UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION

DAVID WILLIAM FANCHER,	)	
	)	
Plaintiff,	)	Docket No.
	)	7:23-CV-00275-BO-BM
v.	)	
	)	
UNITED STATES OF AMERICA,	)	
	)	
Defendant.	)	

****

MONDAY, NOVEMBER 9, 2026
TRANSCRIPT OF BENCH TRIAL - DAY 1
BEFORE THE HONORABLE TERRENCE W. BOYLE
UNITED STATES DISTRICT JUDGE

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Official Court Reporter
United States District Court
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Monday, November 9, 2026, 10:00 a.m.

P R O C E E D I N G S

10:00:03 THE COURT: Good morning.

10:00:07 MR. QUINN: Good morning.

10:00:07 MR. ROBERTS: Good morning, Your Honor.

10:00:08 MR. BAIN: Good morning.

10:00:08 MR. GUYNN: Good morning.

10:00:16 THE COURT: This is the case of *Fancher versus the United States*, a Camp Lejeune case. 10:00:24 Are you ready to proceed?

10:00:30 MR. ROBERTS: Yes, sir, Your Honor.

10:00:31 THE COURT: Are you ready? Is the Government ready?

10:00:34 MR. GUYNN: Yes, Your Honor.

10:00:34 THE COURT: Okay. We'll have opening statements first. 10:00:37 Do you want to go ahead and present that?

10:00:40 MR. QUINN: Yeah. Thank you, Your Honor. Good morning, Your Honor. 10:00:44 Matthew Quinn of Lewis & Roberts here for the plaintiff. 10:00:47 There's one small housekeeping matter that the parties wanted to bring to the Court's attention first.

10:00:53 Your Honor will, obviously, recall the trial involving Frank Mousser at docket number 23 CV 667. 10:00:57 On the issues of general causation, water modeling, and the discrete damages issue, 10:01:02 there was going to be a lot of overlap between the testimony and exhibits from the *Mousser* case and in the present case. 10:01:10

10:01:15 And so on October 10th, the parties filed a joint

motion to take certain testimony and exhibits from *Mousser* and incorporate it into this docket. Your Honor granted that motion, and pursuant to the Court's order on, let me see -- on November 6th at docket entry 116, the parties filed a stipulation setting forth the testimony and the exhibits from the *Mousser* case that we're asking the Court to admit into evidence in the present case, the *Fancher* case.

And so at this time, the parties would jointly move the testimony and the exhibits from -- reflected in that stipulation, move those into evidence in the present action.

THE COURT: That'll be allowed.

MR. QUINN: Thank you, Your Honor.

MR. BAIN: That's correct, Your Honor. Thank you.

MR. ROBERTS: Thank you, Your Honor. May it please the Court.

In December of 1997, David Fancher noticed a large amount of blood in his urine. His primary care physician referred to him to a urologist, who confirmed the worst. David had a large tumor on his right kidney. It proved to be cancerous. He was 39 years old at the time. He had four children. He was married. You'll hear it was a very emotional time for the Fancher family.

As would be expected, David inquired of the urologist, "What could have caused my cancer?" The urologist could give him no answers because he had not a single risk

10:02:48 factor for kidney cancer. No smoking, no obesity, no high
10:02:53 blood pressure, no genetic component. There was no reason for
10:02:57 Mr. Fancher to have gotten kidney cancer at the age of 39.
10:03:01 What Mr. Fancher and his urologist did not know, Your
10:03:05 Honor, was that he had been exposed to the toxic, poisonous
10:03:09 water at Camp Lejeune during 1979 -- October of 1979 through
10:03:17 June of 1981. It was 337 days that -- that Mr. Fancher was
10:03:24 at -- on Mainside at Hadnot Point, and as Your Honor is aware,
10:03:28 Hadnot Point was considered sort of the ground zero for the
10:03:31 contamination. It's where the barracks were. It's where he
10:03:34 worked. There was a fuel farm, an industrial dump site. So
10:03:39 the water that was serving the Mainside was highly contaminated
10:03:43 with solvents, including TCE.
10:03:46 Your Honor, the Camp Lejeune site was a superfund
10:03:50 site. The Government, through 2023, paid over $300 million to
10:03:55 clean it up. As Your Honor will hear, official government
10:03:59 studies confirmed that it was highly contaminated with
10:04:02 solvents, including TCE. There could be no serious dispute, we
10:04:06 don't think, Your Honor, that TCE causes kidney cancer. The
10:04:11 Government's studies show that thousands of gallons of this
10:04:15 poison was pumped into the -- into the groundwater at Hadnot
10:04:19 Point. The Government's own studies show that Marines like
10:04:24 Mr. Fancher were at an increased risk of kidney cancer through
10:04:29 their exposure to the water at Camp Lejeune.
10:04:30 Your Honor has heard the first phases of the water

