluating for the Veteran's Evaluation

Services, you were determining their exposure based on their duration of time at Camp Lejeune?

A Yes.

MR. LEE: Sharon, when get a chance, about an hour and 15 minutes. Whenever you're ready to take a break.

MS. SPRAYREGEN: I can take a break.

THE VIDEOGRAPHER: The time is 10:58 a.m. We are going off the record.

(Recess taken from 10:58 to 11:09 a.m.)

THE VIDEOGRAPHER: The time is 11:09 a.m. We're going back on the record.

Please proceed, Counsel.

BY MS. SPRAYREGEN:

Q Just a few more questions about your work evaluating veteran for the Veteran's Evaluation Services.

You evaluate whether veterans who served as Camp Lejeune and were diagnosed with kidney cancer, whether that kidney cancer is related to their time at Camp Lejeune; is that correct?

A Yes.

Q And of those evaluations, what percentage do you find that the veterans' kidney cancer was, in fact, related to their time at Camp Lejeune?

A That's hard to say, because I don't have the

reports in front of me.

Well, most of it's based on duration of time spent. The majority of people who submit claims don't have sufficient time at Camp Lejeune to meet the, in my mind, the threshold.

So I would say 10 percent positive, 90 percent negative in terms of opinions.

Q And what is the threshold of time spent in your mind?

A That's a good question. You know, the VA says 30 days is sufficient, but, you know, if you look at the Bove studies, I think it gives -- it provides a little more guidance than the seat of the pants.

As you look at the duration, the longer the duration the greater the risk, and I think, you know, if you look at the risk, even two quarters of exposure, which is essentially six months, shows some increased risk, and that risk, particularly as it goes beyond 10 quarters, is even more markedly elevated in some cases.

So I think -- I think Dr. Bove, his studies, the 2024 studies, in particular, provides some guidance in terms of duration.

Q And you're looking at those Bove 2024 studies when you are doing your work for the Veteran's Evaluation Services; is that correct?

A Yes.

Q And you also evaluated whether veterans with leukemia -- withdrawn.

You've also evaluated whether veterans who have leukemia is -- and whether their leukemia is, in fact, related to their time at Camp Lejeune?

A Yes.

Q And about what percentage of those leukemia do you find that disease is, in fact, related to their time at Camp Lejeune?

A Well, that's -- that's -- well, the leukemia, in particular, the four carcinogens of interest in this case in terms of the risk and the genotoxic nature of their carcinogens that we're talking about, the duration tends to be a much narrower window to get to the point where there's markedly increased risk.

And so that gets closer to the 30-day mark because of just the toxicity of -- of the genotoxic chemicals and what's seen in terms of an earlier development of cancer related to the, you know, particularly AML and ALL, I think they're -- the risk is greater. It's just a more potent carcinogen as it relates to the leukemia than to the kidney cancer, the duration is longer for kidney cancer.

That's just my sense of things.

Q My question to you was about what percentage of

the leukemia evaluations that you do, of those that were Camp Lejeune, that you find that the leukemia was related to their time at Camp Lejeune?

A Thank you for that clarification.

The answer -- that's hard to say, you know, I would say off the cuff 50/50.

Q So for leukemia it's 50/50, but for kidney cancer it's about 10 percent; is that right?

A Yes.

Q Are you aware that only three of the nine water systems had contaminated water?

A I know that there were 10 contaminated wells in the Camp Lejeune system. The ATSDR, in their report, talked about not only the wells that were closed in the 1985 time frame, but going back to the early 1950s, the contamination was pretty extensive.

Q I was asking not about the wells but about the water systems.

Do you know that only that they're -- that only three of the water systems had contaminated water?

A Well, I'm not sure what you mean by that, Counselor.

Q So there are water treatment plants that service various areas -- withdrawn.

The various areas of the base were serviced by

different water treatment plants. And were you aware of that?

A I am aware that the wells, the wells that supplied Camp Lejeune supplied different water treatment plants. I think there were three different water treatment plants that those 10 wells fed into in.

Q So are you aware that the water treatment plants that were not fed in by those wells did not contain contaminated water?

A I'm not aware of that.

Q So you were not aware of the fact that there was not contaminated water at Camp Johnson?

A I'm sorry?

Q Were you aware of the fact there was not contaminated water at Camp Johnson?

A What is Camp Johnson?

Q It's a part of the base.

A That may be true, but I'm not sure how that's relevant in this case. What I did -- what I did want to say is because those contaminated wells fed those water treatment plants, even though there might have been some uncontaminated water feeding into the system, there was sufficient water that was contaminant feeding into those water treatment plants that the output from the water treatment plant was contaminated.

Q Have you heard of Camp Geiger?
A I believe that that's one of maybe the outlying areas.
Q Were you aware that the water at Camp Geiger was not contaminated?
A Could you spell that? I'm not sure I'm hearing you correctly.
Q I said were you aware that the water at Camp Geiger was not contaminated?
A I'm not sure. I think the -- I think the general position of the ATSDR was that all of the outlying areas, including Camp Lejeune and its surroundings, were all considered to be contaminated. That was my understanding.
I don't think that the VA excludes anybody from consideration because the general consensus was the water system was contaminated.
Q Have you ever given a presentation or spoken publicly about Camp Lejeune?
A No, I was invited to but I declined.
Q Have you ever examined Mr. Downs?
A No.
Q Have you ever communicated with Mr. Downs?
A No.
Q Have you ever examined Mrs. Tukes?
A Well, just to be clear, both for Downs and Tukes,

I reviewed their medical records, but I've never physically examined them.

Q Have you ever communicated with Mrs. Tukes?

A No.

Q Other than in this case, have you ever authored an expert opinion on the etiology of kidney cancer?

A In answer to your question, yes, I've offered medical opinions regarding the etiology of kidney cancer cases in veterans who submitted claims to the VA.

Q Other than your work for the Veteran's Evaluation Services, have you ever offered an opinion on the etiology of kidney cancer?

A No.

Q You're not an exposure -- withdrawn.

You're not an expert in exposure assessment; is that correct?

A Can you clarify the question?

Q Have you ever taken any college or graduate courses that would provide you with the scientific experience to perform an exposure assessment?

A I took a weeklong EPA course back in my residency program where it was an EPA risk assessment course that the Army Center for Health Promotion and Preventive Medicine set up for the residents for -- there were three of us that attended that course. It was a weeklong course on risk

assessment.

Q You don't consider yourself to be an expert in risk assessment? Again, I totally get it, but please let me finish talking just for her sake. If she were here, she'd be yelling at us. And again, I understand, because you know where I'm going.

Other than the EPA course on risk assessment, have you taken any other college or graduate level courses that provide you with scientific expertise in risk assessment?

A What do you mean by "risk assessment," Counselor?

Q Have you -- withdrawn. Have you read the EPA's risk assessment guidance for superfunds?

A It was part of the course curriculum for that weeklong course that I took.

Q And this was when you were in college?

A This was in residency program in the 1995 time frame.

Q So after the 1990 timeframe, have you ever read the EPA's risk assessment guidance for superfunds?

A I haven't looked at it again.

Q Have you read the EPA's guidelines for carcinogenic risk assessment?

A Nothing beyond that weeklong course.

Q Have you read the EPA's Exposure Factors Handbook?

A Nothing since that EPA course.

Q Have you ever ran ATSDR's PHAST, P-H-A-S-T, model?
A No.
Q Have you ever ran ATSDR's SHOWER model?
A No.
Q Have you ever run any other risk assessment models, such as L-E-A-D 99 or Crystal Ball?
A No.
Q Are you a member of any professional societies that include a focus on risk assessment?
A No.
Q Have you written any papers on risk assessment?
A No. We did write -- we did write one paper on, that was on my CV that lists the environmental exposure assessments for deployed troops.

I don't think it was specific to Iraq or Afghanistan, but we -- Dr. Carl and I authored a paper regarding the need for environmental assessment and what was required to complete that task for the military.
Q Other than that paper, have you written any papers that were published in peer-reviewed journals on risk assessment?
A No.
Q Have you been asked by journals to review manuscripts on risk assessment?
A Not that I can recall.

Q Have you ever been subject to any disciplinary action or censured by any licensing body?
A No.
Q Have you ever been subject to any disciplinary action by any court or tribunal?
A No.
Q Can you look at the Tukes report, please, and go to page 4?
A Page 4.
Q So the first paragraph says: "The methodology I used to form my opinions in this case aligns with the standard practices that I and other experts utilize when conducting similar analyses, specifically my approach included the following, as stated in my general causation report, with additional methodology for these specific causation opinions."
Did I read that correctly?
A Yes.
Q And you described your methodology with the same language in the Downs report; is that right?
A Yes.
Q And you used the same methodology in both reports.
Right?
A Yes.
Q What does it mean when you say "additional

methodologies for these specific causation opinions"?

A Well, what's different about the specific causation reports is that we have a exposure reports that were prepared by Dr. Kelly Reynolds, and we were able to factor that information into our causation assessment.

Q In terms of the searches that you did on PubMed and the Cochrane Databases, did you do anything differently or additionally for this report?

A No.

Q Did you do any searches on PubMed and in the Cochrane Database for this report, or did you rely on the searches that you had previously done for your general causation reports?

A You know, I did an update, I did an additional search. It was Google Scholar. I don't think I did any additional PubMed work, but using Google Scholar with -- for additional publications subsequent to the -- to the paper that I used in my general causation report. And I was able to come up with the one article that's I think we -- we submitted in our supplemental list of materials considered.

So, yes.

Q What search terms did you use when searching Google Scholar for the literature --

A Sorry, go ahead.

Q -- in this report?

A Well, the search terms included the ones clearly for the exposures of interest, and then for kidney cancer just generally, and I have nothing else to add.

Q I wasn't sure if you were done. I'm sorry.

Do you -- withdrawn.

You don't list in your report the specific searches that you used in Google Scholar; is that correct?

A That's correct.

Q Are the search terms and searches that you used in Google Scholar saved somewhere where we would have access to them?

A I'm sorry, I don't.

Q So it's not possible for anyone to reproduce your searches; is that right?

A That's correct.

Q Did anyone provide you with any studies for your specific causation reports?

A No.

Q Other than what we've discussed in Google Scholar and your reliance on the general causation searches and your review of Dr. Reynolds' reports, did you do anything else to obtain studies to -- that were reviewed for this report, for these two reports?

A Nothing beyond what we just said.

Q Would you agree that renal cancer -- withdrawn.

Would you agree that renal cell carcinoma and upper tract urothelial cancer are both cancers arising in the kidney?

A I think by definition, that's correct.

Q But they arise in different types of kidney tissue, right?

A Different kidney tissue, that's correct.

Q And their treatments differ; is that right?

A Well, since I don't treat kidney cancer, I'm not an expert in that area, and I would not hazard to guess the difference in treatments.

Q Do their etiologies differ?

A That's a good question. I would say that I specifically looked at renal cell carcinoma, which is a -- I mean, a lower tract rather than a upper tract that you're referring to, and I looked at the etiology related to renal cell carcinoma because Ms. Tukes had renal cell carcinoma and Mr. Downs had renal cell carcinoma, so my focus wasn't upper tract.

When you look at my report, it specifically refers to RCC NOS, and I think we had this conversation in the general causation report also, where I clarified that that's the risk that I looked at and that hasn't changed.

Q So you don't know whether or not their etiologies differ; is that correct?

A My sense of things is that the etiologies are the same.

Q Would you agree with me that within renal cell carcinoma there are multiple histologic subtypes?

A Yes, there are.

Q And would you agree that histology is relevant to cancer aggressiveness?

MR. LEE: Objection to form. You can answer.

THE WITNESS: Could you clarify that?

Because I'm not sure you asked that question.

BY MS. SPRAYREGEN:

Q Certain subtypes of renal cell carcinoma are more aggressive cancers than other subtypes of renal cell carcinoma, would you agree with that?

A I think that the answer to that is yes. There are some cell types that are more aggressive than others.

Q Would you agree that the most common renal cell carcinoma subtype is clear cell renal carcinoma?

A Yes.

Q What are some other renal carcinoma subtypes?

A Well, I think there's clear cell. There's papillary. Those are the two big ones that are relevant in this case.

Q So you would agree that Mr. Downs has clear cell renal -- clear cell renal carcinoma; is that correct?

A Yes.

Q What is your understanding of the subtype or subtypes of renal cell carcinoma that Ms. Tukes had?

A Well, Counselor, I'm not sure that I saw all the pathology reports as it relates to Ms. Tukes.

What my understanding is is that she had both papillary and clear cell renal cell carcinoma.

Q Are you aware of whether any of the subtypes of renal cell carcinoma are more associated with genetic predisposition -- with a genetic predisposition?

A Yes.

Q Which ones?

A The papillary. I'm also aware there's a genetic test that when you're testing for the papillary hereditary carcinoma, that there's a MET gene that is tested for and is positive in papillary carcinoma cases.

Q Are you referring to papillary or clear cell papillary carcinoma?

A That's a good question. So -- could you repeat the question?

Q When you say there is -- withdrawn. Do you know -- withdrawn. I'll start with this.

Do you know if clear cell papillary and papillary are different subtypes of renal cell carcinoma?

A You know, pathologists are a breed apart, and what

you get from one pathologist and what you get from a different pathologist may be completely different for the same pathology that's present in a -- in a particular case.

The pathology reports that I saw and read say that Ms. Tukes had clear cell renal cell carcinoma, papillary cell carcinoma, and it may be a subtype of clear because I think that's what they said in their pathology report and there may be a completely different papillary carcinoma, which is different.

Q You said "it may be a subtype of clear." What are you referring to?

A I'm referring to the pathology report for Ms. Tukes.

Q Sorry. I'm confused by what you just said. I'm not trying to be difficult here.

You said you know that she had clear cell renal carcinoma and you know she had subpapillary carcinoma. And then you said it might be a subtype of renal cell carcinoma.

What might be a subtype of renal carcinoma?

A The papillary. So in the pathology report that I read, it tried to differentiate and say that she had both elements of clear cell and papillary cell in the same -- in the same kidney.

Q Going back to my original question.

Do you know if histologically there's a difference

between papillary and clear cell papillary?

A Not specifically.

Q Would you agree that the cause of kidney cancer is multifactorial?

A I believe that there are risk factors that have been attributed to kidney cancer, yes.

Q By that, I mean, there's no single factor that explains why kidney cancer develops. Instead, there are multiple influences that work together to increase a person's risk.

Would you agree with that statement?

A Yes.

Q Would you agree that smoking is a risk factor for developing kidney cancer?

A Yes. Potentially.

Q I'm sorry. I didn't mean to cut you off.

A I said potentially.

Q Would you agree that family history of kidney cancer is a risk factor for developing kidney cancer?

A Yes.

Q Would you agree that obesity is a risk factor for developing kidney cancer?

A It is.

Q Would you agree that diabetes is a risk factor for developing kidney cancer?

MR. LEE: Objection to form.

THE WITNESS: Just to be clear. I think that there are degrees of risk related to the risk factors.

So, for example, diabetes is not felt to be nearly as high a risk factor in terms of categorizing risk from what I've read. But, yes, it's a risk factor.

BY MS. SPRAYREGEN:

Q So what you're saying is that some risk factors increase the risk of kidney cancer more than other risk factors; is that correct?

A That's correct.

Q Would you agree that high blood pressure is a risk factor for developing kidney cancer?

A Yes.

Q Would you agree that being of an older age is a risk factor for developing kidney cancer?

A Not so much. It is a risk factor, but it's on order of magnitude a risk -- age is considered a less significant risk or contributor than other risk factors.

Q So what you're saying -- and I'm really not trying to change it, is that it is a risk factor, but it's less of a risk factor than the other risk factors we've just discussed?

A Yes.

Q Would you agree that race is a risk factor, and specifically African Americans are more likely to have a high risk of developing kidney cancer than Americans of other races?

A Yes.

Q And would you agree that -- withdrawn.

A Can we look at my causation report on race, because I -- I specifically spoke to that issue, and I believe that --

Q I had questions about that later in your report.

A Because there were some -- there were some articles that I had read recently about her -- her various risk factors.

So in terms of race, I said that she was at slightly increased risk, so I don't have any additional comment beyond that.

Q Well, I'm right now not asking you about Ms. Tukes and Mr. Downs. Just so you know, I'm asking you about risk factors for kidney cancer.

Do you understand that?

A Yes, mm-hmm.

Q Would you agree that many, if not most individuals with one or more risk factors for kidney cancer, do not develop kidney cancer?

A Could you repeat that question?

Q Would you agree that many, if not most individuals with one or more risk factors for kidney cancer, do not develop kidney cancer?

A I would agree that it's -- it's a possibility.

Q What I'm saying, for example, is would you agree that many, if not most people who smoke, do not develop kidney cancer?

A So looking at the epidemiology of kidney cancer and the risk related to smoking, smoking is one of the greatest risks for development of kidney cancer, and not everyone who smokes develops kidney cancer, that is true, but there's a 2.5-fold increase risk of developing kidney cancer for people who smoke.

Q Understood. But even taking what you said as true, and I don't know whether or not it is.

MR. LEE: Objection to form.

MS. SPRAYREGEN: Withdrawn.

BY MS. SPRAYREGEN:

Q I will assume that what you said is correct. Even if there is a 2.5 percent increased risk --

A Fold.

Q -- fold. Withdrawn.

Can you say what you just said again?

A There's a 2.5-fold increased risk of kidney cancer in smoking. And that risk is greater for the amount of

smoking and the duration of smoking.

Q Even taking into account a 2.5-fold increased risk of kidney cancer among smokers, would you agree that many, if not most individuals who smoke, do not end up developing kidney cancer?

A That's true.

Q And the same for obesity.

Even though it increases your likelihood or it increases the risk of developing kidney cancer, many, if not most people who are obese, do not, in fact, develop kidney cancer?

A That's correct.

Q Would you agree that having one or more risk factors for kidney cancer does not make it more likely than not that a patient will develop kidney cancer?

A Would you repeat the question, please?

Q Would you agree that having one or more risk factors for kidney cancer does not make it more likely than not that a patient will develop kidney cancer?

A I agree that the more risk factors you have make it more likely that you'll develop kidney cancer.

Q Would you agree that there is -- you can -- withdrawn.

Would you agree that some individuals who develop kidney cancer do not have any risk factors for kidney

cancer?

A I believe that's true.

My understanding, Counselor, is that it breaks down a third, a third, a third.

A third maybe potentially idiopathic. A third are likely related to a genetic component, family history. And a third are related to environmental and occupational risks.

MS. SPRAYREGEN: I'm going to introduce Exhibit 8.

(Mallon Exhibit 8 marked for identification.)

BY MS. SPRAYREGEN:

Q In your report, you cite to the Mayo Clinic website. What I've handed you is what I -- the printout from the website that you cited in your report.

Can you take a look and see if this looks like what you referred to?

A I use the Mayo Clinic a lot, and it's probably my go-to source for risk factors related to kidney cancer and all other cancers, for that matter.

So, this, yes, it does look familiar.

Q Can you turn to page 3 of Exhibit 8?

A The pages aren't numbered.

Q That's right. That's it.

A This one?

Q Yes. Do you see where it says: "Causes"?

A Causes.
Q The very bottom of the page?
A Yes.
Q And it says: "It's not clear what causes most kidney cancers."
Do you see that?
A It does say that.
Q My understanding of that statement is that more than half of kidney cancers have an unknown cause; is that your understanding of that statement?
A I don't read that statement to say what you said.
Q So what do you read that statement to say?
A It doesn't quantify what percentage is known and what percentage is unknown. It just says it's not clear what causes kidney cancer.
Q So my understanding is if something says it's not clear what causes most kidney cancers, that means that more than 50 percent of the cases of kidney cancers have a cause that is not clear?
MR. LEE: Objection to form.
Is that a question?
BY MS. SPRAYREGEN:
Q Is that your understanding as well?
A I can see where you would make that judgment based on a more likely than not determination.

Q Would you agree that some risk factors are more prevalent in society and, therefore, explain more kidney cancers than others?

A Yes.

Q And you already made this statement, but I'm going to ask it as a question for clarity of the record.

Would you agree that smoking a history of one pack per year may increase a patient's risk of kidney cancer more than a smoking history of 10 packs a year?

A Could you repeat the question?

Q I'll rephrase it.

Would you agree that smoking 10 pack-years generally has a different risk than smoking one pack-year?

A Yes.

Q And so that there is a what could be called a dose-response relationship to the amount of smoking?

MR. LEE: Objection to form. You can answer.

THE WITNESS: I do agree that the dose and the duration significantly affect the risk.

BY MS. SPRAYREGEN:

Q I don't love those words either, I'm not going to lie.

Would you agree that having a BMI of 35 carries a different risk and an increased risk than having a BMI of, say, 27?

A Yes.

Q And would you agree that a smoking history of one pack-year may increase patient A's cancer risk more than patient B's risk?

A Could you clarify that question? Because when you ask me that question, I think about dose and duration of smoking, or dose and duration of, you know, what named the risk factor. And what matters a lot is whether the smoking continues or if the smoking stops.