10:04:35 model, the general causation issues. We're not going to get
10:04:39 into that during this trial in any deep way, but what we're
10:04:43 going to focus on, Your Honor, is specific causation and
10:04:46 damages. You'll hear from Dr. Reynolds, who is an exposure
10:04:51 scientist, who estimated Mr. Fancher's level of exposure, and
10:04:55 she will come up with a calculation of a reasonable amount of
10:04:59 his exposure.
10:05:00 Dr. Joe Del Pizzo, he's a urologist, a urologic
10:05:04 surgeon. He will provide an opinion that, in his judgment, in
10:05:10 his professional opinion, Mr. Fancher's kidney cancer was a
10:05:14 direct result of his exposure to the water at Camp Lejeune. He
10:05:18 will do a differential diagnosis and, Your Honor, we believe he
10:05:21 is the only witness you're going to hear in this case that has
10:05:24 done a differential diagnosis.
10:05:25 Your Honor, finally, you'll hear about Mr. Fancher's
10:05:28 damages. You will hear about the surgery. He had two ribs
10:05:33 removed, lost his kidney. It was a very painful experience.
10:05:38 He will explain that he got an infection that had to be
10:05:41 treated. And he also developed a bulge on the right side of
10:05:45 his abdomen, Your Honor, which he has lived with every day for
10:05:48 nearly 30 days -- I mean, I'm sorry, for nearly 30 years. He
10:05:52 uses binders and girdles to address that situation. It changed
10:05:57 his life, Judge. For the past 30 years, he's not the man that
10:06:02 he was, and it's going to continue for the rest of his life.
10:06:05 Your Honor, at the end of this case, we're going to

10:06:11 ask that the Court find justice for this Marine after 30 years
10:06:16 of living with a very difficult and painful situation, and
10:06:21 we're going to ask that the Court award a substantial judgment
10:06:24 in favor of David Fancher.
10:06:26 THE COURT: All right. Thank you very much. I'll
10:06:28 hear from the Government.
10:06:30 MR. GUYNN: Thank you, Your Honor.
10:06:31 THE COURT: Good morning.
10:06:31 MR. GUYNN: Good morning. My name is Jonathan Guynn.
10:06:34 I represent the United States. So, Your Honor, there are three
10:06:38 facts in this case that are not in dispute that you just heard
10:06:41 about. Mr. Fancher is a Marine who served his county and was
10:06:44 stationed at a time at Camp Lejeune. Second, some of the water
10:06:50 at Camp Lejeune had contaminants in it. And third, Mr. Fancher
10:06:54 did develop kidney cancer.
10:06:55 We don't intend to minimize any of those facts in
10:06:59 this trial, but, Your Honor, those facts do not answer the
10:07:03 question that you have been asked to consider in this case, and
10:07:06 that question is, has Mr. Fancher proved that the water that he
10:07:11 personally encountered at Camp Lejeune caused his kidney
10:07:14 cancer?
10:07:14 Permission to approach, Your Honor.
10:07:17 THE COURT: Yeah.
10:07:21 MR. GUYNN: Now, Your Honor, answering that question
10:07:25 requires proof. It requires proof, Your Honor, of the actual

10:07:34 water that Mr. Fancher encountered and the chemicals that were
10:07:38 in that water at Camp Lejeune. It requires proof that at his
10:07:42 level of exposure, that those chemicals could cause his
10:07:46 disease. It requires proof that at his level of exposure, the
10:07:50 chemicals did cause his disease.
10:07:53 And then if Your Honor finds that the United States
10:07:56 is liable based on those elements, which we don't think that
10:07:58 you should, then we will get to damages, which he needs to
10:08:02 prove as well, and then it's the United States's burden to
10:08:05 prove offsets that are -- that apply.
10:08:07 Your Honor, we're confident that after you hear the
10:08:12 evidence in this -- in this case, you'll find that Mr. Fancher
10:08:15 has not met his burden on those elements. And, in fact, this
10:08:20 case is about two really important basic principles, Your
10:08:23 Honor. One, what you suspect is not the same as what you know.
10:08:28 And then, two, in a toxic tort like this, we need the science
10:08:33 to connect the dots.
10:08:35 So, Your Honor, I want to just start very briefly by
10:08:39 just putting the evidence that you'll hear in this case in
10:08:43 context. What is the Camp Lejeune Justice Act? What does it
10:08:48 require? And in particular, what does it require Mr. Fancher
10:08:51 to prove in this case? The Camp Lejeune Justice Act is not a
10:08:57 compensation program.
10:08:57 Your Honor, I'm a senior political appointee at the
10:09:01 Department of Justice. I am the Deputy Assistant Attorney

10:09:03 General overseeing the entire Torts Branch for the Civil
10:09:07 Division at the Department of Justice. As part of my job
10:09:12 responsibilities, I oversee the United States's implementation
10:09:15 of the Radiation Exposure Compensation Act, the 911 Victims
10:09:20 Compensation Fund, and the National Vaccine Injury Compensation
10:09:25 Program.
10:09:25 Your Honor, the Camp Lejeune Justice Act is very
10:09:30 different from those programs. Unlike those programs, the Camp
10:09:34 Lejeune Justice Act does not provide an administrative process
10:09:38 for compensation. It does not include a table of compensable
10:09:42 injuries. It does not include a schedule of benefits to be
10:09:46 provided to claimants. It does not include eligibility
10:09:51 criteria that if a claimant meets, they're entitled to
10:09:54 compensation.
10:09:54 It does something very different. It requires a
10:09:57 claimant to come prove their case in court. So the Congress's
10:10:04 purpose in passing the Camp Lejeune Justice Act could be fully
10:10:07 realized if, at the end of this trial, Mr. Fancher doesn't
10:10:10 recover any damages. That would mean, Your Honor, that this
10:10:14 Court applied the statute, but Mr. Fancher didn't meet his
10:10:18 burden. The Camp Lejeune Justice Act is not about
10:10:21 compensation. It's about providing veterans and civilians who
10:10:24 were present at Camp Lejeune an opportunity to prove their case
10:10:28 in court.
10:10:29 So I want to go back to these elements, and I'll very

briefly, Your Honor, try to go through each one because I know we're eager to get to the main ticket items. So exposure, exposure, Your Honor, the evidence has established, Your Honor, that Camp Lejeune was a sprawling military base. It was huge. It covers the same footprint as the city of Raleigh.

There were nine water distribution systems at Camp Lejeune, two of which had water contaminants found in them, and then a third that occasionally had water contaminants as well. So as a result -- and those water systems, Your Honor, they served different parts of Camp Lejeune at different times. Each of those water systems had different contaminants in them at different concentrations. So where Mr. Fancher was, or where any Camp Lejeune plaintiff was mattered. When they were there mattered. What water they personally encountered mattered. And they need to prove those things.

Now, Your Honor, Mr. Fancher and his team could have hired a hydrologist, a hydrogeologist, an environmental scientist to recreate the chemicals in the water that Mr. Fancher encountered, but they didn't do that. Instead, Your Honor, they relied on the ATSDR's water model, which we just heard about.

Now, Your Honor, the evidence has established that that water model was not designed and was not built for the purpose that they've used it. That water model was significantly restricted in the data that those scientists had

10:12:08 as they were building it, and they also used assumptions that
10:12:11 are not appropriate to reconstruct individual exposure. And
10:12:15 that's not coming from me. That's coming from them.
10:12:17 The ATSDR said exposure estimates in them -- in their
10:12:22 model cannot be used alone to determine whether you or your
10:12:27 family suffered any health effects as a result of past exposure
10:12:31 to TCE-contaminated drinking water at U.S. Marine Corps Base
10:12:34 Camp Lejeune.
10:12:35 And, Your Honor, that's not us trashing this model.
10:12:39 It's common for a certain type of model or a data set to be
10:12:45 appropriate for a population-level policy or health policy
10:12:49 decisions, and not for another.
10:12:50 And I want to give you an analogy that I think will
10:12:52 bring this home. Think about the census. Every year, every
10:12:56 ten years, the census gathers information about Americans all
10:13:01 around the United States. And one of the things that they
10:13:04 gather is household income, and they use that to develop
10:13:09 average household incomes in ZIP codes. And what do they do
10:13:12 with that, Your Honor? They use that to decide where should
10:13:16 they allocate resources for opportunity zones, where should
10:13:20 they send resources to build schools or to build low income
10:13:24 housing. They use that average household income in a ZIP code
10:13:27 to make those decisions.
10:13:29 But, Your Honor, if a plaintiff from one of those ZIP
10:13:33 codes is hurt and then has to go into court and tries to prove

their damages, it would be absurd for them to use the average household income for that ZIP code in their damages case. They'd be laughed out of court.