Because with smoking cessation, the risk significantly reduces over time.

Q We're going to talk about that. I think you misheard me when I spoke.

A Perhaps.

Q I'm talking about two people who have the exact same smoking history.

Would you agree that that same smoking history may increase one person's risk of kidney cancer more than another person's risk of kidney cancer?

A No.

Q No.

A No. I agree that smoking has a standard set of risks, one pack-year of smoking in person A. One pack-year of smoking in person B. Same risk.

Q Would you agree that cancer is caused by genetic

mutations?

MR. LEE: Objection to form.

THE WITNESS: Not all mutations -- not all genetic mutations lead to kidney cancer.

MS. SPRAYREGEN: That wasn't my question.

THE WITNESS: Could you repeat your question?

BY MS. SPRAYREGEN:

Q That at a molecular level, cancer is caused by genetic mutations, or can be caused by genetic mutations?

A I agree with that.

Q And those mutations can occur randomly?

A Sometimes they do.

Q And would you agree that those mutations often do occur randomly?

A I agree that there are conditions under which the mutations are more frequent in occurrence, specifically related to this case and these four chemical carcinogens of interest, where there's exposure, those mutations occur more frequently.

Q I wasn't talking about this case and the particular contaminants of concern. I'm just talking about carcinogenesis more broadly, and in the context of carcinogenesis more broadly, would you agree that mutations that cause cancer often do occur randomly?

A I would not commit to that. I would say that

mutations that occur usually require some protuberation in the ecosystem of, if you will, the -- the cancer milieu. Something triggers the mutation. It doesn't randomly just occur on its own.

Q We just discussed that some cancers have an unknown cause, right?

A The line from the Mayo Clinic handout that you gave me said it's not clear what causes most kidney cancers, yes.

Q And physicians refer to a cause with no known cause as idiopathic, right?

A Yes.

Q And would you agree that no known cause is not the same thing as no cause?

A Correct.

Q So a cancer that is idiopathic in origin is still caused by something. We just can't identify what that something is?

A I agree with that.

Q And would you agree that we don't fully understand the causes of kidney cancer?

A Agreed. If you agree with your first premise, the answer is yes.

Q And do you agree with my first premise?

A If we're not talking about these two cases in

particular, in general they're -- yes.

Q I'm not talking about these two cases in particular. In general, would you agree that we don't fully understand the causes of kidney cancer?

A I look to the Mayo Clinic as one of my leading medical advisors, and I agree that they state that it's not clear what causes most kidney cancers.

Q Would you agree that science is continuing to identify new potential causes of kidney cancer?

A Yes.

Q In your experience, examining kidney cancer patients for the VA, are unexplained causes common?

A Well, as I spoke to -- just a couple of moments ago, I agree that there's a breakdown. There are some unexplained causes, a third. There are some that are genetically family history related, a third. And there are some exposure related, another third.

Q Where -- what is your source for that statement?

A I would say going back to the environmental medicine course that I took in medical school at Syracuse.

Q Do you have a specific article or that -- that makes that statement?

A It was part of the courses curriculum. I don't know that I have anything more recent to provide. I'm sure I could do a Google search and find it for you.

Q That's okay. And when was this course curriculum, when was this course?

A That would have been in 1991.

Q Do you have any knowledge about what percentage of clear cell RCCs are idiopathic?

A No.

Q Do you have any knowledge of what percentage of clear cell papillary renal cancers are idiopathic?

A No. Other than what we just talked about.

Q What are you referring to?

A Well, in terms of idiopathic in general, you know, a third, a third, a third.

Q Right. My question was specific to clear cell papillary renal cancer.

Do you have any knowledge of what percentage of that histological subtype are idiopathic?

A I would say the same breakdown applies to the specific, you know, renal cell, clear cell, papillary, clear cell. In terms of idiopathic, family history and exposure related.

Q What is your -- the basis for that statement?

A Going back to that course that I took in medical school.

Q In the early 1990s?

A Yes.

Q So if we agree -- we've agreed that there are -- that no known cause is not the same thing as no cause.

Right?

A No known cause is not the same, correct.

Q Right. And would you say -- I think you have agreed to this, but I'll just ask it again.

If I'm asking this a second time, I apologize.

Would you -- would you say it's -- there are potential causes of kidney cancer that we may not know about?

A Yes.

Q And that's the known causes of kidney cancer are not the came as the potential causes of kidney cancer.

Right?

A They're different, yes.

Q So the list of risk factors in your report is not comprehensive -- is not a comprehensive list of potential causes, given that there are potential causes that we don't know about?

A It's hard to capture infinity, Counselor.

Q But would you agree with that statement?

A Yes. But I would say that, you know, it's accurate to 99 percent.

The published literature lists these same risk factors, so to the extent that where our current knowledge

is as it relates to risk factors in kidney cancer, these are -- these are what's known.

Q You're saying with respect to our current knowledge. And my question is: Is there a possibility that knowledge will be gained in the future and there are things we just don't know now?

A Well, I hope that's true, you know, that we continue to learn as a society what causes things so we can do a better job of preventing them.

Q So, for example, some idiopathic cases might be caused by unidentified environmental exposures?

A Yes.

Q And just because an environmental exposure to a carcinogen is unidentified, it doesn't mean that that did not occur, right?

A Yes.

Q And would you agree that our bodies are exposed to carcinogens on a daily basis?

A Yes.

Q And that it's impossible to live a life free from exposure to all carcinogens?

A Yes.

Q Would it be fair to say that an individual instance of cancer might have occurred regardless of the presence of a risk factor?

A Could you repeat the question, please?

Q Sure. I'll change it. I'll make it more specific.

So I think we've agreed that some smokers may develop kidney cancer, but not everyone who smokes develops kidney cancer, right?

A Yes.

Q Would you agree that some of those smokers who developed kidney cancer may have developed kidney cancer even if they hadn't smoked?

A You asked that question, and I answered it "yes" previously.

Q So if a kidney cancer -- withdrawn.

So if a kidney cancer patient's only identifiable risk factor was a one pack-year smoking history, that patient's cancer may still have been caused by some risk factor that we cannot identify or don't understand yet.

Right?

A You know, I think on balance, I go with the risk factor that I know there is to be weighed against the unknown idiopathic risk factor.

I would have to say that that one pack-year of smoking is greater than -- greater known risk, rather, than the unknown idiopathic risk.

Q I understand what you're saying, but my -- my

question is: In a particular patient who has a one pack-year smoking history, it's possible that particular patient may have had some risk factor that we haven't identified yet, that is what caused the cancer in that one particular patient?

A That's correct.

Q Would you agree that it's possible for a member of the general public to develop kidney cancer without exposure to any potential risk factor?

A Per our discussion on idiopathic, yes.

Q Would you agree that there is some background risk for developing kidney cancer?

A I think there's a 15 or 100,000 cancer incidence in the United States for kidney cancer, so, yes.

Q So we're going to get to the numbers right now.

I'm going to introduce exhibit --

MR. LEE: Sharon, it's been another hour. Do you want to take another a 10-minute break?

MS. SPRAYREGEN: Sure.

THE VIDEOGRAPHER: The time is 12:05 p.m. We're going off the record.

(Recess taken from 12:05 to 12:18 p.m.)

THE VIDEOGRAPHER: The time is 12:18 p.m. We are going back on the record.

Please proceed, Counsel.

MS. SPRAYREGEN: I would like to introduce Exhibit 9.

(Mallon Exhibit 9 marked for identification.)

MR. LEE: What is Exhibit 9?

BY MS. SPRAYREGEN:

Q I will represent to you that Exhibit 9 is a printout from the National Cancer Institute: Surveillance, Epidemiology, and End Results Program.

A SEER.

Q SEER, exactly.

A Okay.

Q Given that you just said "SEER," I take it you've heard of it?

A Yes. So what's the date on this, Counselor?

Q So I printed this out a couple of days ago.

A Okay.

Q I believe there is a timestamp on it that says "June 2nd, 2025."

A Unfortunately, there's a two-year lag, that's why I ask, between the statistics in SEER and the present day.

So with that understanding, so we're talking about 2023 data when you're looking at these charts.

Q Okay. With that understanding, can you turn to page 5?

A Let's see, three, four, five.

Q And it's the page that looks like this. You were right. I was wrong. You were right. I was wrong. It's the page that looks like this.

And would you agree that according to SEER, and I quote: Compared to other cancers, kidney and renal pelvis cancer is fairly common?

A That's what it says, yes.

Q And on the first page it says that there were approximately 80,000 new cases of kidney cancer and renal pelvis cancer in 2025.

Do you see that?

A Yes.

Q And it's your contention that that, in fact, is data from 2023; is that right?

A No, I think this is updated data. These charts are 2023, but I think this is current data because that's consistent with what I read also.

It's down a little bit from what it was in 2024. My epidemiology said 81,600, but that was 2024 data.

This is -- I knew it was going to be less in 2025, but that's -- this is only an estimate. We haven't finished all of 2025, that's why it's -- it's just a projection.

Q You are not disputing the figure that is on page 1 of Exhibit 15, are you?

A Well, only so far as to say that we haven't

finished all of 2025, so I can't represent 2025 data because it wouldn't be complete. So it's got to be 2024 data.

Q I will admit, I do not know what time period they're using.

Would you agree --

A But we're not far off. 81,000. 80,900.

Q And it says that kidney cancer accounts for 4 percent of all new cancer cases in the United States.

Do you have any reason to dispute that figure?

A No.

Q I'm turning to page 12.

A Got two charts?

Q You're on the right page. I am not.

If you look at the top chart, our interpretation of the top chart is that since 2005, there have been roughly between 14 and 16 new kidney cancer cases for every 100,000 people each year?

A Between 14 and 16, I believe that's true. There's been a 2 percent increase in incidence over that time frame.

Q And that was my next question.

So you would agree that the lifetime risk of developing kidney or renal cancer is about 1.8 percent?

A Yes.

Q And that is on page 2.

A I think it's -- as least what I understood, it's a

little higher, 2.3. I thought the 2.3 was for men and the 1.8 was for women, but close enough.

Q So according to this data, for every 100,000 people, about 1,800 will develop kidney cancer at some point during their lifetime?

A I'm not following that, but I think it's true.

Q 100,000 people, I don't know if I misspoke.

About 1,800 will develop kidney cancer at some point during their lifetime?

A So the incidence rate is 2.3, and you multiply that by 330 million, yeah, that's probably true. I don't have my calculator. I'll accept your --

Q Would you agree that a reliable methodology for determining the etiology of a disease should take into account the background risk?

A You know, in the eight years of doing these cancer risk assessments for the VA, not once have I looked at the background risk.

Q You didn't conduct any chemical tests to determine whether Mr. Downs or Mrs. Tukes kidney cancers were caused by a toxic exposure, right?

A I personally didn't, but I will say that the record would suggest that they did do testing. They looked for potential increased risk in the genetics of the -- of Ms. Tukes.

Q I'm talking not about genetics, but would you agree that there are no blood tests indicating that -- there are no blood tests that one can do to indicate whether or not a cancer's caused by a toxic exposure?

A By a toxic exposure? So the answer to that question is very complicated, Counselor.

I think there are times that genetic testing can confirm that there is or there isn't a likelihood of increased risk based on those genotoxic exposures from the carcinogens, including the four that were present at Camp Lejeune.

Q I'm not talking about whether there is, as Dr. Allen hypothesized that someone is more likely to develop cancer if they're exposed.

I'm saying something slightly different, which is, there's no blood tests to look at the -- or no tissue tests to look at the particular cancer that one has developed and to determine whether or not it was caused by a toxic exposure?

A Well, I'm not trying to split hairs, Counselor. The blood tests that they do for the genetic testing is blood tests that they have available that they can look for increased propensity or susceptibility for developing cancer, as in the case of Ms. Tukes.

Q Are you aware of any tests, like a biomarker test,

that would indicate whether the kidney cancer was related to a toxic exposure?

A Yes. There's -- in the articles that I referenced, there is one study that looked at -- they looked at TCA as a biomarker of exposure.

And in terms of biomarker of effect, there is a genetic allele that they detected. The presence of which would be indicative of an increased risk of developing kidney cancer.

Q But my question is: Is there anything that you can test in the kidney cancer itself, the tissue sample, to determine whether it was caused by a toxic exposure?

A Well, to the extent that if they're testing the kidney directly or the blood that flows in and out of the kidney, it seems like it's kind of the same thing. They're looking at genetic markers of risks, if you will, that are present in the blood on the person that's being tested, and that has to -- I mean, ultimately has to interface with the kidney because that's where the cancer develops.

Q So as I understand it, you're talking about genetic markers of risk, and I'm talking about testing the kidney cancer tissue itself to determine whether or not the sample can say that it was caused by or can lead one to believe that it was caused by a chemical?

A The presence of the allele, where one is present,

one's missing, is indicative of exposure that caused the kidney cancer.

Q The presence of the allele is indicative of the fact that someone was actually exposed; is that what you're saying?

A Exactly.

Q What article is that?

A I knew you were going to ask me.

Do you have my previous sheets, Counsel? Because otherwise I have to get out my full list of references.

Q I'm sorry, are you asking me? I thought you were talking to Randy. Do I have what?

A Do you have the full list of articles that I reference? Because I'll be glad to point it out to you.

Q The full list of articles in your --

A My Materials Considered List.

Q I provided you with the Materials Considered Lists.

A Yeah, okay. Let's have a look.

Which exhibit was that?

Q The Materials Considered Lists were Exhibits 3, 4, 5, and 6.

A Okay. I think it has to do with the general causation. So if you have my general causation report with you.

Q I do. Why don't we get to that later. I will ask about that later.
A Okay.
Q So you performed a differential diagnosis on Mr. Downs and Mrs. Tukes, right?
A Yes.
Q And to do that, you ruled in risk factors for developing kidney cancer, right?
A Yes.
Q And then you ruled out known risk factors for kidney cancer that were not applicable to each Plaintiff. Right?
A Yes.
Q Is there a difference between a differential diagnosis and a differential etiology?
A Could you clarify your question?
Q How would you define "differential etiology"?
A Differential etiology suggests different causes.
Q And how do you define "differential diagnosis"?
A Examining potential for different causes. So they're the same.
Q So in your mind, a differential diagnosis and differential etiology are the same thing?
A Yeah.
Q And for Mr. Downs, let's turn to page 19.

A Of his report?
Q Of his report, yes. Are you there?
A Yes.
Q And the last paragraph above Section 10 reads: "In sum, Mr. Downs' exposure to the water at Camp Lejeune was more likely than not the cause of his kidney cancer. The other risk factors noted above may have contributed to his kidney cancer, but they are all relatively small compared to the very significant risk of toxic water at Camp Lejeune."
Did I read that correctly?
A Yes, you did.
Q And can you turn to page 18 of Mrs. Tukes' report?
A I bet it says the same thing. Page 18.
Q Mm-hmm. The very last paragraph says: "Given there are no other significant potential risk factors for Mrs. Tukes' development of kidney cancer, other than a very slight elevated risk due to her hypertension and weight, it is clear Mrs. Tukes -- Ms. Tukes' exposure to toxins at Camp Lejeune was a substantial contributing factor and cause of her kidney cancer. I'm able to conclude, based on this differential diagnosis, that Mrs. Tukes' kidney cancer was more likely than not caused by exposure to water at Camp Lejeune."
Did I read that correctly?

A Yes, you did.
Q And you employed differential diagnosis as part of your -- what you do at the VA; is that correct?
A Yes.
Q Do you have any experience performing a differential diagnosis outside of that work?
A Sure. During the 30-plus years of occupation at medicine work that I did for the U.S. Army and for --
Q So we discussed that many, if not most, cases of kidney cancer are unknown, right?
A We did discuss that topic, yes.
Q And when conducting your differential diagnosis, did you consider the fact that a cause of most kidney cancers is unknown?
A I considered it, yes.
Q How?
A Well, in a diagnosis of idiopathic kidney cancer is the diagnosis of exclusion, and so when you consider causes or potential causes in both Mr. Downs and Ms. Tukes, you would consider all those risk factors that we looked at in SEER and -- that are on the Mayo Clinic website, and so I'd go through each one of those potential risk factors first, and if none of those shows up to be a risk factor, I mean, if none of those risk factors that are present there show up in the individual patient's case, then it makes the

case for it potentially being idiopathic.

Q So is it your opinion that the only way to have an idiopathic cause is if there are no known risk factors?

MR. LEE: Objection to form.

THE WITNESS: Yes. As a reasonable clinician would conclude that if there are risk factors present, that there would be a potential contributing cause and they wouldn't make that diagnosis of idiopathic when there's an obvious potential risk factor present that would increase the risk of kidney cancer.

BY MS. SPRAYREGEN:

Q So turning to Mr. Downs' report again.

Can you please turn to page 18? It's close to where we were.

And you write -- and this is the first full paragraph: "Mr. Downs was slightly overweight when he was diagnosed with kidney cancer, so he was only at a minimally increased risk due to his weight."

Did I read that correctly?

A I just want to make sure. So --

Q Page 18.

A Page 18.

Q The first full paragraph.

A Where it says: "Mr. Downs was a short-term smoker"?

Q I have "Mr. Downs was slightly overweight."
A That's interesting. Are you using yours or her copy?
MR. LEE: Mine is the same as yours.
MS. SPRAYREGEN: What?
MR. LEE: Mine is the same as yours. For what it's worth.
THE WITNESS: So, yes, it says: "Mr. Downs was a short-term smoker."
BY MS. SPRAYREGEN:
Q No, no. Mine says -- maybe mine is wrong.
It says: "Mr. Downs was slightly overweight when he was diagnosed with kidney cancer so he was only at a minimally increased risk due to his weight."
A Can I see your version? Because our two are the same.
MS. SPRAYREGEN: Can we go off the record?
THE VIDEOGRAPHER: The time is 12:39 p.m., and we are going off the record.
(Off the record from 12:39 to 12:40 p.m.)
THE VIDEOGRAPHER: The time is 12:40 p.m. We are going back on the record.
Please proceed, Counsel.
MS. SPRAYREGEN: Sure.

BY MS. SPRAYREGEN:

Q So the second full paragraph on page 18 reads -- in all copies: "Mr. Downs was slightly overweight when he was diagnosed with kidney cancer. So he was only at a minimally increased risk due to his weight."

Did I read that correctly?

A Yes, you did.

Q How did you determine that Mr. Downs' weight was only minimally -- only minimally increased his risk of kidney cancer?

A Based on a review of that analysis of his risk factors for kidney cancer.

Weight being -- particularly weight, where his BMI was only 27, it's only minimally increased risk at that BMI.

If you're talking about BMIs that are 32 and above, then there's a much more significantly increased risk, and it's actually, for every -- for every point of BMI over the overweight category, the risk increases, I won't say exponentially, but significantly increase risk the higher the BMI over 30.

Q And then on page 8 of the report, but we're coming back to page 18, so keep page 18 handy.

Let me know when you're there.

A I'm there.

Q Under Section C: "Non-Camp Lejeune Personal Risk

Factor Analysis for Mr. Downs' kidney Cancer.

The first Number 1, I guess, paragraph, if you will, the second sentence says: "He was 82 years old when he developed kidney cancer. So he was at slight increased risk due to his age. However, age is not thought of as a significant risk factor for the causation of kidney cancer."

Did I read that correctly?

A You did, yes.

Q And then turning back to page 18.

A Okay.

Q The second full paragraph on page 18 reads: "Mr. Downs was a short-term smoker who smoked about a pack a day for five years based on various reports in his medical record and deposition. There are medical records indicating that Mr. Downs may have smoked for 15 years, but Mr. Downs disputes the accuracy of those records. Mr. Downs quit smoking approximately 50 years before his kidney cancer diagnosis if his deposition testimony is accurate. Thus, the length of smoking cessation largely eliminated his risk of kidney cancer. This would be true even with an assumption he smoked for 15 years and quit 40 years before his kidney cancer diagnosis."

Did I read that correctly?

A Yes, you did.

Q So you'd agree that it's your opinion that smoking

is less of a risk factor for Mr. Downs because it has been a long time since Mr. Downs smoked?

A Yes. I would say his smoking cessation eliminated his risk for kidney cancer.

Q That was my next question.

Is it your position that a long period of time since an individual quit smoking reduces the risk of developing kidney cancer, or that all else equal, that individual still has a higher risk than someone who has never smoked?

A I know that there are some physicians on your side, Counselor, that have stated that there's a risk, but the meta-analysis and systematic that I reviewed yesterday regarding smoking says that at 48 to 50 years of smoking cessation that the risk is well below zero -- or well below 1, 1 being no risk. Well below 1. Approaching .5 in terms of risk ratio.

So it's -- well, it's definitely approaching being protective. Being -- having smoking cessation for that duration of time.

Q What meta-analysis are you referring to?

A It's in my list of kidney cancer references.

Q So is it on --

A It's a new study that I pulled up a couple of days ago.