What would -- what do we need to do instead? We need to look at their job, their salary, their education, the trajectory of their career. We need to look at all manner of individualized data to determine what happened to them. That is what plaintiffs are doing in this case, Your Honor. They're using the ZIP code data.

Now, unfortunately, Your Honor, because they've done that, all of Mr. Fancher's exposure evidence relies on that ATSDR model, which itself says it is unfit and unreliable for the purpose that they're using it for. It expressly disclaims using it for that purpose. So as a result, Your Honor, there is no reliable evidence about what Mr. Fancher was exposed to. All you're left is guesswork and conjecture and speculation about what he encountered, and then voodoo science by his experts, who used that data to try to project what he was actually experiencing -- he actually experienced.

Okay, Your Honor, general causation, now, my friend said there's no reasonable dispute about whether the chemicals in Camp Lejeune -- in the Camp Lejeune water can cause kidney cancer. As you know, the United States does not agree, and we think that we more than reasonably disagree with that.

Now, Your Honor, there are five chemicals that in

10:15:04 their papers, they have highlighted as being capable or having
10:15:09 caused Mr. Fancher's kidney cancer, benzene, PCE, DCE, vinyl
10:15:16 chloride and TCE. Now, as to the first four, benzene, PCE, DCE
10:15:22 and vinyl chloride, there is no credible evidence that supports
10:15:28 any causation of those chemicals and kidney cancer at any
10:15:33 exposure level, let alone the low exposure levels at Camp
10:15:35 Lejeune. TCE is different though, Your Honor, as you heard at
10:15:38 the last trial. There is some evidence that does support that
10:15:44 TCE can cause kidney cancer, but only at very high occupational
10:15:49 exposure levels.

10:15:49 Now, Your Honor, you remember hearing even from
10:15:54 plaintiff's own experts in the *Mousser* trial that there's this
10:15:58 concept called the dose response, and that is an absolutely
10:16:05 critical issue to consider in this case. In fact, this may be
10:16:07 the most important question of all in this entire trial. It is
10:16:10 a fundamentally different thing to say that a chemical can
10:16:14 cause kidney cancer than to say that it can cause kidney cancer
10:16:19 at this level.

10:16:20 And if you recall, Your Honor, the experts on both
10:16:23 sides told us that we have protective mechanisms in our bodies
10:16:27 as human beings that can repair damage that's caused by our
10:16:33 internal processes and also by carcinogens that we encounter.
10:16:38 And so, as a result, there are certain levels of exposure to,
10:16:43 you know, lots of things in life, including dangerous chemicals
10:16:47 where there will be no effect whatsoever at a certain level of

10:16:50 dosage. But it's only after that dosage gets higher and higher
10:16:52 and higher that there might -- we might start seeing problems,
10:16:56 we might start seeing diseases like cancer.
10:16:58 Okay. Why is that important, Your Honor? That's
10:17:03 important because the only evidence that -- the only credible
10:17:09 evidence in the epidemiological science that shows that there
10:17:12 is some connection between TCE and kidney cancer are at
10:17:18 massively high levels of exposure that don't remotely resemble
10:17:21 what even their expert says was in the Camp Lejeune water.
10:17:24 In fact, Your Honor, if -- you probably can't see it
10:17:29 from here, so let me just -- let me just try to just describe
10:17:32 this to scale. If we were to try to visualize in our head what
10:17:36 Mr. Mousser's exposure looks like compared to the -- the most
10:17:40 reliable studies that do find that there is some connection
10:17:43 between TCE and kidney cancer, it would be like a five-and-a-
10:17:46 half-foot tall person standing next to the Washington Monument
10:17:51 stacked 28 times. This is a massive difference.
10:17:57 Mr. Mousser cannot simply point to different people
10:18:01 in different circumstances, at different exposure levels, and
10:18:05 claim, Your Honor, that the same conclusions apply to him.
10:18:08 They just don't. In fact, Your Honor, the evidence simply just
10:18:18 does not support that at the Camp Lejeune exposure levels, TCE
10:18:24 can cause kidney cancer. The dose response says there is no
10:18:28 general causation in this case, and that's what the
10:18:31 epidemiological evidence says as well.