Q So it's not on your list --
A No.
Q -- of materials considered?
A It's not -- it's on my list, which we can add.
Q Do you know the name of the author?
A You know, I'm blanking on the name. I'm sorry. But it's definitely in the backpack, so I'm able to give you a copy.
Q I understand. But just so that I understand.
The meta-analysis that you're referring to says that someone who smoked but quit a very long time ago does not have an increased risk of kidney cancer over someone who never smoked; is that what you're saying?
A Well, no. I don't think -- I don't think you can get to the point that -- you can't go below zero risk. So the person whose smoking cessation is 50 years is approaching that zero risk.
And there's a chart in the -- in the meta-analysis article that talks about smoking, you know, with 20, 30, 40 and higher pack-years of smoking on the positive side is markedly increased risk. And likewise, the reverse is true, 40, 50 years of smoking cessation, the risk approaches zero.
Q If increased time or a very long time since ceasing exposure to tobacco reduces its risk, would you agree that the same logic applies to time since last

exposure to TCE, PCE, benzene, and vinyl chloride?

A No, I don't necessarily, because I think the genotoxic nature of these chemicals; the TCE, PCE, and vinyl chloride, and benzene, they result in genetic damage.

And, you know, over time as that exposure continued, one allele gets damaged, then a second allele gets damaged, and so you get a cumulative exposure.

And over time, you know, especially as they age and they have other risk factors, that's what triggers the carcinogenesis, and so I -- I don't say that -- I don't agree that it's the same.

Q And you're saying that the genotoxic nature of chemicals that -- withdrawn.

Could the court reporter please read back to me the question -- the answer that Mr. Mallon -- Dr. Mallon, excuse me, I'm so sorry, just gave.

(Madam Court Reporter read back the previously answered question.)

BY MS. SPRAYREGEN:

Q So is it your argument that the genotoxic nature of TCE, PCE, benzene, and perhaps vinyl chloride, that results in genetic damage, is different from the genotoxic nature of exposure to cigarette smoke?

A So is one worse than the other? I'd say they're -- because of the nature of the carcinogenesis, and

these exposures working together, in combination, in an additive fashion, I think that those chemicals pose a greater risk.

Q There are a lot of toxic chemicals in cigarettes, aren't there?

A A lot of toxic chemicals.

Q But you think the fact that TCE, PCE, benzene, and vinyl chloride work together, provides more of a risk 50 years later than smoking does; is that your -- than the -- than the many chemicals involved in cigarettes?

MR. LEE: Objection to form.

MS. SPRAYREGEN: I will rephrase.

Yeah. Can the court reporter read back the last answer and my mangled question?

(Madam Court Reporter read back the prior question and the answer to the question.)

BY MS. SPRAYREGEN:

Q So is it your argument that because there were many different chemicals in the water at Camp Lejeune the -- the fact that Mr. Downs was exposed long ago does not decrease his risk from the water?

A Well, I haven't seen any studies that looked at the diminution of risk for these carcinogenic chemicals causing kidney cancer, but I have seen recent studies that showed that the risk of kidney cancer from smoking does

diminish over time.

So, I mean, that's my personal knowledge base.

Q So it's not about the mixture of chemicals. It's the fact that you've read studies that talk about smoking decreasing, but you haven't read any studies talking about the long time since exposure to chemicals diminishing the risk from that exposure?

A That's correct. Also, these chemicals we know are known carcinogens with -- with the carcinogenic risk potential. And while there may be several chemicals in cigarette smoke, they're not all carcinogens.

Q But there are many carcinogens in cigarette smoke, aren't there?

A I'm sorry. Was that a question?

Q Yeah. That was a question.

Are there many carcinogens in cigarette smoke?

A I don't know the exact number. Would you happen to know?

Q I don't.

Do you know of any studies showing the time since exposure to Camp Lejeune does not affect risk?

A You know, I've been doing this for almost 10 years, and I haven't seen a study that demonstrates that the risk has decreased over time.

Q Do you know of any studies that consider time

since exposure to any VOCs and whether or not that affects risk?

A Could you repeat the question? I'm not sure I heard you correctly.

Q No, no, that's okay.

Did you consider any studies showing that time things exposure to VOCs do not affect risk?

A I haven't seen any articles.

Q Did you consider my studies showing that VOCs remain in the body longer than carcinogens from cigarettes?

A You know, the -- I've read over 200 articles relating to exposure in kidney cancer risk, and I don't recall a single article that talks about risk diminishing over time.

Q Is there a reason to believe, on a biological basis, that times since smoking cigarettes, since -- withdrawn.

Is there a reason to believe, on a biological basis, that time since cessation of smoking cigarettes would be different from times since last exposure to VOCs?

A I think you just asked me that question, and my answer at the time was the risk from the TVOCs at Camp Lejeune were greater than that posed from cigarette smoke.

Q So I want to turn to Ms. Tukes' report. Can you go to page 12? And the second, I guess, number, it's

numbered Number 2, under Section E: "Non-Camp Lejeune Personal Risk Factor Analysis" for Ms. Tukes' kidney cancer reads: "Ms. Tukes is African American so she was at a small increased risk of kidney cancer due to her ethnicity compared to Caucasian women in the general population."

Did I read that correctly?

A Yes.

Q Can you turn to page 17? And the very last paragraph, which continues onto the next page reads: "Ms. Tukes was slightly overweight when she was diagnosed with kidney cancer. She would have been at slightly increased risk due to her weight. However, this is usually not a significant risk factor and Ms. Tukes was not significantly overweight. Ms. Tukes' weight fluctuated over time, yet she continued to be diagnosed with new primary RCC tumors. This suggests her slightly increased weight prior to and following her first diagnosis of kidney cancer in 2010 was not relevant as a cause of that cancer. Otherwise, she would have had a reduction in the development of cancer when her BMI or weight changed."

Did I read that correctly?

A Yes. Because her weight went down after she was diagnosed. I mean, not a lot, but it went down some, but yet she still continued developing kidney cancer. That's why that was written there.

Q Is it your opinion that a person's risk of developing kidney cancer diminishes after they've lost weight? Withdrawn. Take that back. I'm withdrawing that.

Actually, if a person was once overweight but then they lost weight, would you say that their risk of developing kidney cancer is lower after they've lost weight than it was when they had -- were overweight?

A Well, given -- given where Ms. Tukes was in terms of her body mass index, if she lost a pound or two, her risk fact wouldn't go down substantially because it wasn't high in the first place.

So, I mean, you know, a pound or two here or there isn't going to diminish her risk much more than what it was at her current weight.

Q So basically you think that her weight was just a low grade risk factor?

A Exactly. And Dr. Stadler thought the same thing.

Q I'm just trying to -- I know. And you also think the fact that she was African American is kind of a low grade risk factor, if you will?

A Yes, I believe that's true.

Q Or a low level risk factor is a better way of saying it, I think?

A Low level.

Q Yeah.

A Yes.

Q If Ms. Tukes' exposure were lower than what you believe it to be, would you consider her exposure to be a lower level risk factor of her kidney cancer?

A If her -- if her exposure was lower, I would say that her risk would be lower, yes.

Q But you don't consider her current -- withdrawn.

As you understand the exposure data, you don't consider her risk to be low; is that correct, from exposure? I'll strike that, and actually not -- try to do a non-mangled question.

As you understand Ms. Tukes' exposure to the water at Camp Lejeune, you don't consider that to be a low level risk factor; is that correct?

A I consider Ms. Tukes' exposure at Camp Lejeune to be a significant risk factor that caused her cancer.

Q Is it your opinion -- withdrawn.

It's your opinion that Ms. Tukes' kidney cancer was not hereditary, right?

A Yes. I believe that she had genetic changes that increased her genetic predisposition for and development of kidney cancer.

She was more susceptible because of those genetic changes, and even though she was exposed to levels that Dr. Bove found were at increased risk for kidney cancer, I think

she was more susceptible and that contributed to her kidney cancer development at an earlier age.

Q So I want to just look at one thing on page 18 of the Tukes report.

A I'm there.

Q So you write in the middle of the page: "Ms. Tukes did not have a confirmed history of kidney cancer. It was not confirmed her mother had a primary kidney cancer rather than metastatic disease. Ms. Tukes tested negatively for a genetic predisposition to kidney cancer. This makes it very highly unlikely that her kidney cancer was hereditary."

Did I read that correct?

A Yes, you did.

Q I'm turning to page 19. And is it also your opinion that Ms. Tukes' two genetic variants of PMS2 and SMARCA4, and I quote: Made her more susceptible to cancer following carcinogenic exposure?

A Yes.

Q Do you rely on Dr. Irving Allen's report to reach that conclusion?

A Yes. And also I think Dr. Garbarini spoke to that to some extent, not to the extent Dr. Allen did.

Q Do you have an independent opinion of whether Ms. Tukes was genetically more susceptible to developing

kidney cancer due to environmental exposures?

A I do have an independent opinion that Ms. Tukes was more susceptible to kidney cancer because of her exposures at Camp Lejeune, yes.

Q No, no. What I asked was: Do you have an independent opinion about whether Ms. Tukes was genetically more susceptible to developing kidney cancer?

A So, could you clarify your question, Counselor, because I think what we're trying to get at is two separate things.

You're asking if she has hereditary kidney cancer, and I'm saying her genetic variability, because of those two variants, increased her susceptibility, which is two different things.

Q I guess my question is: Independent of reading Dr. Irving Allen and the other doctor's opinion that you referenced, do you have an opinion about whether Ms. Tukes was genetically more susceptible to developing kidney cancer after exposure?

A So I rely on Dr. Allen's report for forming my opinion regarding her genetic susceptibility. I haven't seen any reason to doubt the veracity of what Dr. Allen reported, and I think that Dr. Allen was very clear in his explanation of why Ms. Tukes was more genetically susceptible to exposure.

She, Ms. Tukes, was tested for hereditary genetic changes not once, but twice, through a panel of genetic testing that included not only 30 genes initially, but subsequent -- subsequent testing expanded a much larger number of genetic alterations, and both times the test came back negative.

So there's nothing in the record to suggest that she had a heritable genetic condition.

I know that Dr. Stadler alluded to her potentially having a papillary hereditary genetic condition, but my understanding is testing of the MET gene, which was done on Ms. Tukes, was negative and that ruled out papillary hereditary carcinoma in her case.

MS. SPRAYREGEN: How long have we been on the record? No, no. Since the last break. And not the mini break when we couldn't figure out if we were reading from the same report. About 50 minutes.

Do you want to take a break? Now is a good time --

MR. LEE: Do you want to go off the record?

MS. SPRAYREGEN: Yeah. Can we go off the record?

THE VIDEOGRAPHER: The time is 1:09 p.m. We are going off the record.

(Noon recess taken from 1:09 to 1:59 p.m.)

THE VIDEOGRAPHER: The time is 1:59 p.m. We are going back on the record.

Please proceed, Counsel.

BY MS. SPRAYREGEN:

Q Before we broke for lunch, we were talking about Dr. Allen, right?

A Yes.

Q So I just want to clarify one thing.

Do you have an independent opinion about whether Ms. Tukes was genetically more susceptible to developing kidney cancer due to environmental exposures, or do you rely on Dr. Allen for this conclusion?

A Well, let me say this, Counselor. I think that Ms. Tukes' exposures to environmental contaminants at Camp Lejeune was sufficient, in and of itself, to cause her kidney cancer, and even if you take her genetics out of the picture, she was at risk and developed kidney cancer because of her environmental exposures.

Q Do you rely on Dr. Allen's report for the conclusion or for the opinion, I should say, that Ms. Tukes was genetically more susceptible to developing kidney cancer?

A Yes. That was the basis of my determination regarding her genetic susceptibility.

Q You also discussed in your report that Ms. Tukes

underwent a genetic assessment in 2018, right?

A Yes.

Q And that this test evaluated a panel of 30 genes, right?

A And subsequent genes, yes.

Q So the test was limited to a panel of 30 genes; is that right?

A The -- she had more than one panel that was tested. The first panel consisted of 30.

There was subsequent genetic testing that included more genes that were looked at.

Q Would you agree that there are over 20,000 genes in the human body?

A I think that she was tested for those specific genes that are linked to kidney cancer in people.

Q Would you agree that there are 20,000 or more genes in the human body?

A Yes.

Q Would you agree that even if -- where there were no reportable genetic variants -- strike that.

Would you agree that even were there no reportable genetic variants -- strike that.

Would you agree that even where no reportable genetic variants were identified by these diagnostic tests, a patient may still be at risk for RCC based on other

factors?

A Yes.

Q And that one of those other factors could be genetic causes not evaluated by these tests?

A I think it's a hypothetical. I know that the thoroughness or completeness of the genetic testing that Ms. Tukes underwent, not once but twice, she received the full panel of genetic tests that was -- that was current at the time for genetic testing.

In other words, everything that is known she was tested for and tested negative.

MS. SPRAYREGEN: I'm going to introduce Exhibit Number 10.

(Mallon Exhibit 10 marked for identification.)

BY MS. SPRAYREGEN:

Q Have you seen these records before?

A I don't know that I have.

Q These are the results of Ms. Tukes' genetic testing, and it looks like the Bates numbers have not been copied. So this might be hard.

But can you turn to the page that is 31 at the bottom. It's the pagination of the U --

A Yes. Page 31. Okay.

Q And so one of the tests she took was by Invitae;

is that right?

A Yes.

Q So had you seen the disclaimer noting that -- and this is on page 31, it's hard to read. "This individual may still be at risk for certain medical conditions based on other factors, including genetic causes not evaluated with this test."

A Where does it say: "Not evaluated with these test"?

Q It's the -- it's hard to read, I agree.

It's the second -- there's only three lines.

A Yeah, I see it. Yeah, okay.

Q The second line.

A I see that, yes.

Q "Genetic causes not evaluated with this test."

Do you see that?

A Mm-hmm.

Q So would you agree that even the test had a disclaimer that there are possible causes that the test doesn't evaluate for?

A This says: "No reportable genetic variants were identified by this analysis." So I agree with that.

Individuals may still be at risk for certain medical conditions based on other factors, such as family history, genetic causes, not evaluated by this test or other

environmental influences.

So what I'm not aware of, Counselor, is what other causes -- what other genetic causes not evaluated by this test you're referring to, because to my knowledge, this test tested for all known environmental -- all known genetic causes of kidney cancer.

Q Genetic causes that we do not know yet?

A Well, that's conjecture, or you're projecting in the future what future tests may be available to identify genetic conditions, but the current state of knowledge is they tested for everything they knew that was possible.

Q I agree. But are you agreeing or are you disagreeing with the possibility that there are genes out there that influence whether someone has a genetic predisposition or increased risk for kidney cancer that we don't know of yet?

MR. LEE: Objection to form.

THE WITNESS: In answer to your question, I looked up the testing. I looked up the likelihood that there could be a possible genetic test not accounted for here, and it is mathematically a very slim chance of this not picking up a genetic condition, I think, as I recall, it was one in a thousand, maybe even smaller risk, that something like this would occur.

Q Are you talking about the test making a mistake or

or the possibility that there are genes out there that we don't know of yet?

A I was talking about a mistake that the possibility exists that there might be one in a thousand chance that they missed a genetic variant that --

Q So you're talking about a mistake in the test --

A Correct.

Q -- not a possibility of a gene?

A Correct.

Q -- that we don't know of that causes --

A Because I can't -- I can't offer an opinion on a hypothetical that hasn't happened and we don't know exists. You're talking about something that may develop in the future, yeah, I can't comment on that.

MS. SPRAYREGEN: I'm going to introduce Exhibit Number 11.

(Mallon Exhibit 11 marked for identification.)

THE WITNESS: I like these clean copies.

BY MS. SPRAYREGEN:

Q Are you familiar with the NCCN Guidelines?

A First time I've seen them, Counsel.

Q Are you aware that the NCCN Guidelines are commonly used by physicians in treating cancer?

A As the title would imply, yes.

Q This is the first time you've seen them, but you are aware that they were commonly used by physicians in treating cancer?

A Well, it specifically says "Practice Guidelines." In other words, clinical practitioners in oncology, presumably for treating kidney cancer. So the title gives me that information.

Q But you weren't aware that these guidelines are commonly used by physicians in treating kidney cancer prior to seeing this exhibit; is that correct?

MR. LEE: Objection to form.

THE WITNESS: That is correct.

BY MS. SPRAYREGEN:

Q Are you aware that the NCCN Guidelines allow for a diagnosis of hereditary RCC syndrome based on clinical phenotype alone even in the absence of an identified pathogenic variant?

A I see that as -- that it is a consideration. It's not an indication of that.

These are the criteria for future genetic risk evaluation for hereditary RCC syndromes. They're criteria that providers need to consider for whether or not a patient should be tested for genetic, you know, hereditary genetic changes.

Q For the record, the witness is reading from page

bearing the Bates Number HERED-RCC-1. And also for the record, the highlighting is by me.

And the part of the record that you were just referring to, can you turn back to that?

A Yes, I'm on it.

Q Okay. And it says: "An individual with RCC with any of the following criteria: Diagnoses under the age of 46 years, bilateral or multifocal tumors in greater than one or second-degree relative with RCC."

And those people are individuals with RCC with any of the following criteria -- withdrawn.

And those people are people who should be evaluated for genetic risk; is that correct?

A Yes.

Q So --

A If I may. I would also add that Ms. Tukes doesn't meet that criteria.

Q It says: "With any of the following criteria."

Does she meet none of those criteria?

A Well, I think she meets a couple. She meets the first two of the three.

Q So by --

A We haven't established that she has a first or second-degree relative with kidney cancer.

Q I understand. But you would agree that Ms. Tukes

was diagnosed under the age of 46?

A Yes.

Q And you would agree that she has bilateral and multifocal tumors; is that correct?

A That is correct.

Q And were you aware that bilateral cancer is a clinical feature consistent with an inherited nature?

A I understand that that's a consideration that, you know, clinicians and geneticists think about when they're thinking of hereditary kidney cancer.

Q Were you aware of that before reading?

A Before seeing this, yes.

Q Were you aware of that before -- were you aware of that when you were forming your opinion on Ms. Tukes?

A Yes.

Q And were you aware when you were forming your opinion on Ms. Tukes that multifocal cancer is a clinical feature consistent with an inherited nature?

A I'm sorry, would you repeat the question?

Q Were you aware, when you were forming your opinion, that multifocal cancer is a clinical feature consistent with an inherited nature?

MR. LEE: Objection to form. You can answer.

THE WITNESS: Do you have another way of wording that question, Counselor?

BY MS. SPRAYREGEN:

Q Are you aware that having multiple tumors is a clinical feature that is consistent with an inherited nature of kidney cancer?

A I'm aware, and I was aware at the time that having bilateral kidney cancer and multifocal cancer of different types was a criteria for testing someone for hereditary kidney cancer.

Q So is it your position that these clinical features, the bilateral multifocal cancer and that she was diagnosed at a young age, which are suggestive of hereditary RCC, should be disregarded if there is no pathogenic mutation found?

MR. LEE: Objection to form.

THE WITNESS: Yes. In answer to your question, that's exactly what I'm saying.

She was tested not once, but twice, for those genetic mutations that would identify someone as having a hereditary kidney cancer syndrome, and she tested negative for the MET gene, which is associated with the papillary renal cell carcinoma.

And so to my mind, that ruled out a hereditary cancer as a -- as a likelihood.

BY MS. SPRAYREGEN:

Q Do you know if the NCCN recommends that clinical

features be disregarded in interpreting genetic test results?

A So these -- if I may, these are clinical practice guidelines. I used to write and oversee the development of clinical practice guidelines for providers in the military, specifically the Army, related to preventive and occupational medicine and other clinical practice guidelines as well.

So what they are, they're guidelines, they're meant to be advisory in nature and not meant to be directive in any way. They allow variation in practice.

And so these are consideration that providers should take into account when they're managing their patients.

This is not something that they have to go step by step and say: "Well, they meet this, they meet this, and they meet this, and I have to do this testing."

Q Do you know of any authority that allows a genetic test to outweigh clinical presentations?

A I think the genetic testing provides guidance to a provider that is another piece of information that providers should consider when considering whether there's a hereditary cancer present.

The fact that she doesn't have a first or second-degree relative, and the fact that her genetic

testing is negative, are both supportive of Ms. Tukes not having a hereditary kidney cancer.

Q You mentioned earlier today that you received records on Mr. Downs' cancer that are recent; is that correct?

A Yes.

Q Did you receive those records before or after submitting or drafting your report?

A After.

Q Is there anything in those records that changes any opinions you have had in your report?

A No. If anything, it strengthens my opinion in regards to Mr. Downs and his kidney cancer.

Q What opinion does it strengthen?

A Well, I think that the opinion of Dr. Stadler was very helpful in terms of recognizing that some of the potential risk factors that I identified, he, in fact, pointed to and said these represent minimal potential risks, and so it led me to conclude that the environmental exposures are a stronger component of his kidney cancer than those other risk factors.

Q You were just talking about Dr. Stadler's report, and I was asking you if the medical records that you received from Mr. -- of Mr. Downs' treatment and care changed your opinions in the report that you submitted on

February 7th, right?

A Well, my understanding, Dr. Stadler's report is included in the package of new information that I received post writing my report. So I didn't draw a distinction between the 4,000 pages of medical records and the report of Dr. Stadler.

Q So limiting this question to just the 4,000 pages of medical records that you reviewed after writing your report, okay, did those 4,000 pages of medical records change any of your opinions in your report?

A No.

Q You based your opinions, in part, on Dr. Reynolds' report of 6, 2025; is that correct?

A Could you be more specific?

Q To the extent you assert that exposure to contaminated water at Camp Lejeune caused Mr. Downs and Mrs. Tukes' cancer, is that opinion based, in part, on Dr. Reynolds' exposure calculations?

A Yes.

Q And Dr. Reynolds based her calculations of Mr. Downs and Ms. Tukes' cumulative exposure to the contaminants of concern on the ATSDR's water model; is that right?

A That's correct.

Q Are you aware of the statement in the ATSDR's

water modeling reports that their models are not accurate enough to be determined -- to determine an individual's health effects?

A I have read that statement, yes.

Q You have read that statement?

A I'm sorry?

Q I said you have read that statement?

A Yes.

Q So why did you rely on Dr. Reynolds' opinions in light of the fact ATSDR said its water models were not accurate enough to estimate -- were not accurate enough estimates to be used to determine an individual's health effects?

A I don't know that it said it couldn't be used to determine health effects. Could you show me where it says that?

Q Sure.

A I'm getting ahead of myself. Are you going to mark this as an exhibit?

MS. SPRAYREGEN: Yeah. This is -- for the record, I am introducing Exhibit Number 12.

(Mallon Exhibit 12 marked for identification.)

MS. SPRAYREGEN: And also for the record, Exhibit Number 12 are -- is the parts of the "Analysis

of Groundwater Flow, Contaminant Fate and Transport, and Distribution of Drinking Water at Tarawa Terrace and Vicinity, U.S. Marine Corps Base Camp Lejeune, North Carolina; Historical Reconstruction and Present Day Conditions. Chapter A: Summary of Findings."

And what I've introduced is the Q&A, as well as the Table of Contents.

BY MS. SPRAYREGEN:

Q So if you could turn to page, I believe it is A98 at the end. There is some highlighting on it, and the highlighting is marked.

Do you see the highlighted sentence that says: "The ATSDR's exposure assessment cannot be used to determine whether you or your family suffered any health effects as a result of past exposure to PCE contaminated drinking water at Camp Lejeune."

Do you see that?

A I do see that.

Q Were you aware of that statement before you had written your report?

A Was I aware of this particular statement? That's a good question.

I didn't read this particular Q&A when I looked over the ATSDR reports. So, no, I wasn't aware of that.

Q You say "this particular statement." Are you

aware of statements that are similar to that?

A No.

Q If ATSDR's water modeling results were incorrect, would Dr. Reynolds' calculations be impacted?

MR. LEE: Objection to form.

MS. SPRAYREGEN: It's a hypothetical.

THE WITNESS: Well, I disagree with your presumption that his calculations are incorrect.

This doesn't say that. This says to an individual who's reading this Q&A, you can't -- you can't use this particular document to predict what health effects might occur.

BY MS. SPRAYREGEN:

Q No, no, I understand. I've moved on from the document. I'm asking you a hypothetical question.

Don't -- the document is irrelevant to my question.

A Okay. So if you'll rephrase your question.

Q Of course. I will say it again. Now that you know that this is a hypothetical.

If the ATSDR's water modeling results were incorrect, would Dr. Reynolds' calculations be impacted?

A Could you specify how you think they might be incorrect?

Q Forget how they might be incorrect. I'm asking

you about a hypothetical, but I will --

A Because it's important the nature of the error before I can comment on how the hypothetical might, in fact, play out.

Q So the hypothetical is not about the facts, but I am just asking you, and I will ask you a different question.

If one could show that the actual concentrations were 15 percent lower than the values in the ATSDR's water models calculated, Dr. Reynolds' exposure calculations would be too high in that instance, right?

MR. LEE: Object to the form of the question to the extent you appear to be trying to mislead the witness concerning this hypothetical, but go ahead.

MS. SPRAYREGEN: I'm really not. Just to be clear. I'll try and restate the question.

THE WITNESS: I appreciate it.

MS. SPRAYREGEN: I'm not trying to mislead. I'm asking in my hypothetical.

BY MS. SPRAYREGEN:

Q So if it were the case that the actual concentrations of the water at Camp Lejeune were 15 percent lower than the values the ATSDR's water model calculated, then Dr. Reynolds' exposure calculations would also be too high; is that right?

MR. LEE: Objection to form. You can answer,

if you understand the question.

THE WITNESS: I think I understand the question. I would say that the water modeling was based on 1982 and 1985 water testing. And they back-extrapolated to come back with monthly exposure levels based on those real-world data, and so I don't support the contention that the water models are 15 percent off.

They're just -- they're exposure models based on real water data. They crunched the numbers based on what ATSDR recommended as the approach for water modeling in conjunction with EPA.

And so unless you can identify some error that was inconsistent with appropriate methods that ATSDR used, I have to go on the facts that I know in the case, which are the water modeling was based on factual data and what that tells me is there are risks related --

MR. LEE: I'm sorry. Allow him to finish his response.

THE WITNESS: If I may, Counselor.

That those exposure levels caused the cancer for both Mr. Downs and Ms. Tukes.

BY MS. SPRAYREGEN:

Q Okay. I'm not questioning the ATSDR water model

right now. I'm asking a hypothetical. Not about whether or not it's accurate. I'm not asking you to evaluate whether it's accurate, and I'm not -- I'm not positing that it's inaccurate.

I'm asking you a hypothetical question, which is: If the model were inaccurate or if -- forget inaccurate. Forget the model.

If the actual concentrations were lower than the values the ATSDR's water models calculated in Dr. Reynolds' exposure calculations based on those -- that model would also be too high; is that right?

MR. LEE: Objection to the form of the question.

THE WITNESS: So, I don't know that I'm conveying the information directly enough.

Specifically, if I reduced Mr. Downs' and Ms. Tukes' exposure levels by 15 percent, her levels of exposure and Mr. Downs' levels of exposures are still high enough to meet what Bove identified as significant risk of kidney cancer in both individuals with a 15 percent reduction in the current levels following your hypothetical.

MS. SPRAYREGEN: That wasn't my question.

MR. LEE: Objection to the form of the question. I don't know whether that was a question you

were asking now or not, but.

MS. SPRAYREGEN: So I'm going to go ahead and introduce Exhibit 13.

(Mallon Exhibit 13 marked for identification.)

BY MS. SPRAYREGEN:

Q So Exhibit Number 13 is Dr. Reynolds' report, the appendices relevant to Mr. Downs and Mrs. Tukes.

And then because some of the charts were very, very hard to read, I created a Word document with --

A I did the same thing.

Q -- with copied charts, and so --

A Yeah.

Q -- they're just copies but made bigger.

A So I'm sorry. I don't see Ms. Tukes' report. I see Downs.

Q There's no appendix on there?

A That was -- that was in the stapled version, so it's there.

Q Right. In the stapled version, yes.

I only blew up Mr. Downs' -- I blew up one of Ms. Tukes' charts and several of Mr. Downs' charts because I found these two charts easier to see.

A I have those.

Q Okay.

A So this page, this summary page for Downs; is that in the attached version?

Q Yes. The summary pages are not in the attached version because they were able to be read.

I only tried to blow up things that I couldn't see because --

A I understand.

Q To the extent I could, I only did that because I found those charts literally impossible to see, and when I'm viewing them on my computer, I blow them up. And so for the deposition that wasn't an option, so I did the best foreground I could.

A I have that information, so I'm good.

Q Okay. Great.

So I take it you've seen the charts in Dr. Reynolds' report before?

A Yes. Mm-hmm.

Q And looking at your report, your Downs report, stick with that for now. On page 16 to 17.

A So Downs, 16 and 17?

Q Yes.

A All right. I'm there.

Q The chart in your report -- in your Downs report, on page 16 to 17, is copied from Dr. Reynolds' chart; is that correct?

A Yes.
Q And this is under -- in Dr. Reynolds' report, this is under Appendix 6, the first page; is that correct?
Dr. Reynolds' report. Not the blown-up version of it.
A Which page in the report?
Q Dr. Reynolds' report, Appendix 6.
A Oh, I see.
Q After her report. It's the first page after all the writing.
A Gotcha. So that would be this?
Q Yes. That is the same chart that is in your report; is that correct?
A Yes.
Q And Dr. Reynolds provided several different --
A This got cut off.
MR. LEE: Mine is cut off as well.
THE WITNESS: But I can see that it's similar. It's three out of four. It's cut off like mid-page. It's missing Chart 4.
MS. SPRAYREGEN: Sorry. We can look at the chart on page 16. It says 17 of your report.
MR. LEE: I only see part of Chart 3 as well, but fair enough.
MS. SPRAYREGEN: I think he's already said

that it's the same chart. So we can look at the chart on page 3. I don't know what the printer was doing.

THE WITNESS: Okay. 16 and 17 are the same, sounds good.

BY MS. SPRAYREGEN:

Q So Dr. Reynolds provided several different summed exposure totals; is that right?

A Yes.

Q And the very first column is the contaminants of concern in this case; is that right?

A Yes.

Q And then the first column with numbers, I guess you could say, the next column over shows the cumulative ug/L months, which is cumulative microgram per liter months; is that right?

A Yes.

Q What do you understand cumulative ug/L months to be?

A Cumulative ug/L per liter months represents a summation of the monthly contaminant concentrations that Mr. Downs and Ms. Tukes were exposed to over the time that they were present at Camp Lejeune.

Q Would you -- I would just add one word to that, and is that mean. It's the summation of the mean monthly concentrations; is that right?

A That makes sense, yes.
Q Have you ever -- strike that.
So you would agree that Dr. Reynolds calculated this value by adding the mean monthly concentrations of contaminants in drinking water for each month that Plaintiff was exposed; is that right?
A That's correct. Based on the supporting documentation.
Q Have you ever seen exposure assessments presented in terms of cumulative ug/L months before?
A Yes.
Q I know the answer, but I've got to ask. Where?
A Well, Dr. Bove, in his reports. And also in several of the published articles leading up to the preparation of the report. Several of the authors refer to exposure levels in microgram per liter months and microgram per liter years.
Q So my question to you is which articles, other than the Bove articles, have examined exposure presented in cumulative ug/L months?
A Let me take a minute here and find a couple for you. Andrew in particular.
Q Andrew what?
A Andrew 2022.
Q And what is the title?

A You're asking me to -- that's a stretch, Counselor. It's looking at exposures to environmental contaminants. And I forget which -- oh, that was a drinking water study, so.

Q Okay. So that's one. And that looked at exposure in cumulative ug/L months; is that what you're saying?

A Yes.

Q Any others?

A He looked at range of exposures. He did it by percentile. Less than 50, 50 to 75, and greater than 75. And looked at microgram per liters.

Q Microgram per liter months?

A I have here written down micrograms per liter. I don't necessarily say that it's months, but if you take the duration that if someone was exposed and multiply it by the microgram per liter, you're going to come up with a microgram per liter month metric that multiplied over like 12 years, or however long that they were at the site, you can come up a total microgram per liter.

Q Any others beside Andrew have looked at cumulative exposure in terms of microgram per liter months?

A Yeah. Let me find some for you. We've already talked -- spoken about Dr. Bove -- or Bove's exposure metrics.

Well, as I sit here, that's Bove. So I'm just

looking at my short list of studies. I can just come up with Andrew as we speak right this moment, but if given the opportunity, I'm sure I can find a few more studies that would support it.

Q So you rely on Dr. Reynolds' calculations, basically the cumulative microgram per liter months, or ug/L-M, which is column 1 that we've just been discussing, of your Downs' report, to calculate cumulative -- cumulative exposure; is that right?

A In microgram per liter months, that's correct. But there's another metric that we haven't spoken about, and that's total micrograms, or total milligrams of exposure that can be derived from the cumulative consumption total. So Charts 2, 3, and 4.

Q I'm going to get right to that, but before I do, would you say the same for Mr. and Mrs. Tukes as Mr. Downs, that you rely on Dr. Reynolds' calculations in the first column of the chart that we've been discussing?

A Yes. I used those figures to come up with the risk related to kidney cancer for both Mr. Downs and Ms. Tukes.

Q And you just mentioned Dr. Reynolds' Charts 1 through 4; is that right?

A Yes.

Q Do you know how Dr. Reynolds used the numbers in

the first column, microgram per liter months, to get to the numbers in Chart 1?

A Well, her assumption was that there was one liter of water consumption for residential exposure and one liter for workplace exposure, and so depending on the particular individual, it was an assumption really as a format for developing the exposure models that are represented in Charts 2, 3, and 4.

So that was a template. The chart 1 was a template for developing the detailed risk assessment for -- detailed exposure assessment for Charts 2, 3, and -- or, yeah, 2, 3, and 4.

Q And what was your understanding of how Chart 2 differs from Chart 1?

A Well, so at the title at the top of -- at the top of the table, Chart 2 specifically says: "ATSDR RME with proportional work/resident time."

So that's a split of time spent at home and time spent at work, and so that was proportionally developed. So if you spend eight hours at work and 12 hours or 24 hours at home, depending on your work situation, she apportioned risk proportionately to how much time you spent at each location.

So -- and she had -- she had assumptions from the military in terms of the field manuals, gave assumptions for water consumption, and I think ATSDR had some models for how

much water was consumed, both at work and at residence.

And so she integrated the two to come up with an estimated RME calculation, which is essentially a maximum anticipated exposure based on the consumption that were based from those manuals.

The next column over, the CTE, is meant to be the central tendency estimate of exposure based on proportionately work resident titles.

Q What is your understanding of the difference between Charts 2 and Chart 3?

A So one is -- one is a near maximal consumption. And the other is the average consumption.

Q And what is your understanding of Chart 4?

A Chart 4 -- I can't read the title for that.

Q Let's look at the report. It's on page 16.

A On page 16. So this was the exposure estimate based on the deposition description of how much was consumed and where it was consumed from Ms. Tukes and -- or Mr. Downs.

So Chart 2 and 3 are proportionately estimates based on water modeling essentially from the ATSDR and the Army field manuals, or Marine Corps field manuals.

Chart 4 is what they actually said they consumed.

Q And for PCE, there is a --

A Is that a T or a P?

Q P. I'm sorry.

For PCE, not TCE, PCE, there are two models. There is the tech flow and P model, and the MT3M -- MT3DMS model, excuse me; is that right?

A Excuse me. Yes. Two models.

Q Do you know what the difference is between these two models?

A I do.

Q Excellent. What is it?

A Well, the -- the MT3DMS model is a probabilistic exposure estimate based on drinking water concentrations and the tech flow model is a similar model, but it's based on contaminants in the soil above the groundwater, and it's a time fade analysis that looks at how long it takes from contamination into or, you know, from point of discharge to the time where it actually makes its way into the groundwater. So that's the difference between the two.

Q So is it your belief that -- I'm sorry. Withdrawn.

Could the court reporter please read back what was just said?

(Madam Court Reporter read back the requested portion of the record.)

BY MS. SPRAYREGEN:

Q So the tech flow model is a time fade analysis,

but the MT3DMS model is not?

A Well, they're both time fade analyses. It's just that one works with the drinking water portion and one is above the drinking water. That's my simple understanding.

Q I wanted to make sure that you didn't think only one was a time fade analysis.

Have you ever seen these models before drafting your report in this case?

A No. These models are discussed in Morris Maslia's work in the ATSDR report and in his report and his deposition.

So I've seen that information before. Long before I wrote this report, I had the opportunity to read his process analysis for how he developed the models and put the risk estimates together.

MS. SPRAYREGEN: I'm sorry. Again, could the court reporter read back what was just said?

(Madam Court Reporter read back the requested portion of the record.)

BY MS. SPRAYREGEN:

Q So I'm just trying to understand. You had or had not seen these models before writing your specific causation report?

A I have.

Q You have. Okay. I thought you had testified that

you had not?

A (Shook head in response.)

Q Okay. Maybe I misheard you earlier.

A It's okay.

Q Got it. Substantively, what do you understand the cumulative consumption metric used in Charts 1, 2, 3, and 4 to be?

MR. LEE: Objection. Form. You can answer.

THE WITNESS: Could you repeat the question, Counselor? You can tell it's getting later in the day.

BY MS. SPRAYREGEN:

Q What -- what is your, in plain words, understanding of the cumulative consumption as used in Charts 1 through 4 in the Reynolds' model?

A Which column is that?

Q It's the title column: "Cumulative Consumption."

I'm turning back to page 13. Sorry, excuse me. Turning back to page 16, in the blue highlight, it says: "Cumulative Consumption" under Charts 1, 2, 3, and 4.

Do you see that?

A Yes.

Q And what do you understand that cumulative consumption to be measuring?

MR. LEE: Objection to form first. You can answer the question again.

THE WITNESS: As I read this, the title at the top of the column: "Cumulative Consumption," is an estimate that Dr. Reynolds put together based on the concentration times the -- the time, the number of days, if you will. So number of days times the concentration, to come up with a microgram level of contaminant as it relates to reach of the contaminants of concern at Camp Lejeune.

BY MS. SPRAYREGEN:

Q So what are the units of all the numbers?

A So --

Q -- in the columns in Charts 1, 2, 3, and 4?

A So as I read across, like with TCE, it's after the first column. So Chart 1, 2, 3, and 4, in those columns, those numbers represent milligrams of TCE consumed over the duration of time that each Ms. Tukes and Mr. Downs, during the time they were at Camp Lejeune.

And this is done for not only TCE, but for Hadnot Point and then again for Tarawa Terrace.

MS. SPRAYREGEN: Again, can the reporter read back what was just written -- what was just said?

(Madam Court Reporter read back the answer to the previously asked question.)

MR. LEE: When you get to a good point, Sharon, we'll take another break. It's been about an

hour.

THE VIDEOGRAPHER: The time is 2:54 p.m. We're going off the record.

(Recess taken from 2:54 to 3:06 p.m.)

THE VIDEOGRAPHER: The time is 3:06 p.m. We're going back on the record.

Please proceed, Counsel.

BY MS. SPRAYREGEN:

Q Dr. Mallon, you just said before we went on the record that you have a correction to make.

What is that correction?

A Well, the court reporter read back that I said milligrams. And, in fact, both are correct. The 7,866 micrograms is 7.86 milligrams. So I was just pointing out that the equivalent, if you will, 8,000 micrograms and 8 milligrams.

Q So your testimony is that the numbers in the core are micrograms of the VOC consumed over the time that the plaintiff was at Camp Lejeune; is that correct?

A It says micrograms, but it's equivalent to the milligrams that I just spoke about.

Q And this is a total mass number; is that correct?

A Total mass, that's correct.

Q Have you ever calculated a number like that before?

A Yes.

Q And have you ever seen a mass number of micrograms or milligrams total mass used to determine exposure?

A Yes.

Q Where?

A Well, Aschengrau, for one, reports milligrams of exposure.

Q Other than Aschengrau?

A Well, hold on. Let me look. Do a quick search here for you. See if there's others.

So Andrew reports micrograms per liter. And Moore reports parts per billion, which is essentially micrograms per liter converted to parts per billion. So Callahan reports 25 to 280 parts per million.

So parts per million is a concentration. So it's a mass divided by the volume.

Q So all the numbers that you've just given me, ug/L, ug/L, or micrograms per liter, which is the same as parts per billion and parts per million, are all concentrations; is that right?

A Parts per billion, yes. They imply concentration.

Q Which is different from the total mass; is that right?

A But easily derivable from a concentration.

Q Right. But you need additional information to get

from one to the other?

A The -- you may need additional information.

Well, let me back up and -- could you repeat that question again? Because Andrew, for example, and Aschengrau, prevent -- or present information -- well, Andrew is a concentration, but Aschengrau reports a mass, milligrams of exposure.

Q I agree that Aschengrau reports a mass of milligrams of exposure. I was asking if any other of the studies that you know of reported mass of milligrams of exposure?

A Yes. There are others. I just don't cite them in these crib notes.

Q As of right now, the only study that you can think of that reports exposure in a mass is Aschengrau; is that correct?

A The one definitive study that I can point my finger at right this second, yes.

Q And have you ever personally calculated this number?

A Quite often we've dealt with parts per billion, parts per million as concentrations. So mass means some volume of air or liquid as a concentration.

That's mostly what we dealt with. This is for Army studies.

Q When determining cumulative exposure, do you agree that it is important to consider exposure frequency and duration in addition to amount?

A I would say it's important to incorporate dose and duration over time. So, yes.

I will say that -- could you repeat your question?

Q When determining cumulative exposure, do you agree that it is important to consider exposure frequency and duration in addition to the amount?

A Yes. And I would say in this case, Dr. Reynolds did do that, because she looked at the period over which Ms. Downs and Mr. -- Mr. Downs and Ms. Tukes were exposed. So she took the concen -- she took the concentrations that they were exposed to and converted it from a concentration to a mass volume, a mass figure.