10:18:32 Okay, so now specific causation. Your Honor, on
10:18:37 specific causation, what a scientist should do is do something
10:18:42 called a differential diagnosis. That's where they think about
10:18:46 what are all -- and, in fact, you heard that Mr. Fancher's
10:18:50 urologist did exactly that. Let's think about it. You've got
10:18:53 a cancer. Well, what is there in your background that could
10:18:57 have contributed to that cancer? And kidney cancer, Your
10:19:00 Honor, is a very well understood disease. It's one of the most
10:19:03 common cancers that there are.
10:19:05 So the risk factors for kidney cancer, this isn't --
10:19:09 this isn't to scale. There are many, but this part is to
10:19:14 scale, and I'll get to that in one moment. So what are some
10:19:16 risk factors? Chronic kidney disease, sex. Men get kidney
10:19:22 cancer more, unfortunately. Obesity, smoking. Now, that was
10:19:26 an issue in the last trial, but it's not in this one.
10:19:30 Occupational exposures, and I'll come back to that.
10:19:32 Hypertension, age, genetics, race.
10:19:37 So there is a -- there is a huge problem here, Your
10:19:42 Honor, as you'll see, in their specific causation evidence. In
10:19:45 fact, there's going to be two independent reasons why you're
10:19:48 going to have to throw out -- we think that you're going to
10:19:50 have to throw out their specific causation evidence, Your
10:19:52 Honor, and that's for the -- that's for this: One, Mr. Fancher
10:19:58 just did not experience an occupational exposure.
10:20:00 So let's even assume, okay, he didn't have chronic

10:20:03 kidney disease. Fine, that's out. That didn't happen. He is
10:20:08 a male, so we'll leave that one in. No obesity, we'll concede
10:20:12 that. No smoking, fine. Occupational exposure, let's circle
10:20:17 back there. Hypertension, they just said no. Fine. Age, no.
10:20:24 Knock that one out. Genetics, nope. Race, no. Unfortunately,
10:20:29 African-Americans, Latinos and Native Americans experience
10:20:33 kidney cancer more than Caucasians like Mr. Fancher, so that's
10:20:36 out as well.
10:20:36 So does that leave us with just, you know, two,
10:20:40 including occupational exposures? No, not at all. We've still
10:20:43 got the biggest one of all, idiopathy, which we'll get to in
10:20:46 one moment. But occupational exposures, is that even an option
10:20:51 here? It's not.
10:20:52 As I mentioned to you earlier, Your Honor, an
10:20:56 occupational exposure is many, many, many times higher anything
10:21:01 that Mr. Fancher experienced. What he experienced at Camp
10:21:04 Lejeune, now, they've said, you know, over and over was
10:21:06 poisonous water, it was highly contaminated, it was a superfund
10:21:12 site.
10:21:12 Yeah, but how much water did he -- how much TCE was
10:21:15 in the water? That's the key question, not these scary words.
10:21:19 Well, the answer is a part per billion of TCE was in the water.
10:21:23 That's one drop in an Olympic swimming pool, and they are not
10:21:26 going to disagree with that. So, okay, so no occupational
10:21:33 exposure, so that is out. And so as a result, specific

causation is over. It's not going to happen.

But let's even -- let's even assume that that was still on the table. We still have the 500-foot elephant in the room -- pound elephant in the room, idiopathy. Idiopathy. You know, the evidence in this case, including from their own witnesses, will establish that the cause of most kidney cancers is unknown. That doesn't mean there wasn't a cause. It means that the -- where the science is right now, Your Honor, is that we know that there's something operating in their background that's causing kidney cancer, and we know it's not these things. These are well understood. They're well quantified, as is this, as is idiopathy.

And, unfortunately, Mr. Fancher's specific causation expert just threw this out, just said because I -- because the lawyers told me that there is an occupational exposure, I don't need to consider that. That's not scientific. That's not appropriate. The science does not permit that.

Okay. Damages, Your Honor, closing, or, Your Honor, home stretch. Now, Your Honor, we don't think that plaintiffs should even get to their damages case, but if they do, Your Honor, I want you to keep in mind several things.