So she incorporated that into her calculation.

Q Are you aware of whether Dr. Reynolds' use of total mass of ingested chemicals, which we've just been discussing and which are the results of the Charts 1 through 4, is standard exposure -- is a standard exposure metric in risk assessment?

MR. LEE: Objection to form of the question.

MS. SPRAYREGEN: I can clean it up.

BY MS. SPRAYREGEN:

Q Are you aware of whether Dr. Reynolds used a total

mass of ingested chemicals is a standard exposure metric in risk assessment?

A Well, Dr. Reynolds complied with standard practice as it relates to risk assessment, as she stated in her report.

I -- I think that her report is consistent with the standard practice in her profession, and I rely on those figures in coming up with an exposure estimate for both Ms. Tukes and Mr. Downs and have nothing further to add.

Q How do you know whether it's standard practice?

A She outlined in her report exactly what she did, and she applied the standard -- the standards in her profession, which say to use ATSDR's modeling, and to -- and to apply to the other standards as it relates to risk assessment.

So we can go to her report, and I can show you where she says that.

Q My question was if you're not an expert in risk assessment, how do you know that what she did is standard practice in the field of risk assessment?

A I have nothing to show the opposite is true. So I'm assuming that she complies with the standards that she identified when she completed her report.

Q Would you agree that the most reliable epidemiological studies provide cumulative exposure

estimates in ppm years, which is an inhalation exposure concentration times the number of years exposed, and ppb month, or ppb year, which is ingested water concentration times the number of months or years exposed?

MR. LEE: Objection to form.

THE WITNESS: Let me say this. I think that I have nothing to doubt the quality of the work that she presented.

I think she provided exposure estimates that were consistent with and to be used in conjunction with Dr. Bove's environmental assessment, and so to the extent that she provided metrics that we could use to compare and come up with an exposure risk made my job easier.

Once I knew what the cumulative concentration was for -- for both these Plaintiffs, for each of those chemicals of concern, it made my job easier to go to Bove Table 6 and Bove Table 7 and come up a hazard ratio that showed that their exposures contributed to their kidney cancer, so I appreciate the fact that she tailored her analysis to provide data that I could use to complete my job.

BY MS. SPRAYREGEN:

Q So can you turn to page 16 of the Downs report?

A I'm there.

Q I'm sorry, I said 16. I meant 17. I'm sorry. I was also on 16.

So the second sentence on that page reads: "This effect was amplified by the fact that according to Dr. Reynolds, Mr. Downs would have ingested between 23,000 ppb and 59,000 ppb of PCE."

Did I read that correctly?

A You did.

Q Would you agree that the unit there is not ppb, as we've been discussing? I'll withdraw that.

The numbers 23,000 ppb and 59,000 ppb, is that from the chart that we were looking at that was copied from Dr. Reynolds' report on pages 16 to 17 of your report under the row "Tarawa Terrace PCE" using the tech flow MP model?

A So I see the tech flow model and I see the MT3 model. And the 23,000 ppb relates to the MT3. So, yes, I see that.

Q Actually, the 23,000 that I'm looking at refers to Chart 3 under the PCE tech flow model; is that correct? It might be easier if you turn back to page 16.

A Okay.

Q So you see --

A Which column?

Q So I'm looking at the PCE tech flow model and Chart 3, and that's where I see the 23,000 coming from?

A For Hadnot Point. Or for Tarawa Terrace.
Q Tarawa Terrace, yes.
A Yes.
Q And I believe that was the 23,000 that you were referring to on page 17 of your report; is that right?
A Yes.
Q And my understanding of the 59,000 that you were referring to on page 17 of your report is the Chart 2 of the tech flow model for PCE; is that right?
A Yes.
Q And my question was: Isn't the proper unit for that not ppb?
MR. LEE: Objection. Form.
THE WITNESS: So I think you're right, Counselor. I think that it should be -- it should have been milligrams instead of ppb.
As we discussed previously this afternoon.
BY MS. SPRAYREGEN:
Q And then my other question for you is: Why did you choose to use the number from the tech flow model rather than the MT3DMS model?
A We were trying to be more conservative and not overstate the risks.
Q Did anyone ask you to use the information from the --

A No.

MR. LEE: When you get in this line of discussion, to the extent it involves conversation with counsel, I'm going to ask you not to answer the question, but thus far, you can go ahead and continue responding.

THE WITNESS: Okay. Thank you.

MS. SPRAYREGEN: Let me rephrase.

BY MS. SPRAYREGEN:

Q Was that a determination you made to use the tech flow model rather than the MT3DMS yourself?

A Yes.

Q And just for the record, can you turn to page 11 of the Tukes report?

A I'm there.

Q The last paragraph at the very bottom of the page says: "Using the tech flow model and assuming the ingestion statistics in Ms. Tukes' deposition, Ms. Tukes was exposed to 58,000 -- 5,875 ppb of PCE through ingestion alone."

After I corrected myself, did I read that correctly?

A I think so. Which line are you reading from?

Q The very bottom -- the page 11 of the Tukes report.

A Under --

Q Under the chart.
A Under Chart 4.
Q Under the chart, under the chart there's some writing.
A Right. This corresponds to that. That's where I was just trying to make sure I was tracking where that came from.
Q So you see where it says --
A Yes, I do.
Q Okay. And the 5,875 is using the deposition estimates and the PCE tech flow model; is that correct?
A Yes.
Q And would you, again, agree that the units are not ppb?
A It is correct. They should be micrograms.
Q I think this is my last unit question. Can you go back to the Downs report?
A Yes.
Q And please turn to page 12.
A 12.
Q So the very last sentence, the very last section of the page, do you see where it says: "Section 7. Mr. Downs' exposure at Camp Lejeune"?
A Yes.
Q And what is written is: "Mr. Downs lived at

Tarawa Terrace and worked at Hadnot Point. Mr. Downs had exposure to the following concentrations in the water during his time at Camp Lejeune in his 589 days on base.
43 microgram liter TCE. 939 microgram liter PCE. And 122 microgram liter of vinyl chloride at Tarawa Terrace. He was exposed to approximately 282 microgram liter TCE at Hadnot Point."

Did I read that correctly?

A Yeah, you did.

MR. LEE: Objection.

BY MS. SPRAYREGEN:

Q Would you agree that the numbers that I just read, 43, 939, 122, and 282, are cumulative exposures measured in microgram per liter months and not concentrations?

The chart is on page 16.

Oh, no, it's not. Excuse me. My bad. I misdirected you.

A They're on page 16.

Q Oh, I was right.

A And so in answer to your question, it is a concentration that's reported, the cumulative concentration, micrograms per liter months. So what's missing is the month part there.

Q So you're not offering the opinion that the chemicals of concern interact synergistically; is that

correct?

A I believe I state in my report that I felt the -- the chemicals of concern created an additive effect, but not a synergistic effect.

Q Turning to page 15 of the Downs report.

You described Mr. Downs' exposure to toxins in the water at Camp Lejeune as, quote: Substantial; is that right?

A Yes.

Q And if you turn to page 10 to 11 of the Tukes report, you also describe Mrs. Tukes' exposure to the toxins in the water at Camp Lejeune as substantial; is that correct?

A Which page for Ms. Tukes?

Q 10 to 11.

A And where is that sentence, on page 10?

Q So the section is titled: "D. Ms. Tukes' Exposure to the Water at Camp Lejeune was Substantial."

A Yes, I can read that.

Q And then on the next page, the first full -- excuse me. The second paragraph.

The second sentence says: "I will not repeat the deposition testimony of Ms. Tukes, other than to say that her exposure to the water at Camp Lejeune was substantial in terms of the amount of exposure, see prior total chemicals

exposed, the duration of exposure, 19 months' time period, the frequency of exposure, see description of how often she was exposed to the chemicals daily, and the intensity of exposure, see levels in the water of Camp Lejeune during the time period Ms. Tukes was present."

Did I read that correctly?

A Yes.

Q So would you agree with me that you described both Ms. Tukes' and Mr. Downs' exposure to the toxins in the water at Camp Lejeune as substantial?

A Yes, mm-hmm.

Q You don't quantify substantial exposure; is that correct?

A I don't specifically state that in the report, no.

Q Do you have an opinion of what amount of exposure constitutes substantial exposure?

A I know that in terms of the criteria for causation, if the exposure wasn't causal, there could be a second tier, where the exposure was high enough to be considered substantial.

You know, the fact is that her -- Ms. Tukes' exposures were substantial and sufficient to be causal, so it was both.

Q My question is: Your reports do not identify a threshold amount over which an exposure becomes, quote:

Substantial, do they?

MR. LEE: Objection to form. You can answer.

MS. SPRAYREGEN: I can rephrase.

BY MS. SPRAYREGEN:

Q Is it correct to say that your reports do not identify a threshold amount over which an exposure becomes substantial?

A My reports do not offer any level or threshold to identify substantial, that's correct.

Q Do you have an opinion on the level of exposure to TCE necessary to cause kidney cancer?

A Yes. I believe that the levels identified in Dr. Bove's 2014 and 2024 reports identify levels that are sufficient to cause cancer.

Further, there are other -- there are other papers that I cite in my report that provide additional information regarding TCE exposure and kidney cancer.

ATSDR identifies exposures with monotonic exposure, a dose-response curve.

The Mandel study 1995, the Callahan study in 2019, when they identify bromine, and in Callahan with PCE, but, let's see, Purdue identifies PCE and TCE levels that were sufficient to cause cancer.

Aschengrau, as we talked about.

MS. SPRAYREGEN: Could the reporter back the

answer?

(Madam Court Reporter read back the answer to the previously asked question.)

BY MS. SPRAYREGEN:

Q Dr. Mallon, you said you were reading from the wrong page. Do you want to retract what you just said?

A To some extent, I need to revise what I said.

The ATSDR study in 2018 does show, both for PCE and TCE, that the levels of exposure were sufficient to cause cancer.

And then the other studies I quoted, the EPA 2020 study, meta-analysis, the meta summary risk, identified 41 studies that looked at exposure to TCE and found an elevated meta relative risk of 1.22, with a significant odds ratio of 1.07 to 1.38.

So there were other studies as well, the Scott 2011 study. 1.27 with significant odds ratio, or a confidence interval for both low and high exposure. Karami in 2012, same thing. Chirag Patel.

Those are higher risk exposures, but there are other lower -- lower levels of exposure that were also statistically significant and had dose-response effects that were positive.

Q So are you saying that all the studies that you just identified show levels of a contaminant that are

sufficient to cause cancer?

A Yes. And so there are several studies that show concentrations in the water, and -- for example, Parker Rosen, with their 1981 study at Woburn, which is another ecologic study, showed levels of TCE that are consistent with what Dr. Bove showed in his study at 267 parts per billion, and TCE at 21 parts per billion, and they found an increased risk for kidney cancer.

And likewise, Andrew showed levels on the same order of magnitude of zero to 25 for the low risk category. A medium level risk of 15 to 75 percentile showed an elevated risk of 1.47 with a significant confidence interval, .9 to 2.4. That was for the five-year. Also the 10-year and the 15-year studies where they evaluated latency period.

MS. SPRAYREGEN: I'm going to go ahead and introduce the next exhibit. What number are we on?

What I'm going to hand you is exhibit number -- no, that's the wrong one. We don't want that one.

THE WITNESS: Do you want that one back?

MS. SPRAYREGEN: I think so. Give me one second. Did I hand it to you already?

THE WITNESS: No. You didn't give it -- you gave it to Randy.

MS. SPRAYREGEN: There should be a supplement involved. There's no supplement there?

THE WITNESS: I've seen the supplement, Counsel. There's supplemental tables to that.

MS. SPRAYREGEN: Right.

THE WITNESS: So is this the 2014 study?

MS. SPRAYREGEN: I have the report and the supplement here. I'm not sure what was just handed to you.

So I think maybe give that back to me, and I will hand out the actual 2014 study with supplement.

THE WITNESS: Yeah. This is missing the supplement.

MS. SPRAYREGEN: Yeah. This is it. Could we go off the record? I'm sorry.

THE VIDEOGRAPHER: The time is 3:37 p.m. We are going off the record.

(Off the record from 3:37 to 3:39 p.m.)

THE VIDEOGRAPHER: The time is 3:39 p.m. We're going back on the record.

Please proceed, Counsel.

(Mallon Exhibit 14 marked for identification.)

BY MS. SPRAYREGEN:

Q So Exhibit Number 14, is that what we're on? Is

the Bove 2014a study; is that correct?

A That's what I'm looking at.

Q Excellent. And can you turn to Table 6, which you've referenced a couple times in your report, it's on page 10.

A I'm there, Counsel.

Q What level, according -- withdrawn.

What level do you believe is sufficient to increase one risks of -- withdrawn.

The first row of numbers are about PCE; is that correct?

A Correct.

Q And what level of PCE do you believe or do you opine is sufficient to cause kidney cancer based on this table?

A I notice there are no hazard ratios related to these particular levels, so you can't look at this table necessarily and surmise what the hazard is related to each of these individual exposure levels.

And that's why Dr. Bove provided Table 7 to be used in conjunction with Table 6.

So, for example, Mr. Downs had a high level of PCE exposure in the thousand microgram per liter month level of exposure. That would put him in the high exposure category.

So I looked there to inform where I should look in

the Table 7, to figure out what his kidney cancer risk is related to his PCE level exposure.

In looking at the high level exposure, reading down in Table 7 for PCE, reading across, I'm looking at a hazard ratio of 1.59.

Q I understand all that, but I'm asking you not to think about Mr. Downs. Okay? We will talk about Mr. Downs in a little bit.

You have argued that there, or you just told me earlier in this deposition that the Bove 2014 identifies a level of exposure to TCE and PCE that is sufficient to cause kidney cancer; is that correct?

A That's correct.

Q And so I'm asking you, what is the level, according to this paper, that is sufficient to cause kidney cancer?

A So based on -- based on the levels that Dr. Bove identified in Table 6, there is a risk of kidney cancer that corresponds to each of those levels of exposure; low, medium and high, identified in Table 7.

Q Okay.

A So I would say any exposure identified, or low, medium, and high exposure on Table 6, is associated with kidney cancer risk.

Q Okay. So looking Table 6 for low exposures, the

levels associated with that are greater than 1 microgram per liters to 155-microgram per liters, and that's for PCE.

Did I read that correctly?

A Yes, you did.

Q Is it your argument that anything greater than one level, 1 microgram per liter month of PCE is sufficient to cause kidney cancer?

A It is my opinion that levels higher than 1, in the range between 1 and 155 micrograms per liter months, can be sufficient to cause kidney cancer, that's correct.

Q But is it your contention that 1 microgram per liter month of exposure to PCE is sufficient to cause kidney cancer?

MR. LEE: Objection to the form of the question. You can answer it again.

THE WITNESS: Would you repeat the question, Counsel?

MS. SPRAYREGEN: Sure.

BY MS. SPRAYREGEN:

Q So the lowest value in the low exposure category for PCE is 1.0001 microgram per liter months, or something to that effect; is that correct?

A If you -- yeah, potentially you could go that low.

Q Is it your opinion that just anything over 1 microgram per liter month is sufficient to cause -- to cause

kidney cancer?

MR. LEE: Objection.

THE WITNESS: I think dealing with the real world exposures that Ms. Tukes had, for example, where her level of exposure is in the low exposure category, it's towards the higher end of that, but I believe that those exposures were sufficient to cause her kidney cancer, that's correct.

BY MS. SPRAYREGEN:

Q I'm not asking about Ms. Tukes. I'm asking about what is the lowest level of exposure to PCE that is sufficient to cause kidney cancer?

A You're asking me to define a threshold and that's not my area of expertise to identify thresholds.

My area of expertise is relating exposures that Mrs. Tukes had and her likelihood of developing kidney cancer.

Q So you think that anyone who had an exposure between 1 microgram per liter months and 155 microgram per liter months of PCE is at an increased risk of being diagnosed with kidney cancer based on their time at Camp Lejeune; is that your opinion?

A It's my opinion that the levels that Dr. Bove found in the exposure in drinking water at Camp Lejeune were sufficient to cause kidney cancer, and there are other

publications in the medical literature which show comparable levels of exposure to what was occurring at Camp Lejeune that do show people who develop kidney cancer at those concentration levels. And so it's not only Dr. Bove, but the other medical literature from Andrew, and others, also say the same thing.

Q Do you have an opinion on what the lowest level of concentration amount of TCE is that is sufficient to cause kidney cancer?

MR. LEE: Objection. Asked and answered. You can answer it again.

BY MS. SPRAYREGEN:

Q You can answer it again. I actually didn't ask about TCS.

A If she can read back the -- my answer, because that's the one I'm going to stick with.

(Madam Court Reporter read back the previously answered question.)

BY MS. SPRAYREGEN:

Q So are you saying you don't have an opinion, further than what you've already said?

A Correct.

Q So going to the Downs report on page 16.

A I'm there.

Q I'm sorry, I got the page wrong. Going to the

Tukes report -- I did get that page wrong.

Sorry, I did. I was in the wrong report, wrong page. Please turn to page 10. I now know where I am.

A Same report?

Q Downs report, page 10. I'm back on track.

A I'm there.

Q Excellent. Paragraph A, you write: "Mr. Downs' exposure to PCE was approximately 939 ug/L months during his time at Tarawa Terrace;" is that right?

Withdrawn.

Did I read that correctly?

A You did.

Q And that number, 939 microgram per liter months of PCE comes from Dr. Reynolds' chart; is that correct?

A That is correct.

Q And if you -- and then on page 11, in the middle of the page, under "TCE Exposure and Kidney Cancer Risks;" do you see that?

A Which section, I'm sorry.

Q Number 3. Section 3 on page 11.

A 3.

Q Downs report, page 11.

A 3A, B, C, or D?

Q On page 11. I only have -- oh, I was going to read from -- I'm sorry. I was going to read from A.

You write: "Mr. Downs had TCE exposure at Tarawa Terrace that ranged from 1 to 3-microgram per liter months and this totaled 43 ug/L months over 19 months at Tarawa Terrace. Mr. Downs also had 9 to 19 ug/L months of TCE exposure at Hadnot Point, which totaled 282 ug/L months cumulative exposure while at Hadnot Point for 19 months."

Did I read that correctly?

A You did.

Q And these numbers come from Dr. Reynolds' charts; is that right?

A I believe so.

Q The first column?

A Yeah, I see that.

Q I'm doing my best not to interrupt you, and for the court reporter's sake, will you please not interrupt me? I understand that you know where I'm going.

Thank you.

A I'll do my best.

Q I feel you. I really do.

And on page 12, under Section 4A, you write: "Mr. Downs' monthly exposure to vinyl chloride ranged from 5 to 8 ug/L over 19 months of exposure and the total cumulative vinyl chloride exposure was 122 ug/L months."

Did I read that correctly?

A Yes.

Q And again, these numbers come from Dr. Reynolds' chart, the first column; is that correct?

A Yes.

Q And finally on page 9 of Mr. Down's report, you write: "Mr. Downs' TVOC exposures at Camp" -- strike that.

You write --

A You're on paragraph B?

Q Yeah, I'm on paragraph B.

"The total volume -- the total volatile organic compounds, TVOCs levels in the drinking water at Tarawa Terrace on Camp Lejeune when Mr. Downs was present ranged from 31.7 micrograms per liter ug/L to 64.4 ug/L for the tech flow model. Mr. Downs' total volatile organic compound TVOC exposure amounted to 1104 ug/L month exposure to TVOC during his 19 months at Tarawa Terrace."

Did I read that correctly?

A Yes.

Q And that number, 1104 ug/L-M, comes from adding the TCE exposure and -- withdrawn.

And that number comes from adding -- yes, the TCE exposure at Hadnot Point and the -- all the --

A Down the first column.

Q Down the first column.

A Sorry.

Q Yes. Is that correct? Withdrawn.

Adding up the TCE exposure at Hadnot Point -- let me start over.

That number comes from adding TCE of 43 and PCE of 939 and VCE of 122; is that right?

A What was the number that we started with?

Q 1104.

A It's close. My math is telling me it's slightly more than 100, but it's within the ballpark.

Q We can put a pin in that number and we'll do that after the break.

So putting aside the TVOC numbers, the -- certainly the PCE, TCE, and vinyl chloride numbers that you referenced in your report, all come from Dr. Reynolds' chart of cumulative ug/L months, that first column; is that right?

A Yes.

Q And then this is where you wanted to go earlier. You compare those numbers to the numbers in Dr. Bove's paper, the 2014a paper; is that correct?

A Yes.

Q And you determined that Mr. Downs is in the high category of exposure based on Table 6; is that correct?

A For the PCE level.

Q For the PCE, yes.

A You're correct.

Q Are you waiting -- was more coming? Or was that a

"yes," and that was the end of it?

A I believe I said you're correct.

Q Okay. I thought you were saying something else.

And your determination that Mr. Downs was in the low level of exposure to TCE is based on looking at Dr. Reynolds' numbers of 43-microgram per liter months at Hadnot Point and 282-microgram per liter months at Tarawa Terrace, and then going to the Bove Table 6, and seeing that that number is somewhere between 1 and 3,100-microgram per liter months; is that right?

A Yes.

Q And then -- strike that.

And then on -- please turn to page 10 of your downs report.

A I'm there.

Q Paragraph B says: "Based on Bove, et al. 2014a, Table 7, the high exposure category for cumulative PCE exposure was 1.59, 95 percent confidence interval, 0.66 to 3.86. So Mr. Downs had a 5" -- excuse me. "A 1.59-fold elevated risk of kidney cancer due to his PCE exposure."

After I corrected myself; did I read that correctly?

A Yes.

Q Would you agree that using the conventional definition of statistical significance, the hazard ratio of

1.59 is not statistically significant?

A I recall in our general causation deposition discussion, we've reviewed this point before, and both from the Savitz report and deposition, and the Madigan report and rebuttal, we identified that the -- you can't make a dichotomous decision regarding statistical significance because you have to look at the full range of data within the confidence interval and look at where the true risk estimate is going to be based on your review of the complete set of data that's within the bounds of the confidence interval.

And as I look at the data there for Mr. Downs and where it is, there is a portion of the confidence interval that is below 1, but the bulk of the data going from 1 to 386, the bulk meaning 85 percent or more of the data points, which represent the true value of where the point estimate is, it's much more likely that the true value is above 1 and between 1.0 and 3.6, then it would be between 1 and .66.

Q Would you agree that the lower boundary of the confidence interval is less than 1 and the upper boundary of the confidence interval is greater than 1?

A That's correct.

Q And looking at Table 7, this is where you got your 1.59 hazard ratio from; is that correct?

A That is correct.

Q And for the record, that 1.59 hazard ratio is for high exposure of kidney cancer in -- for PCE, high exposure of kidney cancer; is that correct?

A That is correct.

Q And then when you look at medium exposure of kidney cancer, you see that the hazard ratio is 1.82; is that correct?

A That is correct.

Q And so the hazard ratio of 1.82 for the medium category is, in fact, higher than the hazard ratio for the high category; is that correct?

A That is correct.

Q You would normally expect someone who had higher exposure to have a higher risk than someone who had a medium exposure; is that correct?

A Well, there can be a number of reasons why a high exposure risk ratio might be lower than the medium level exposure, depending on the characteristics of the people that are in the high exposure group.

There can be any number of explanations why the risk ratio would be lower in that high exposure category, not the least of which would be a healthy veteran or a healthy marine effect.

Also, there may be potentially some exposure misclassification that would -- that would reduce the risk

ratio from the high exposure category.

Q Does the fact that the hazard ratio for the medium category is higher than the hazard ratio for the high category give you pause in claiming that Mr. Downs had a 1.59-fold elevated risk of kidney cancer due to his PCE exposure?

A It does not. That 1.59 risk ratio provides assurance that my medical opinion is accurate and correct, that he had a markedly elevated risk of developing kidney cancer based on his exposure.

MS. SPRAYREGEN: How long have we been on the record?

MR. LEE: 55.

MS. SPRAYREGEN: Let's go off the record and take a break.

THE VIDEOGRAPHER: The time is 4:04 p.m. We are going off the record.

(Recess taken from 4:04 to 4:18 p.m.)

THE VIDEOGRAPHER: The time is 4:18 p.m. We're going back on the record.

Please proceed, Counsel.

BY MS. SPRAYREGEN:

Q Dr. Mallon, can you please take out the Tukes report and turn to page 14?

A Too much paperwork here. It got it. Page 14 you

said?

Q Yeah. The Bove 2014a, please.

Okay. You state on page 14, under Section 2, the second sentence: "Ms. Tukes' exposure to PCE was 82.85 ug/L per liter months which falls in the middle of the low exposure category."

Did I read that correctly?

A Yes.

Q And the number, 82.85 ug/L per liter months comes from Dr. Reynolds's chart; is that correct, the first column?

A Yes.

Q And when you say "falls in the middle of the low exposure category," you are referring to the Bove Table 6 low exposure for PCE; is that correct?

A Yes.

Q And then turn to page 16, please.

A Okay.

Q You say in paragraph A that the -- "Ms. Tukes had exposure to TCE at Tarawa Terrace for 13 months. The levels of TCE at Tarawa Terrace during that time were less than 1 microgram per liter month; is that correct? Withdrawn.

Did I read that correctly?

A You did read it correctly. Let me just double-check my figures.

I've got -- using Kelly Reynolds records, 3 micrograms per liter months. So that might be a typo.

Kelly Reynolds' charts are right here in the full report, so I should have double-checked that. Page 11, 3.65.

Q That is the cumulative exposure from both Hadnot Point and Tarawa Terrace; is that correct?

A That's correct. 3.65.

Q And am I correct to say that all of that comes from Tarawa Terrace? If you look at page 9 to 10 of your report, you have the mean monthly exposures at Tarawa Terrace only, and if you look at the TCE column, they all sum to 3.65?

A That's correct.

Q And you did not compare Ms. Tukes' exposures to the charts in Bove 2014a; is that correct?

I can make that more specific.

You did not compare Ms. Tukes' TCE exposure to the charts in Bove 2014a; is that correct?

A Well, I'm looking right here at the comparison, Counsel.

Q That would place her in the low category for TCE; is that correct?

A That's correct. I think for Ms. Tukes, if I may add a little supplemental.

For Ms. Tukes, her greatest risk was related to her benzene exposure, where she had 16 micrograms per liter months, which puts her in the middle exposure category.

Q And all of that was from Hadnot Point; is that correct?

A Yes.

Q And so -- you would put Ms. Tukes in the medium category for benzene, the low category for vinyl chloride?

A All the others.

Q The low category for TCE and the low category for PCE; is that correct?

A Yes.

Q And we're discussing the cumulative exposure in the first column of the chart, the Reynolds' chart; is that correct?

A Yes.

Q And as we discussed, this is the -- adding up the mean monthly concentrations for -- is that -- withdrawn.

As we discussed, these numbers are the cumulative -- withdrawn.

Strike that.

You used the sum of the mean monthly concentrations expressed in ug/L months for each chemical; is that right?

A Yes.

Q These cumulative exposure numbers do not take into account any time that Mr. Downs, if we're looking at him for his TCE exposure, was not at Hadnot Point; would that be right?

A Let me jump back to that report. It's whatever Dr. Reynolds said in her reply.

Q So my understanding is that Dr. Reynolds' Charts 1 through 4 take into account, or attempt to take into account, time spent away from each area of the base; is that also your understanding?

A Yes.

Q But her calculation of the total microgram per liter months does not take into account time spent away from the area of the base if the person was on that area for -- withdrawn.

Did not take into account -- I'll take that back.

But her calculations of cumulative exposure, based on microgram per liter months, do not take into account time spent away from the base; is that also your understanding?

A What you said is correct. Recognizing that Mr. Downs, in his testimony, said even though he was on leave, he never left Camp Lejeune. He took leave at his home address, and so there would be no reason for Ms., you know, for Dr. Reynolds to make any adjustment in his exposure assessment because he was present at Camp Lejeune

the entire time.

Q I understand. But he was present at Hadnot Point for that period of time and not at -- I'm sorry -- withdrawn.

But he was present at -- I'll start again. It's getting late for all of us.

During the time that he was on leave, Mr. Down has testified that he was at Tarawa Terrace, but that he wasn't at Hadnot Point; is that correct?

MR. LEE: Objection to form. You may answer.

THE WITNESS: Well, so Hadnot Point has not only a work location, but there are other facilities located on Hadnot Point where Mr. Downs had to go from time to time.

I believe, if I'm not mistaken, the recreational facilities was there. The base hospital was there.

And so regardless of the fact he wasn't working there, the base recreation was there, you know, and other things; the movie theater, the PX and commissary. So there were times that he was going there even though he was not working there.

BY MS. SPRAYREGEN:

Q Understood. But in Charts 1 through 4, Dr. Reynolds does not include any exposure for the time that

Mr. Downs was on leave and at Tarawa Terrace or Hadnot Point; is that correct?

A We could go to her supplemental tables and look to see if she adjusted for that, you know, the fact is that we might not have been at work for eight hours, but there were so many other things at Hadnot Point that she didn't need to make a correction because he was there doing other things.

Q So I can show you in the supplemental charts that she has a zero for the weeks that he was at -- zero under the Hadnot Point column for the weeks he was on leave, and a 1 for the Tarawa Terrace column for the weeks that he was on leave.

So does that sound right to you?

A Yes. So she did some adjustment for that.

Q So, right. But my point is: She adjusted for that in the Charts 1 through 4, but not in the summation of the mean monthly concentrations of the months that Mr. Downs was on base; is that right?

A I think that's -- I think what you said is correct. But I think what she did was incorrect.

I think she -- she adjusted for exposure in her mind she didn't perceive was occurring. When in actuality it didn't require adjustment, so she overcorrected and was more conservative than she needed to be in terms of the exposure assessment.

Q I'm not asking you to evaluate what was right or wrong about what Dr. Reynolds did. I'm just asking you to say if you agree with me that she took account of where Mr. Downs was on base in Charts 1 through 4, but not in her summation of the mean monthly concentrations?

MR. LEE: Object to the form of the question and the commentary. You can answer, if you understand.

THE WITNESS: I don't understand what you said.

MR. LEE: I object to the form of the question and her commentary, but I said you can answer her question if you understand it.

THE WITNESS: So could you repeat the question, Counselor? I want to be accurate in my answer.

BY MS. SPRAYREGEN:

Q My understanding is, Dr. Reynolds, when calculating cumulative consumption in Charts 1 through 4, took it from the fact that Mr. Downs or assumed, I should say, that Mr. Downs was not at Hadnot Point during the weeks that he was on leave; is that correct?

A Yes.

Q But when she was adding up the mean monthly concentrations for all the time that Mr. Downs was on base, she did not make any adjustments for his time away from

Hadnot Point; is that correct?

A Yes. And the reason she didn't make any corrections is was he was there on base. So there was no need for a correction.

Q And Dr. Reynolds also did not take into account in the summation of the mean monthly concentrations that Mr. Downs was only on base for 14 days for the month of February 20 -- 1960; is that correct?

A That sounds correct, yes. Well, you know, I'm remembering those tables. And I know she identified that he was only there for half the time -- half the month, but I'm not remembering the exact details of that cumulative exposure month whether she adjusted that figure or not, I don't recall.

Q So my understanding is she took account and adjusted for it in Charts 1 through 4, but not in the summation of the months, the cumulative, the mean monthly concentrations for the months that he was on base; does that sound right to you?

A I think that's reasonable. Recognizing that -- except for that first period of time where he just wasn't there. He wasn't there on base. He didn't show up until midway through the month. The rest of it would be accurate.

Q Do you know whether Dr. Reynolds used the same methodology as Dr. Bove to calculate ug/L months for Marines

at Camp Lejeune?

A I believe there's a similar methodology because he relied on Morris, and so his exposure modeling, ATSDR modeling, so a similar kind of reconciling of exposure concentration for a period of time to come up with the exposure levels he did.

Q I'm going to repeat my question.

Do you know whether Dr. Reynolds used the same methodology as Dr. Bove to calculate ug/L months for Marines at Camp Lejeune?

A Conjecture on my part, but I believe they used the same methodology, yes.

Q You believe they do?

A Yes.

Q All right. Can you go to 2014a on page 3, please?

A What number?

MR. LEE: Exhibit 14. Exhibit Number 14.

THE WITNESS: So that's Bove?

MS. SPRAYREGEN: Yeah. Turn to Bove 2014a.

THE WITNESS: Okay. And what page?

MS. SPRAYREGEN: Page 3.

THE WITNESS: Page 3. You're pushing me. Late in the afternoon. I've been relying on my separate chart.

Yeah, I got it. Page 3?

MR. SPRAYREGEN: Yeah, page 3.

So on page 3, the second column, the first full paragraph, let me know when you're there.

THE WITNESS: Second column --

MS. SPRAYREGEN: Second column.

THE WITNESS: First full paragraph.

BY MS. SPRAYREGEN:

Q First full paragraph. Second sentence: "Each individual was assigned estimated monthly average contaminant concentrations in the drinking water system serving the individual's residence during the period of residence."

Does that -- did I read that correctly?

A Yes.

Q So it looks like Dr. Bove looked only at the residences. Is that -- is that your understanding from that paragraph?

A As I read this paragraph sentence -- in that sentence, yes.

Q And can you turn to page 4? And the very last word on page 4, continuing onto page 5 is: "Estimated monthly average contaminant concentrations in the water system serving the individual's residence and occupancy dates were used to calculate cumulative exposure, quote: UGL months to each contaminant and the total amount of these

contaminants, quote: TVOC.

Did I read that correctly?

A Yes.

Q So based on what I've read, does it look like Dr. Bove looked only at the residences to determine the cumulative exposure?

A Yes. So his estimates are more conservative than Dr. Reynolds.

Q So I want to go -- I'm going back to the reports, and I want to turn to the Tukes report on page 10.

A Okay. I'm there.

Q Paragraph 2 says: "The current US EPA maximum contamination levels, MCLs for TCE, PCE, and benzene, are 5 ppb established in 1989 for TCE and benzene, and in 1982" -- withdrawn, strike that.

"And in 1992 for PCE, the MCL for vinyl chloride is 2 ppb."

After I corrected myself; did I read that correctly?

A Yes.

Q So are you aware that the EPA uses maximum contaminant levels, MCLs, to set regulatory limits for contaminants in public drinking water supplies?

A Yes.

Q Are you aware of how the EPA establishes MCLs?

A I have a general sense of how they do it.

Q Are you aware that MCLs represent concentrations in drinking water considered safe to consume daily over a 70-year lifetime?

A That sounds correct.

Q Are you aware that MCLs are set using health protective assumptions to ensure safety for even the most vulnerable populations?

A Yes. They do include protection factors.

Q Were you aware that the EPA uses cumulative dose averaged over a lifetime to evaluate cancer risk?

A Yes.

Q So an exposure to drinking water to a concentration in excess of the MCL for a period of time shorter than 70 years does not necessarily constitute a health risk, right?

MR. LEE: Objection to form.

THE WITNESS: So there's a lot of variables that go into that estimation and they have set a -- an acceptable level of cancer risk for the population.

And as some of your experts have pointed out, using population risk assessments are inappropriate for using individual specific causation assessments.

So I can't comment on how the EPA levels correlate to Mr. Downs' and Mrs. Tukes' exposure risk

because it would be considered inappropriate.

BY MS. SPRAYREGEN:

Q Would you agree that for Mrs. Tukes the concentrations of TCE, vinyl chloride, and benzene, reported in Dr. Reynolds' report for Mrs. Tukes were below the MCLs for every single month?

A I wouldn't agree with that. I would say they exceeded the MCLs almost every month for the time that she was there.

Q Can we turn to page 9 of your report?

And the chart that goes from page 9 to page 10 of your report is from Dr. Reynolds; is that correct?

A Yes.

Q And it contains for every -- withdrawn.

The first column for TCE is her exposure to TCE while at Tarawa Terrace for each month; is that correct?

A Yes.

Q And every number in the TCE column is below 5; is that correct?

MR. LEE: Objection to form.

THE WITNESS: It is. And Dr. Reynolds did a calculation and determined that her average mark and gram per liter month was 3.6.

So just below the MCL level for TCE, but clearly above the MCL for benzene.

BY MS. SPRAYREGEN:

Q Would you agree that actually the 3.65 is the sum of the mean monthly concentrations?

A I think you're right about that.

Q And that for each individual month, the concentration was below the MCL?

A Yes, for TCE.

Q For TCE. And --

A Not the case for PCE.

Q But also the case for vinyl chloride. Every single month the mean monthly concentration was below the MCL for vinyl chloride; is that correct?

A Look at the full table.

Q The MCL for vinyl chloride, as we've discussed, is 2; is that correct?

A Correct. So half of the MCL for vinyl chloride. And in every month exceeded the MCL by 50 percent for PCE -- well, depending on which model you use, if you use the tech flow, it's right at the MCL, but if you're looking at the MTD3, it's two to three times the MCL.

Q Looking at vinyl chloride, though, would you agree that every single month the mean monthly exposure was below the MCL?

A At the level of 1, the MCL being 2, yes.

Q And you only have this chart for Tarawa Terrace in

your report, but all of Ms. Tukes' benzene exposure is from Hadnot Point; is that right?

A That's a good question. It could be.

I don't have the breakdown in front of me. If I look at Kelly Reynolds.

Q If you go to the Reynolds report, which is Exhibit Number 13.

A So for -- I was looking at Downs.

Counselor, if you could ask the question, we might save some time.

Q I just need to find my piece of paper. If I can figure it out. If I can see it.

A You were asking me about benzene exposure.

Q All of Ms. Tukes' benzene exposure is from Hadnot Point; is that correct?

A I think so.

Q And would you agree that for every single month her exposure was less than 5 ppb?

A May I look at the chart that you're looking at?

Q Actually, I don't have it in front of me, and I can't find it.

A I think she was at Camp Lejeune for how many months?

Q She was at Hadnot Point, according to the Reynolds chart, for, I believe one month?

MR. LEE: Objection. Form.

MS. SPRAYREGEN: We can move on.

THE WITNESS: So if her cumulative exposure was 60 micrograms per liter month and she was there for one month, she would obviously have exceeded that 5 microgram per liter concentration.

MS. SPRAYREGEN: We can move on.

I believe it's the part that got cut off, that's what the problem is.

I will possibly come back to that.

BY MS. SPRAYREGEN:

Q But Ms. Tukes, you found, was in the low -- withdrawn, I'll take that back.

Looking at page -- so on page 16 of the Tukes report, if you would please go there?

A Page 16.

Q Mm-hmm. You write, under TCE Exposure and Kidney Cancer: "Ms. Tukes exposure to TCE, although minimal, would have contributed additively or synergistically to her risk of kidney cancer."

Did I read that correctly?

A Yes.

Q So is it your opinion that if Mrs. Tukes had been exposed to TCE but none of the other chemicals at Camp Lejeune -- withdrawn.

If Mrs. Tukes had been exposed to TCE, but none of the other chemicals at Camp Lejeune, would that have been sufficient to cause her kidney cancer?

A Yes.

Q If Mrs. Tukes had been exposed to all the other chemicals; PCE, benzene, and vinyl chloride, but not TCE, would that still -- would it still be your opinion that Mrs. Tukes' kidney cancer was caused by her exposure?

A I'll give some consideration to your question, Counselor. Could you repeat your question?

Q If Mrs. Tukes had been exposed to all the over chemicals; PCE, benzene, and vinyl chloride, but not TCE, would it still be your opinion that Mrs. Tukes' kidney cancer was caused by her exposure?

A To what?

Q PCE, benzene, and vinyl chloride, but not TCE?

A Yes.

Q And the same for vinyl chloride. It's your opinion that her exposure was sufficient to cause her kidney cancer; is that correct?

A Yes. Each of these are known carcinogens and they have a carcinogenic effect that triggers a carcinogenic pathway, and once that gets started, all these other chemicals are additive in nature and so it's a combination, the additive effect.

So while one may not be as high as the other, it's the combination that added together, so total VOCs, for example, had been found to increase risk, and Bove, in his article, talks about that, the TVOC risk estimate is as high, if not higher, than some of the individual ones in terms of risk.

Not only that, it was a dose-response curve that was positive. So individually there's risk, but when it's all combined together, there's that much greater risk and Bove's data support that.

Q Is it your opinion that Mrs. Tukes' exposure to vinyl chloride was sufficient to cause her kidney cancer?

A Yes.

Q And is it your opinion that Mrs. Tukes' exposure to benzene was sufficient to cause her kidney cancer?

A Yes. Particularly given her medium exposure risk. If I go back to what I just said about the additive effect, we.can't take one exposure out of the -- out of the mix because she was exposed to all four of the chemicals.

Q I was asking hypotheticals.

MR. LEE: Objection to form.

BY MS. SPRAYREGEN:

Q If Mrs. Tukes had only been exposed to vinyl chloride, would it be your opinion that that was sufficient to cause her kidney cancer?

MR. LEE: Objection to the form of the question.

THE WITNESS: You know, we've had this conversation earlier today. I think that the reality is: I can't take her out of that context. And the context is: She was exposed to all four, so I can't -- you're asking me to project an opinion on something that is not reality, and so what I can speak to is what she was exposed to and what her risk is, and that's all I'm going to say.

BY MS. SPRAYREGEN:

Q I was asking you because -- withdrawn.

Would you consider what Dr. Reynolds did to be a risk assessment?

MR. LEE: Objection to the form of the question.

THE WITNESS: I think Dr. Reynolds provided me and the plaintiffs with information that was necessary to do a determination of her cancer risk based on her exposures.

I don't choose or don't want to characterize what she did as a risk assessment because I'm not an expert in that area, and so I can tell you that the information she provided was useful for me, for me to do my job, and say that she was exposed to carcinogens.

Those carcinogens markedly increased her risk for developing kidney cancer, and I opined that those exposure"s caused her kidney cancer.