First off, the Camp Lejeune Justice Act requires them to prove their damages, okay? So for each measure of damages that they request, have they proved it? Also, is the request that they've asked for consistent with the mandate in the Camp

10:23:12 Lejeune Justice Act that they only obtain appropriate relief?
10:23:16 Now, Your Honor, we recognize a kidney cancer
10:23:22 diagnosis is serious. Going through cancer treatment, that's
10:23:27 scary, that's frightening, that's difficult. We're not saying
10:23:30 that that's not true. But what we are saying, Your Honor, is
10:23:33 that the evidence will show that Mr. Fancher's caregivers
10:23:38 caught his kidney cancer early, and, in fact, he received
10:23:42 outstanding care from the VA. He has been cured. His kidney
10:23:46 cancer -- his kidney function is stable. There has been no
10:23:51 change in his life expectancy.
10:23:52 You'll also hear evidence about his daily life.
10:23:55 You'll hear that he continued to work, to be very involved with
10:23:58 his family. Now, I'm not suggesting, Your Honor, that just
10:24:03 because somebody continues to work or be involved in their
10:24:06 family life, that that means they haven't gone through
10:24:09 something serious, but what I am saying is that they've got to
10:24:12 prove their damages. What income was lost? What medical
10:24:18 expenses did he pay for? What -- how much of his life has been
10:24:21 cut off? What future medical expenses does he anticipate?
10:24:28 Damages must be proven, too, Your Honor, and he's just not
10:24:31 going to be able to do that.
10:24:31 All right. Finally, Your Honor, in conclusion, as
10:24:39 you listen to the evidence, please, please, please keep in mind
10:24:44 each of these elements of a Camp Lejeune Justice Act claim that
10:24:49 they have an obligation to prove. We're confident you're going

10:24:52 to find that they haven't proved them.
10:24:53 And, Your Honor, I just want to remind you that this
10:24:58 case is not about what we think happened. It's not about what
10:25:01 could have happened. It's about what they've proven. What you
10:25:04 think, what you suspect is not what you know, and in a case
10:25:07 like this, the science has to connect the dots. Thank you,
10:25:10 Your Honor.
10:25:10 THE COURT: All right. Thank you.
10:25:20 MR. QUINN: Your Honor, at this time, we would call
10:25:22 Kelly Reynolds as our first witness.
10:25:24 THE COURT: Okay.
10:25:24 THE CLERK: Please place your left hand on the Bible,
10:25:24 raise your right hand, and state and spell your name for the
10:25:24 record.
10:25:24 THE WITNESS: Kelly Reynolds, K-E-L-L-Y
10:25:24 R-E-Y-N-O-L-D-S.
10:25:24 KELLY A. REYNOLDS, MSPH, PH.D.,
10:25:47 was sworn at 10:25 a.m., and testified as follows:
10:25:47 DIRECT EXAMINATION BY MR QUINN:
10:25:47 Q. Good morning, ma'am.
10:25:47 A. Good morning.
10:26:11 Q. And you testified, ma'am, did you not, in the first trial,
10:26:14 we had, the Mousser case?
10:26:17 A. Yes, I did.
10:26:18 Q. I will not spend a lot of time -- unless I have to, I will

10:26:22 not spend a lot of time on your background because I think the
10:26:25 Court has already heard about it, but just if you could remind
10:26:28 the Court what it is that you do for a living.
10:26:31 A. Yes, I'm an environmental scientist and an exposure
10:26:34 assessor.
10:26:34 Q. Okay. And what does it mean to be an exposure assessor?
10:26:38 A. Well, in environmental sciences, we first recognize that
10:26:41 hazards in the environment can cause health effects to exposed
10:26:41 populations. And then in exposure assessment, we work to
10:26:41 quantify how people were exposed, and that can be driven by
10:26:52 their behaviors, their duration, and, you know, ingestion
10:26:57 volume, something like that.
10:26:59 Q. And creating exposure assessments, is that something that
10:27:01 you do all the time?
10:27:03 THE WITNESS: Yes, all the time.
10:27:04 Q. Okay. And did you -- have you prepared and submitted a CV
10:27:08 in this case?
10:27:08 A. Yes.
10:27:09 Q. Okay. And if you could just look at it briefly, the
10:27:12 notebook in front of you. It's Exhibit 98.
10:27:28 A. Yes.
10:27:28 Q. Does that appear to be a copy of your CV?
10:27:31 A. Yes, it is.
10:27:31 MR. QUINN: At this time, Your Honor, we would move
10:27:33 Exhibit 98 into evidence.

10:27:35 THE COURT: It'll be received.
10:27:35 (Plaintiff's Exhibit Number 98 received.)
10:27:35 MR. QUINN: And just for the sake of efficiency, at
10:27:38 this time, Your Honor, we would tender Dr. Reynolds as an
10:27:42 expert in environmental health science with a specific focus in
10:27:45 exposure science.
10:27:46 THE COURT: The Court will accept the witness and
10:27:48 allow her to express her opinions.
10:27:51 MR. QUINN: Thank you.
10:27:51 Q. Dr. Reynolds, what are you here to talk about today?
10:27:55 A. I'm here to talk about the exposure assessment I did for
10:27:58 Mr. Fancher, which was looking at exposures at Camp Lejeune to
10:28:03 drinking water contaminated with TCE, PCE, vinyl chloride and
10:28:07 benzene.
10:28:08 Q. Did you prepare a written report?
10:28:09 A. I did, yes.
10:28:10 Q. If you could look at Exhibit 94. It should also be in
10:28:13 front of you.
10:28:21 A. Yes.
10:28:22 Q. Does that appear to be a copy of your report in this case?
10:28:24 A. It does, yes.
10:28:24 MR. QUINN: Yes, Your Honor, we would move Exhibit 94
10:28:27 into evidence.
10:28:28 THE COURT: It'll be received.
10:28:28 (Plaintiff's Exhibit Number 94 received.)

10:28:29 Q. Ma'am, what are your -- and just in general terms, what
10:28:32 are your opinions in this case?
10:28:35 A. In general terms, I looked at exposure behaviors, meaning
10:28:41 ingestion volumes for Mr. Fancher during his time at Camp
10:28:44 Lejeune, and I calculated using multiple scenarios for what his
10:28:49 ingestion exposures might be to calculate his exposure to TCE,
10:28:54 PCE, benzene and vinyl chloride.
10:28:57 Q. And did you use just a standard method that's used in
10:29:01 exposure science?
10:29:01 A. Yes.
10:29:02 Q. Is it the same methodology that you teach your students
10:29:05 when calculating consumption --
10:29:06 A. It is.
10:29:06 Q. -- and exposure?
10:29:07 A. It is, yes.
10:29:08 Q. Okay. Did you prepare an exhibit to help illustrate your
10:29:13 testimony?
10:29:14 A. Yes.
10:29:14 Q. Okay. If you could turn to Exhibit 123. I think it's the
10:29:19 final document in that notebook.
10:29:40 A. Yes.
10:29:41 Q. And will it help you explain your testimony to use this
10:29:44 illustrative exhibit?
10:29:45 A. Yes.
10:29:45 MR. QUINN: At this time, Your Honor, we would move

10:29:47 Exhibit 123 into evidence.
10:29:48 THE COURT: It's received.
10:29:50 MR. QUINN: Thank you.
10:29:51 (Plaintiff's Exhibit Number 123 received.)
10:29:51 Q. Now, ma'am, does the amount of finished water at Camp Lejeune that a Marine drinks, does it alter your calculations of their consumption of toxins?
10:29:55 A. Yes. The more water that is consumed, the more exposure you'll have to the contaminants in that water.
10:30:00 Q. And did you prepare a page in this exhibit we're looking at, 123, a page that explains your various assumptions about the ingestion of water by Mr. Fancher?
10:30:08 A. Yes.
10:30:11 Q. Is it page 1?
10:30:17 A. Yes.
10:30:19 Q. If you could look at page 1. Now, how did you determine, ma'am, how much water that Mr. Fancher was drinking while he was on base at Camp Lejeune?
10:30:20 A. Well, I looked at three different scenarios. The first scenario that I submitted in my report was looking at a potential exposure of one liter per day. Now, he would have drank more than that. Almost everybody drinks more than one liter a day, but we use that as a baseline so that we could keep the calculations simple. And so we just assumed one liter a day was consumed every day, and that was considering if he
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10:30:57 was at work or at home.
10:30:59 And then the second scenario, we used the ATSDR default
10:31:04 values. So ATSDR has default values for Marines in particular,
10:31:08 and it assumes that on three training days a week, the
10:31:14 consumption level is 6 liters per day, and on four routine
10:31:18 activity days per week, the consumption rate is 3.1 liters per
10:31:22 day. So that averages out to about 4.34 liters a day, if you
10:31:27 look at it over a week's average and those assumed activities.
10:31:31 So ATSDR's exposure assumptions were for -- specifically for
10:31:35 Camp Lejeune Marines that they published.
10:31:37 The third scenario I looked at was using military *Field*
10:31:43 *Manuals* and Mr. Fancher's exact testimony of what he recalled
10:31:49 were the number of training days versus the number of routine
10:31:52 days. And he reported in his deposition that he had two
10:31:56 training days a week, where ATSDR typically assumed three
10:32:00 training days a week.
10:32:01 So he reported two training days a week and five routine
10:32:05 days, and when you apply that rate of training versus routine
10:32:09 days and the differential level of consumption volumes on those
10:32:13 different activity days, the *Field Manuals* estimate 8.52 liters
10:32:17 a day on the training days, and 5.2 liters per day on the five
10:32:22 routine days, so that averages to 6.15 liters a day.
10:32:27 Q. Now, Dr. Reynolds, why is it that you created three
10:32:30 separate ingestion scenarios?
10:32:32 A. When you're reconstructing historical data, there's some