BY MS. SPRAYREGEN:

Q Do you know what "excess lifetime cancer risk" is?

A I've heard the phrase before. Yes.

Q What is it? Withdrawn.

Is excess lifetime cancer risk the additional risk of getting cancer over a lifetime as a result of exposure to a specific carcinogenic chemical or radiation above the normal background risk?

A I think that's a fair characterization of excess risk.

Q Did Dr. Reynolds calculate Mr. Downs' or Mrs. Tukes' excess lifetime cancer risk?

MR. LEE: Objection.

THE WITNESS: Not that I recall in her report.

MS. SPRAYREGEN: I'm introducing Exhibit Number 15. 15.

(Mallon Exhibit 15 marked for identification.)

BY MS. SPRAYREGEN:

Q Have you seen Exhibit Number 15 before?

A Yes.

Q Is it the Notice of Deposition and subpoena and request for documents for this deposition?

A Yes, it is.

Q Have you reviewed the request for production of documents?

A Yes.

Q What searches did you perform to locate responsive documents?

A I did a very thorough search for all the documents requested.

Q What did you do?

A And did not find any.

Q What did you do for that thorough search?

A I looked at all the records that I had. Well, for one thing, I knew that her paragraph one, I had no contact with any of those individuals, and it was only after I had written my report that I saw any reports or depositions for many of the people listed.

Well, you know, Dr. Allen, I think I had access to his report. That I reference in my report. I'd have to look.

I don't know who Wise is. I don't know who Lotan is. I don't know who Fay, Sautner, Suarez, Martel, I don't know any of those people. And had no opportunity to speak to any of those people.

The same with paragraph O through Y. No family member contact. So, no contact whatsoever, Counsel.

(Mallon Exhibit 16 marked for identification.)

BY MS. SPRAYREGEN:

Q Have you seen Exhibit Number 16 before?

A Yes, I believe I have.

Q And can you turn to page 9, please?

A Page 9. Okay. I'm there.

Q The first phrase of Request Number 6 is: "A copy of all lectures, presentations, or talks, that you have presented relating to these Camp Lejeune water contamination cases."

Did I read that correctly?

A Yes.

Q And in the response, the last sentence says you believe you do not possess any documents responsive to this request; is that -- is that true?

A Yes.

Q And you -- I mangled that question.

Is it -- forget whether or not I read it correctly.

Is it true you don't have any documents responsive to the request?

A Correct.

Q And Request 8 is: "A current copy of all medical questionnaires and/or intake forms you utilize in your medical practice with your kidney cancer patients to provide to your" -- withdraw.

Request Number 8 is: "A current copy of any and all medical questionnaires and/or intake forms you utilize in your medical practice with your kidney cancer patients, or provide to your kidney cancer patients in your medical practice for their completion."

Did I read that correctly?

A Yes.

Q And is it accurate that you do not use medical questionnaires in your practice?

A I do not maintain a questionnaire that I give to the individuals whose cases I review. The VA has medical questionnaires that they provide to examiners who are reviewing the claims of veterans, but I don't personally administer those. Those are usually done by other providers and that information is included in the medical records from the VA, but I don't generate the form. I only have the opportunity to review the form that's generated by the VA.

(Mallon Exhibit 17 marked for identification.)

BY MS. SPRAYREGEN:

Q So Exhibit Number 17 is what you produced in

response to the request for documents and subpoena; is that correct?

A This does look like that, yes.

Q And I will note for the record that for once the highlighting is not made by me but was -- came to us with the highlighting.

A I believe the highlighting was done by the Bell Legal Group.

Q That was one of my questions.

So can you please turn to -- oh, of course the Bates numbers are off. I was going to say page number with -- ending in 0012.

You might not be able to figure that out, so --

A Does it say February 5, 2025 at the top of the page? That's what my page says. At the bottom it says 0012.

The top of the page it says 5 February for kidney invoice.

Q One second. There's a problem, but there are Bates numbers on this one.

Please turn to page number -- ending in 0017.

A 0017?

Q Yeah. In the middle of the page it says: "After the general causation report was completed, an additional six articles were located that required review and

incorporated into the general causation report. Six hours total."

Did I read that correctly?

A Yes.

Q Who located the articles?

A I did.

Q Can you please turn back to the page ending in 0012?

A I'm there.

Q Okay. So the last entry on that page, it says: "Number 2. Report writing and multiple revisions to specific causation reports for Tukes was 10 hours."

A That's correct.

Q And then the next line is: "Reviewed new exposure charts from Cathy Reynolds. Incorporated tech flow and MT3DMS model exposure estimates for two PCE in two reports. Three hours."

Did I read that correctly?

A Yes.

Q How did you incorporate the tech flow and MT3DMS models into your exposure estimates into your reports?

A The first step was to read a report and to understand the attachments, which were micro, so blowing them up so I could read them and make sense of them and recognize and understand what it was he was trying to say

and what tech flow meant and what MTSD3 meant in terms of the water modeling.

Once I was able to make sense of that and understand what the report was saying in terms of her exposure, then I could integrate that information into my final Tukes and my final Downs report.

Q What reports -- withdrawn.

Is the only reports that you reviewed in that entry those from Dr. Reynolds, or did you actually review reports and values from models -- withdrawn.

Is the only charts and reports that you reviewed in that entry from Dr. Reynolds?

A Well, in fairness, I have to go back to Morris Maslia and figure out what the heck those two modeling reports are, so that took a fair amount of time to understand what Dr. Maslia did in understanding those two models.

I mean, he wrote extensively. He published extensively on the modeling that he did.

There were several documents that I had to review to get comfortable with his modeling effort, what I thought it was appropriate, and so I had to do the background reading and understand the basis for what he was saying and why he was saying it.

And so I had a better context then for

understanding what Dr. Reynolds was saying and understanding the difference between what was reported, particularly for the tech flow, and the MTSD3 modeling for PCE.

Not the easiest of reports to review and comprehend.

Q So you have been looking at notes throughout the deposition today; is that correct?

A I'm sorry?

Q You have been looking at notes throughout the deposition today; is that correct?

A I do have a couple of notes, yes.

Q Other than these notes, did you bring anything with you to the deposition?

A Just what's here.

Q Can I get a copy of those? I'll take those at the next break.

A Okay.

Q And do you have any support staff or graduate students who assist you with your work on this -- who assisted you with your work on this case?

A You know, I'm interested in hiring some people, so if you have some recommendations, I would be happy to take them. I don't currently have any, but I may be expanding my business.

Q So no one assisted you with your reports on this

case?

A That's correct.

Q What did -- what did you do to prepare for today's deposition?

A I had the opportunity to talk to --

MR. LEE: I'm going to object and just to be clear. She's not asking you about any conversation you had with Jim or myself, or any of the other attorneys. Obviously, you can respond to her questions generally. But not related to the content of our discussions.

THE WITNESS: I understood.

MR. LEE: I knew you knew that, I want to make sure I was clear, because it's late in the day.

THE WITNESS: So we had a couple of Zoom calls that might have lasted an hour. Prior to our meeting yesterday, we spent some time yesterday just helping me understand the rules of engagement.

BY MS. SPRAYREGEN:

Q I don't want to know what you talked about.

A I know.

Q You said had you a couple of Zoom calls and met in person yesterday; is that correct?

A Yes.

Q And were you saying that each of those Zoom calls was an hour, about an hour?

A I think that's accurate.
Q And how long was yesterday's meeting?
A We went from 10:00 until 2:00.
Q Did you review any documents with counsel during these meetings?
A No.
Q Did you take any notes during any of these meetings, other than the ones you brought to us today?
A No.
MS. SPRAYREGEN: All right. I think we've been going for an hour. I'd like to take a break.
THE VIDEOGRAPHER: The time is 5:13 p.m. We are going off the record.
(Recess taken from 5:13 to 5:28 p.m.)
THE VIDEOGRAPHER: The time is 5:28 p.m., and we are going back on the record.
Please proceed, Counsel.
(Mallon Exhibit 18 marked for identification.)
BY MS. SPRAYREGEN:
Q I'm going to show you what we're going to -- what we're marking as Exhibit 18, which is Dr. Bove's 2024 Cancer Incidence Study.
You're familiar with this document?
A Yes.

Q Would you agree that Mr. Downs, as we discussed earlier, has clear cell renal carcinoma?
A I'm sorry, I didn't hear your question, Counselor.
Q Is that a joke?
A No.
Q I can't tell.
A No, I wish.
Q I wasn't sure if you were kidding.
We discussed earlier today that Mr. Downs has clear cell renal carcinoma; is that correct?
A Yes.
Q So can you please turn to Table 3 in Exhibit 18? And for the record, the highlights are mine.
A You said 3, are you talking Table 4?
Q No, Table 3.
A This one?
Q I would give you the page number, but there aren't really any.
A Okay. I'm there.
Q So Table 3 in Exhibit 18 says: "Comparison of Cancer Outcomes at Camp Lejeune versus Camp Pendleton. Among Marines, Navy personnel subgroup who began active duty and were stationed at either base between 1975 and 1985. N equals 318,305."
Did I read that correctly?

Should we shut the door?

A Yes, I think that will help. That's better.

So of the highlighted lines, which one are you referring to?

Q I wasn't referring to either. I just read the title of the table. So I'll do it again.

Table 3 says: "Comparison of Cancer Outcomes at Camp Lejeune versus Camp Pendleton among the Marine, Navy personnel subgroup, who began active duty and were stationed at either base between 1975 and 1985. N equals 318,305."

Did I read that correctly?

A Yes.

Q And if you're looking at the second to last column, it's looking at the adjusted HR, comparing those at Camp Lejeune to Camp Pendleton; is that correct?

A That is correct.

Q And for renal cell -- sorry.

For renal cell and clear cell carcinoma, that would be the pink line. The adjusted HR is 1.03 with confidence intervals of .91 and 1.16; is that correct?

A That's what it says, yes.

Q And for renal cell carcinoma NOS, the adjusted HR is 1.12, with a confidence interval of .94 and 1.34; is that correct?

A For the adjusted, yes.

Q Yes. And for clear cell only, the adjusted HR is .97 with confidence intervals, 0.82 to 1.14.

Did I read that correctly?

A Yes.

Q And your report for Mr. Downs cites only the adjusted HR for renal cell carcinoma NOS; is that right?

A Yes, that's correct.

Q And if you look at -- and that is the highest of the three adjusted HRs that I read to you; is that correct?

MR. LEE: Objection to form. You can answer.

THE WITNESS: That's correct. Although the papillary is, in fact, the highest at 1.18.

BY MS. SPRAYREGEN:

Q But Mr. Downs did not have papillary --

A To the best of our knowledge.

Q -- renal cancer; is that correct?

A Yes.

Q And if you turn to Table 5, please, the title for Table 5 is: "Cancer Outcomes by Duration stationed at Camp Lejeune compared with Camp Pendleton between 1975 and 1985. Marines, Navy personnel subgroup. N equals 318,305."

Did I read that correctly?

A Yes.

Q And would you agree that Dr. Bove is showing this table to look at whether there is a dose-response

relationship?

A I believe that's the intent, yes.

Q And would you agree that for renal -- for kidney and renal pelvis, that is the yellow line, there is no monotonic dose-response relationship?

A There's definitely what appears to be a linear relationship, although it seems to be reverse.

Q I should have -- thank you.

There's no increasing monotonic dose-response relationship; is that correct?

A That's correct.

Q And for RCC and clear cell, there is no monotonic relationship, dose-response relationship; is that correct?

A Correct.

Q And for RCC NOS, there's also no increasing monotonic dose-response relationship; is that correct?

A I would say two points can make a line. So it does increase from the low duration to the medium duration, going from 1.12 to 1.16.

Q But the high duration is 1.03; is that right?

A It does sag at the end, yes.

Q So that would mean that there is no increasing monotonic dose-response relationship?

A You know, we got into this a little bit at the last deposition, and, you know, if we did a P test for

trend, we might find that there's a relationship. That's hard to say definitively that that doesn't exist in this case without seeing a test for trend.

Q Again, though, you would agree that Mr. Downs had clear cell renal cell carcinoma; is that correct?

A Can we take a look at the pathology report, Counselor?

Q We can look at your report, page 6, which says that he had clear cell renal carcinoma. Should we do that?

A Yeah, let's take a look.

Q So in -- on page 6 of the Downs report, in paragraph number 4, it says: "Dustin v. Shackleton, M.D., wrote a surgical pathology report dated 7/29/2016, and indicated that Mr. Downs' right kidney mass after nephrectomy was noted to be a clear cell renal cell carcinoma that was 4 centimeters in size with extensive fibrosis, patchy hemorrhage, inflammation, and focal necrosis."

So according to page 6 of your report, which looked at Dr. Shackleton's records, Mr. Downs had clear cell renal cell carcinoma; is that right?

A That's correct.

Q And when discussing Mr. Down -- withdrawn.

And when discussing the Bove report in your report, you do not note that -- withdrawn.

And would you agree that in your report, you only discuss RCC NOS, or the numbers for RCC NOS in this 2024 study?

A Sorry. Yes.

Q And would you agree in your -- that when looking at the low exposure category, which you focus on in your -- withdrawn.

In your report, do you discuss the low exposure category from this table?

A Which page of the report were you referring to, Counselor?

Q Page 11. The last sentence of paragraph F on page 11 of the report says: "For personnel with low exposure levels, the risk ratio for RCC NOS was 1.12. Confidence interval, .91 to 1.38."

Did I read that correctly?

A The last sentence there?

Q The last sentence in paragraph F.

A Yeah, that's correct.

Q And you're looking at the number for RCC NOS for low duration in Table 5 of the Bove 2024 Cancer Incidence Study; is that correct?

A Yes.

Q And that number of 1.12 for RCC NOS is the -- and its confidence interval, is the only number that you refer

to from Table 5 in this report; is that correct?

A That's correct.

MS. SPRAYREGEN: I'm going to look at -- I'm going to introduce the next exhibit, Exhibit Number 19.

(Mallon Exhibit 19 marked for identification.)

BY MS. SPRAYREGEN:

Q So Exhibit Number 19 is a study by Aschengrau, et al., entitled: "Cancer Risk and Tetrachloroethylene-contaminated Drinking Water in Massachusetts;" is that correct?

A Yes.

Q And the date on this study -- this study was published in the September/October 1993 -- withdrawn. Strike that.

This study was published in September -- in the September/October issue that came out in 1993; is that correct?

A Yes.

Q Can you turn to your Downs report on page 10?

A Okay. I'm there.

Q Is this the study that you're referencing in paragraph C?

A Yes.

Q For the record, if you go to footnote 13. I

believe it says that the study was published in 2010; is that an error?

A In terms of my reference?

Q Yeah, reference. If not the materials considered, but the footnote number 13, which is page 22 of the report.

So that does make things a little easier.

A Page 22, Number 19.

Q And Number 13 is Aschengrau study.

A Right.

Q And it says it was published in 2010; is that a typo?

A Yeah, it must be. Because I know it was '93.

Q And you write in the first sentence of paragraph C that the study, and I quote: Noted an elevated kidney cancer risk with PCE in the range of 27 to 44 mg of PCE in the drinking water at Cape Cod.

Did I read that correctly?

A Yes.

Q And then the very last sentence of that same paragraph is: "It should also be noted that the 27 to 44 mg numbers listed by Aschengrau were up to the 90 percentile."

Did I read that correctly?

A That's correct.

Q And if you turn to page 289 in Exhibit Number 19.

Thank you.

A 289?

Q Page 289 is the page with the tail at the bottom. I see you there.

A Mm-hmm.

Q The first full paragraph has some highlighting in the last sentence of that paragraph.

Do you see that?

A Yes.

Q So the last sentence in that paragraph is, quote: Relative delivered dose, RDD, estimates obtained from the Webler-Brown model ranged from .01 to 90.6 mg with latency and from .01 to 209 mg without latency. The 90th percentile among exposed controls were 27.1 and 44.1 mg respectively."

Did I read that correctly?

A Yes.

Q Would you interpret that sentence to mean -- and I agree it's poorly worded, that the 27 mg and the 44 mg numbers, in fact, refer to those exposed in the 90th percentile?

A Could you repeat the question, Counsel?

Q When you read: "The 90th percentile among exposed controls were 27.1 and 44.1 mg respectively," do you interpret that sentence to mean that those were exposed or -- sorry. Those who were exposed but where the control cases were exposed to 27.1 mgs and those who were exposed,

but were the -- and were the actual cases -- withdrawn.

How do you -- what do you interpret that sentence as?

A That's a good question. The relative delivered dose estimates obtained from that model range from .1 to 90 milligrams with latency from .1 to 204 milligrams without latency.

It's so poorly worded it's hard to know exactly what she's trying to say there.

Q My understanding was that the 27.1 and the 44.1-milligram numbers referred to those in the 90th percentile of exposure.

Does that sound right to you?

MR. LEE: Object to the form of the question.

You can answer.

BY MS. SPRAYREGEN:

Q Would you agree with that interpretation?

A I'm trying to get there. Help me in terms of how you informed that opinion, because I'm not sure where it says that.

Q I was looking at the wording of that sentence, so I can just ask you again.

How do you interpret that sentence?

A I'm doing my best to interpret it. It says one comment about exposures here, but they don't provide an

exposure range.

Q I'll represent to you that that is the only sentence in this article that discusses milligrams and numbers in terms of exposures?

A Could you repeat that again? Because I didn't hear you.

Q I said I can represent to you that there are no other discussions of milligrams and how they relate to exposures in this article.

So given that, would you interpret that sentence to be that those who are exposed, those in the control group who were exposed to 27.1 milligrams were in the 90th percentile?

A See, that's why this sentence makes no sense, because the controls weren't exposed. You don't expose your control to these chemicals, and why would you even think that? That's what's confusing.

Q Does it seem as though -- withdrawn.

Withdrawn. I take that back.

Does it appear -- withdrawn. So if you turn to page 290.

Under "Discussion," the last sentence of the first paragraph under "Discussion" reads: Quote: No kidney cancer cases were considered exposed when latency was taken into account and no meaningful increases in the risk of

kidney cancer were detected without latency.

Did I read that correctly?

A You did read that correctly.

Q So if we agree with the latency in this study, these results do not provide support for the opinion that PCE exposure can cause kidney cancer; would you agree with that?

MR. LEE: Objection to form.

THE WITNESS: No, I don't think so. I'm not sure what that sentence says.

BY MS. SPRAYREGEN:

Q So let me turn to the table on page 289.

A 289.

Q Yes. Do you see in the very first column in the first row says: "With latency"?

A Yes.

Q And then it discusses bladder cancer, kidney cancer, and leukemia; is that correct?

A Yes.

Q And then under that it says: "Without latency," and then it notes the odds ratios for bladder cancer, kidney cancer, and leukemia; is that right?

A Yes.

Q And so if you look at the "with latency" category and you go to the kidney cancer section, if you will; do you

see that?

A Yes.

Q And do you see under "Cases," and it says, it says "N equals 35"?

A I see that.

Q And then under: "PCE Exposure History," there's a zero for any, low, and high; do you see that?

A So we're talking about the kidney cancer line?

Q Yeah.

A So for -- any for cancer cases, I see six. For low, six. For high, zero. I see that.

Q I'm looking at Table 4. Are you looking at Table 4?

A I am.

Q And then you're looking --

A You're looking at cases with latency. I was looking at cases without latency.

Q Right. I'm looking with latency.

Because you said you didn't know what the sentence meant when I said that low kidney cancer cases were considered exposed when latency was taken into account.

Do you remember saying that?

A Yes.

Q So now I'm showing you that in the table, when they're looking at the -- comparing those with kidney

cancer -- I'm sorry, those with kidney cancer, who are exposed to those who were not exposed with kidney cancer, taking into account latency, there were no exposed individuals with kidney cancer?

A There are no exposed cases, that looks like what it says.

Q All the exposed cases who developed kidney cancer were eliminated when they considered latency is how I understand this table.

MR. LEE: Objection. Form.

THE WITNESS: I see your point.

BY MS. SPRAYREGEN:

Q So would you turn to page 287?

A 287?

Q Yeah. And under "Data Analysis," I quote: The crude, unadjusted analysis examined PCE exposure in relation to each cancer site. Exposure was examined as a dichotomous, quote: Ever versus never variable, or as an unexposed low and high relative delivered dose, RDD. We defined low RDD as a level up through the 90th percentile among the exposed and high RDD was defined as a level above 90th percentile among the exposed.

Did I read that correctly?

A Yeah.

Q So based on what I read, would you agree that --

withdrawn.

So would you agree that the study looked at ever versus never exposed and also looked at a -- those with low, high, and no exposure?

A It does say low and high exposure, yes.

Q And it also looked at low -- I'm sorry. They also looked at ever versus never exposed; is that correct?

A That's correct, yes.

Q And then -- so now looking at this, is it your understanding that the 27 mgs and the 44 mgs represent those who were in the high exposure categories?

A And just remind me where that was in the --

Q It is on 289 in the first column.

A I'm just trying to still figure out where the 90th percentile for controls were exposed. It's not represented in this table.

Q We can leave that aside.

So I want to turn to page -- the same page. I want to stay on page 289 and look at the second column, the last sentence, in the first full paragraph reads: "No kidney cancer cases were considered exposed to high RDD;" is that correct?

A Are we talking about Table 4?

Q I'll rephrase my question.

The last sentence in the paragraph on page 289, in

the first paragraph on page 289 says, quote: No kidney cancer cases were considered exposed to high RDDs.

Did I read that directly?

A Yes.

Q And so you can go back down to the table.

Would you agree that when looking at cases not taking into account latency, the odds ratio of those who are exposed, who are ever -- who are ever exposed to those who were not exposed was 1.23; is that correct?

A So this is any exposure?

Q Yeah.

A In the first column?

Q Yes.

A It does say that. 1.23.

Q And would you agree that the lower boundary of that confidence interval is .40?

A It does say .40.

Q And if you look at the next column over, which is the odds ratio for those who were in the low exposure category, it is -- the point estimate is 1.36; is that correct?

A Yes, that's correct.

Q And again, the lower boundary of that confidence interval is .45; is that correct?

A Yes, that's correct.

Q Can you turn to page 290?

A I'm just trying to figure out how much data is below that portion of the curve.

So 290, yes.

Q So the first -- the last sentence of the first paragraph under "Discussion" reads: "No kidney cancer cases were considered exposed when latency was taken into account and no meaningful increases in the risk of kidney cancer were detected without latency."

Did I read that correctly?

A Yes.

Q I'm assuming -- would you disagree with these authors?

A How I read this sentence, Counselor, is that they noted an increase risk of kidney cancer in the cohort that they looked at. When they added latency as a consideration, there were no additional risks that came out during the latency determination, but that doesn't take away from the fact that the underlying population was exposed and developed kidney cancer as a result of those exposures.

Q Can you turn to page 287 of this study?

So under -- on page 287, in the first column, under "PCE exposure estimates," the second sentence reads: "The relative delivered dose, RDD, was defined as the estimated mass of PCE in milligrams that entered a given

house as a solute in drinking water over a specified period of time."

Did I read that correctly?

A Yes.

Q Do you know what the specified time period is? So I will lay my cards on the table. I could not find the answer in this article.

MR. LEE: Objection to the form of the question.

THE WITNESS: I appreciate your comment, Counsel. This study was conducted over a period of years. And as a minimum during the duration of the study, they defined the exposure that the cohort was exposed to because once they found the chemicals in the drinking water, they did their best to eliminate the exposure.

BY MS. SPRAYREGEN:

Q So would you agree that we don't know what the time period is that the authors looked at?

MR. LEE: Objection to form.

BY MS. SPRAYREGEN:

Q Would you agree that in this sentence -- withdrawn.

Would you agree that -- strike that.

As we were discussing, the sentence reads: "The

estimated mass of PCE in milligrams that entered a given house as a solute in drinking water over a specified time period;" is that correct?

A Yes.

Q But as you sit here right now, you don't know what the specified time period is; is that correct?

A Well, what I do know is that they installed those pipes in the 1960s, and from that point until they started conducting the study in 1985, there was an opportunity for a breakdown of those pipes and contamination of the drinking water.

And in here, it says that the Massachusetts Department of Public Health report elevations in cancer mortality. The study showing up in 1969.

So certainly from 1960 to 1969 there was a period of exposure during which people were exposed to concentrations that were sufficient to cause their kidney cancer.

And did you have a question beyond that?

Q So is it your opinion that the specified time period was 1960 to 1969?

A Nine years.

Q Can you turn to page 290? The last paragraph under "Discussion," the second sentence reads: "Given that the exposures occurred many years ago, it is impossible to

know with absolute certainly the precise PCE levels to which subjects were exposed."

Did I read that correctly?

A You did read that correctly.

Q And we do agree that the study did not directly measure an individual's exposure?

A This study doesn't specifically say that they did individual exposure assessments for every individual in the cohort, that's correct.

However, through exposure modeling, they were able to identify that there was a range of exposures that they estimated to be between 25 and 44 parts per million. No, milligrams, sorry.

Q Where are you looking?

A So they had information and they did modeling based on the contaminants in the pipes, the breakdown, the type of pipe, the length of the pipe, and so they could model the estimated exposure based on their exposure assumptions to come up with an exposure range that Dr. Aschengrau and company established as a range of exposures.

Q Would you agree that the study did not directly measure an individual's exposure?

A Yes. I will say that it goes on to say they did have the opportunity to sample public water supplies and

drinking water concentrations.

As I was saying, it talks about, they had contaminant levels -- excuse me a second.

I'll have to call you back. Sorry.

Q That's okay.

A So as I was saying, they looked at the public water supplies and there were sample levels that they used to -- in terms of exposure.

Q Looking at sample levels in terms of exposure is not directly measuring an individual's exposure; is that correct?

A I'm getting to that point, Counselor.

The highest TCE levels were detected at 33 and 35 parts per billion. TCE being a breakdown product of TCE and PCE.

So they had indirect measures of exposure through TCE levels -- or TCA levels, sorry.

So it says here on page 285: "Exposure to PCE from public drinking water distribution systems was examined in relation to three of the cancer cases."

So they did have some exposure information related to some of the cancers, not all of the cancers, but some of the cancers where they had exposure levels.

Q Where are you looking?

A At the bottom of the very first column on

page 285. Like the -- three or four lines from the bottom of the page.

It says: "Exposure to PCE from public drinking water distribution systems."

Do you see where I'm reading? Right here.

"Exposure to PCE."

Q Okay.

A Not the whole cohort, but they had some exposure information on the people who developed cancer.

Q And I want to go back to that sentence on page 289 that we previously didn't understand.

The sentence reads, again: "The relative delivered dose, RDD, estimates obtained from the Webler-Brown model range from .01 to 90.6 mg with latency and from .01 to 209.4 mg without latency. The 90th percentile among exposed controls were 27.1 and 44.1 mg respectively."

Did I read that correctly?

A Counselor, with all due respect, I believe you read that sentence correctly, but I believe there's a typographical error in this report, specifically as it relates to controls.

I would think you need to cross out the word "controls" and make that "cases," that would make much more sense to me, just in the internal flow of the logic of the

paper.

Q So I'm actually struggling with this, I admit. And -- withdrawn. Strike that.

So how do you interpret that -- withdrawn. Strike that.

What do you interpret this sentence to be saying?

A I think, as we talked about a little bit earlier, the 90th percentile among exposed cases was an exposure that ranged from 27 to 44 milligrams.

Otherwise, that sentence makes no sense.

Q So your last -- going back to your report on page 10, can you pull that out for me for one second?

A Yes.

Q The last sentence on page 10 of your report says: "It should also be noted that the 27 to 44 mg numbers listed by Aschengrau were up to the 90th percentile."

Did I read that correctly?

A Yes, you did.

Q Is it now your opinion that the 27 and 44 mg numbers are those in -- represent cases in the 90th percentile?

A It says "the 90th percentiles among exposed cases" were that. And my sentence says -- I'm just trying to sort out what you're trying to draw a distinction on here.

Q And my -- sorry.

When you say "they were up to the 90th percentile," my understanding was that these numbers were for the 90th percentile, not under the 90th percentile?

A I believe it would be appropriate to cross out "up to the," and just say "were at the 90th percentile."

So yes. It's at the 90th percentile because that's what the report says.

MS. SPRAYREGEN: Can we take a break?

THE VIDEOGRAPHER: The time is 6:17 p.m. We are going off the record.

(Recess taken from 6:17 to 6:28 p.m.)

THE VIDEOGRAPHER: The time is approximately 6:28 p.m. We're going back on the record.

Please proceed, Counsel.

MS. SPRAYREGEN: I have no other questions.

MR. LEE: Good deal. Are you ready?

EXAMINATION

BY MR. LEE:

Q Let's begin, Dr. Mallon, by having you, for the Court, just describe a bit about what your background and experience is, including your experience working with Marines and their family members, dealing with some of the issues you talked about today as it relates to providing care and making a decision with the VA?

A So, you know, going back to my time in the Army,

doing a lot of work in environmental -- occupational and environmental exposure assessments, bringing that forward to work with the -- and I did that for 30 years, and then once I left the Army, I started working for the VA, through the Veteran's Evaluation Services.

For the last eight and a half years now, I've helped the VA evaluate disability claims related to service members; Marine Corps vets, and Army, and other service members, disability claims related to Camp Lejeune and other environmental exposures; Agent Orange, burn pit exposures, a variety of different things, writing medical opinions to support the VA in terms of getting -- giving every veteran a chance to have their disability claim reviewed.

In a synopsis, that's kind of it in a nutshell.

Q And how do you spend your time now with those evaluations, in your CV you mentioned you spend a certain number of hours a week, what does that really entail?

A Well, on average, I've been getting about five cases a week, and I probably put in probably four to five hours per case, reviewing the case file. Average case file is anywhere from 2,000 to 10,000 pages, and I look at the medical records, look at the medical documentation, look at the medical opinions from other physicians who had the opportunity to weigh in on the case.

And oftentimes, the VA ask me to be the decider of

fact, if you will, between separate medical opinions that have been submitted.

So -- and in some instances, I've been asked to be a referee, if you will, of medical opinions, weighing both the for and the against.

Q And to be clear, what exactly are you deciding?

A I'm deciding for the VA, answering their questions regarding whether the exposure the veteran is claiming contributed to the specific outcome that they're requesting in terms of disability.

Q And what are some of the outcomes specifically that you looked at recently?

A Well, most recently, looking at a variety of disabilities; kidney cancer, leukemia, prostate cancer, noncancer cases regarding liver disease, hepatic steatosis, individual chronic kidney disease, a variety of other autoimmune conditions, scleroderma, among others.

So it's a full mix of both cancer and noncancer cases.

Q And to be clear, best estimate, the percentage of times you make a determination with your VA position that there is an association and times when you've determined that there's not, what's the percentage?

A It's a balance. I think I spoke earlier today and said it was probably 20 percent for and 80 to 90 percent

against.

But as -- as we've said, you know, there's a number of things that go into that determination that consists of reviewing the risk factors, reviewing evidence of exposure, not only environmental exposure, but are there other workplace exposures that contribute to the risk, and I try to give the VA a big picture review of the risk factors, the exposures, to come up with a more likely than not determination of whether their exposure caused their disease.

Q And to be clear, the vast majority of the times, you determined there was not an association for causation?

A I would say that it's -- I would say that's true.

Q Okay. And I'm going to skip around very quickly and briefly here in appreciation and respect for your time.

Let's cover the most recent topic that was discussed, that being the Aschengrau study.

Can you put in context what Aschengrau, the study itself, means, again, a study from 1993, as it relates to the total body of literature and materials that you reviewed, again, taking into consideration your knowledge, skill, training, education, and experience, including your current position?

MS. SPRAYREGEN: Objection to form. You can answer.

THE WITNESS: Well, I think that as we look at PCE and Aschengrau study, I think the big picture, going back to my general causation report and deposition, I try to get a sense for where Aschengrau was in terms of what it provided. It provided information on a consistency of association, going back to those Bradford Hill criteria, a consistency of association, and also exposure levels at levels lower than what was in the predominant thought in the medical literature that conditions, kidney cancer, since that's the topic of today, was related to only high levels of exposure.

And so Aschengrau was only one of many studies to include Mandel, Callahan, Purdue, Aschengrau, Cohn, Fagliano, Bove, and other studies which show that low levels of exposure are equally likely, if not greater, increasing the risk for kidney cancer.

It's not only the high risk, but also the low -- the low level chemical exposures that increase risk.

BY MR. LEE:

Q And again, the Aschengrau study was Exhibit Number 19. If you have that front of you, can you --

A It's here.

Q I'm going to have you read a couple things into the record, since you've been doing a lot of that today.

Look at page 287.

A 287. Okay.

Q Let me know when you're there.

A I'm there.

Q Under "Discussion," the paragraph that begins: "Analysis were conducted."

Let me know if you see where I'm at, it's on the right-hand side under "Discussion. Analysis."

A Yes.

Q And if you can read the last sentence in that paragraph into the record?

A Where it says: "The RDD"?

Q The latent period.

A Can you point to it?

Q One paragraph below the one you're at.

A Oh, okay.

Q And read the last sentence in that paragraph.

A "The latent period used was five years for leukemia and 15 years for bladder and kidney cancer."

Q And now skip to page 290, please.

A 290.

Q The right-hand side, the paragraph that begins with: "Furthermore." Let me know when you're there, at the

top.

A I'm there.

Q Can you read that sentence into the record?

A "Furthermore, the use of average latent periods, 15 years for solid tumors and five years for leukemia, for analyses that considered exposures as cancer indicators also contributes to the non-differential exposure misclassification. Inasmuch as individual --

Q Stop there. Two questions.

First, as it relates to the latency of solid tumors, based on your knowledge, skill, training, and experience, is that considered a short latency period, medium, or extended latency period, in terms of assessing and evaluating whether an individual has a solid tumor, specifically in this instance, kidney cancer related to exposure?

MS. SPRAYREGEN: Objection to form.

THE WITNESS: My sense is the 15-year latency period is short. My experience with kidney cancer would suggest an average latency period is longer than what Aschengrau identified.

BY MR. LEE:

Q What is your experience?

A I would say 20 to 30 years.

Q So what impact does that have as it relates to the

results that Aschengrau came to in a 1993 study, given that they use a short latency period?

A Well, I think it undercounts the potential kidney cancer. So it biases the results towards the null, if you will. And with a longer latency period, there's much more opportunity for case detection and more likely would increase the odds ratios of what were presented in this report.

Q If you would now, I'm going to ask just a couple of quick questions concerning some reports that you had related to Downs and Tukes.

Can you -- one was Exhibit 1. The other was Exhibit 2. If can you grab, let me know which one you have, that one first.

A Okay. One is Downs. I got that in front of me.

Q Great. Let's turn to page 17, please.

A 17. I'm there.

Q Below the graph that's there, there is some discussion concerning the first two sentences.

And as it relates to the documentation that you have in this record, and there was some follow-up, I want to make sure the record's clear for others who read the deposition, as it relates to the second sentence, read that into the record, and then I want to ask you whether there are any revisions or changes you would make as it relates to

what you have written.

A You said the second sentence?

Q Please.

A So the effect was amplified by the fact that, according to Dr. Reynolds, Mr. Downs would have ingested 23,000 parts per billion and 59,000 parts per billion of PCE.

Q And Counsel went through this in detail and showed you in the graph where the numbers were and that these were not completely accurate, but they were relatively correct as it relates to the documentation.

As it relates to the parts per billion, is that an accurate representation of the information in the chart above?

A I think it's not quite correct. The correct information there should be micrograms.

Q Okay.

A Rather than parts per billion.

Q And why do you say that?

A Well, it's based on the information from Dr. Reynolds' reports.

Q And to the extent you have the same documentation in the Tukes report, would that be something we correct as well?

A Correct. It's exactly the same.

Q You can put those down, please.

Can you look at Exhibit 12, which was a document that was titled: "Analysis of Groundwater Flow Contaminant in Fate and Transport."

Again, that's Exhibit Number 12.

A Yeah, I got it.

Q Can you look at the first page and tell me at the bottom what year this particular document indicates it was at least considered and potentially published?

A It says "July of 2007."

Q Look at the next page as well. What year does that confirm?

A The same thing.

Q What year are we in currently?

A The last time I checked, 2025.

Q In light of the fact this study was done in 2007, and Counsel had you look at page 898. Can you go to that page?

A Yes, I'm getting there. 898. Got it.

Q She's highlighted a certain section and asked you to read that into the record. I want you to read that to yourself, and then I'm going to ask you a follow-up question.

A Okay. I read it.

Q Based upon the documentation, again, in 2007,

which stated that exposure assessment cannot be used to determine whether you or a family member suffered any health effects as a result of past exposure of PCE-contaminated drinking water at Camp Lejeune, if you look down at the same page, last paragraph, can you read into the record what it says, beginning with "Many factors"?

A It says: "Many factors determine whether people will suffer adverse health effects because of chemical exposures. These factors include dose, duration. When, during the course of exposures the exposure occurred." I meant life events, genetic traits, and other factors, such as occupational exposures, environmental exposures, gender, diet, lifestyle, overall state of health.

Q Do you know whether or not the ATSDR has subsequent publications that actually address the very issue that's being described in this 2007 publication?

A Yes. It's my understanding that they've revised this 2007 report and they added the word "solely" in the -- that paragraph that the defense mentioned.

So it says: "ATSDR exposure assessment cannot solely be used to determine whether you've suffered a health effect."

Q So as it relates to your current knowledge, skill, training, experience, and education, would you explain for the Court what are some of the other variables, and to the

extent you want to repeat what you read, what is some of the other considerations, separate and apart from simply looking at the exposure data that you use in your practice and, frankly, used in this case in your specific causation report, to make decisions that are documented?

A Well, all of the bulleted points under that -- I forget which, the third full paragraph under that section, all of the bullet points are currently part of my assessment that I use.

So that includes dose, duration. When during the course of life events the exposure occurs. Genetic traits. And then other personal risk factors.

Q And Doctor, again, I know you've been involved in both leukemia and also involved in kidney cancer obviously.

In the leukemia work that you did, did you come across publications related to the atomic bomb studies and the latency period with respect to various type of cancers?

A Yes.

Q And what was -- what is your recollection, to the extent you have one, as it relates to whether or not 50 or 60 years out, individuals who were exposed to those, if you will, unfortunate chemicals that came about as a result of that bomb, whether they still show a higher rate of various types of cancers?

A In fact, they do.

Q Explain that, for the record.

A Well, I worked for the Department of Energy for a period of time reviewing energy exposure cases for nuclear workers, people who were involved in building a bomb and subsequent work with -- at the Department of Energy, and we would review those cases, and these were cases that were submitted for review, gosh, when I was first a residency director, I was moonlighting doing some of that work.

Q So how many years after the bombing, based on your recollection of the studies you've seen in your personal experience, that continue to show an increased rate of various types of cancers?

A It was -- we were seeing people that were 40, 50 years out from exposure and they were developing cancer even then.

Q Now, you mentioned earlier -- the final series of questions, that you looked at various publications and studies.

And it's in your MCL, did you consider the Yu study in your assessment and evaluation for consideration of the levels at which individuals can develop cancer?

A You're referring to the BETX?

Q Correct.

A Yes, I did.

Q And what is your recollection of what that study

represents as it relates to the level of exposure that individuals can be subject to it and go on to develop various types of cancers?

A Extremely low levels of exposure and a marked elevated risk of kidney cancer and leukemia based on the Yu study.

MR. LEE: Thank you. No further questions at this time.

EXAMINATION

BY MS. SPRAYREGEN:

Q Earlier today, I asked you about the highlighted sentence in Exhibit 12; is that correct?

A I believe so.

Q And I --

A Exhibit 12 being the -- this one?

Q Yes. Exhibit 12 being the ATSDR Analysis of Groundwater, Flow Contaminant, Fate and Transport, and Distribution of Drinking Water at Tarawa Terrace and Vicinity," as the title goes on. Yes?

A Yes.

Q So earlier today I asked you some questions about the highlighted sentence on page 898; is that correct?

A Yes.

Q And I believe you said that you were not aware of the highlighted sentence; is that correct?

A That's correct.

Q But now you remember that the highlighted sentence excludes one particular word; is that correct?

A I became aware -- yes, that there was a subsequent version of this -- of what you presented.

Q And how did you come to remember that there was a subsequent version of Exhibit 12?

A I was advised by -- I was advised by Counsel that that was the case.

MS. SPRAYREGEN: I have no other questions.

THE VIDEOGRAPHER: The time is 6:46 p.m. We are going off the record.

(Deposition concluded at 6:46 p.m.)

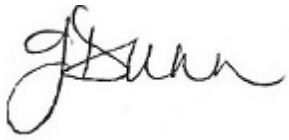
– – –

CERTIFICATE

I, Jennifer A. Dunn, Certified Realtime Reporter, Registered Merit Reporter, do hereby certify that prior to the commencement of the examination, TIMOTHY MALLON, M.D., was duly remotely sworn by me to testify to the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a verbatim transcript of the testimony as taken stenographically by me at the time, place and on the date hereinbefore set forth, to the best of my ability via Remote Zoom teleconference technology.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested



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Dated: July 7, 2025

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If you fail to do so, the deposition transcript may be deemed to be accurate and may be used in court.

ACKNOWLEDGMENT OF DEPONENT

I, TIMOTHY MALLON, M.D., do hereby certify that I have read the foregoing pages and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

_____

TIMOTHY MALLON, M.D. DATE

(Reported by: Jennifer A. Dunn, CRR, RMR, CSR)

Subscribed and sworn to before me this

_____ day of _____, 20 _____.

My commission expires: _____

_____

Notary Public

ERRATA SHEET

WITNESS: Timothy Mallon, M.D.

IN RE: Camp Lejeune Water Litigation

Upon reading the deposition and before subscribing thereto, the deponent indicated the following changes should be made:

PAGE LINE CHANGE

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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.

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