10:32:35 uncertainty. You know, maybe Mr. Fancher couldn't exactly
10:32:38 recall what he drank on a certain period of time, and so that's
10:32:43 one of the reasons why we use the ATSDR default because that
10:32:47 incorporates survey from a population of Marines and estimating
10:32:51 what their exposures might be. And then the different
10:32:54 consumption levels were just plausible values ranging from one
10:32:58 liter to 6.5 liters a day, and it just gives you an estimate of
10:33:02 where the values of his consumption might be.
10:33:06 Q. Okay. Now, as part of your work in this case, did you
10:33:09 reconstruct the number of days that Mr. Fancher was on base at
10:33:12 Camp Lejeune?
10:33:13 A. I did, yes.
10:33:14 Q. Okay. If you could turn to page 2 of your illustrative
10:33:17 Exhibit 123, does this page set forth your opinions on the
10:33:23 number of days that Mr. Fancher was on base?
10:33:26 A. Yes.
10:33:26 Q. Okay. What records did you use to reconstruct
10:33:30 Mr. Fancher's time on base?
10:33:32 A. I used both Mr. Fancher's deposition testimony and also
10:33:37 military documents, military records.
10:33:40 Q. And in your field, is it common to use these types of
10:33:43 records to reconstruct historical events?
10:33:46 A. Yes, it is.
10:33:48 Q. Now, while Mr. Fancher -- well, actually, let me ask this.
10:33:52 During what period of time was Mr. Fancher assigned to Camp

10:33:56 Lejeune?
10:33:58 A. Overall, he was assigned at Camp Lejeune from
10:34:01 October 16th, 1979, to June 12th, 1981.
10:34:05 Q. While Mr. Fancher was assigned to Camp Lejeune during that
10:34:09 period, he wasn't always present on base during that period,
10:34:12 was he?
10:34:13 A. No, he wasn't.
10:34:14 Q. Okay. Well, talk a little bit about when he was on base
10:34:16 and when he was off base.
10:34:17 A. Sure. So for any days that he had annual leave or where
10:34:22 he was deployed to a different location, I didn't count any of
10:34:25 those days in his exposure assessment, so those days were
10:34:30 subtracted. They ended up totaling about 269 days. And I have
10:34:34 a list of specific dates and the locations of where he was, and
10:34:38 if we look, for example, from May 9th to December 2nd, 1980, he
10:34:43 was away on a Mediterranean deployment, and again he was away
10:34:47 on a deployment March 4th to April 3rd in 1981.
10:34:53 Q. Now, when Mr. Fancher was on base, what part of base was
10:34:56 he working at?
10:34:58 A. When he was on base, he always worked at Hadnot Point.
10:35:02 Q. Now, were you able to make a determination about the
10:35:05 specific number of days Mr. Fancher was on base at Camp
10:35:08 Lejeune?
10:35:09 A. Yes, I was. Overall, he was on base 337 days, and some of
10:35:16 that time he lived on base, and some of that time he lived off

10:35:19 base.
10:35:20 Q. Now, in preparing your report, did you familiarize
10:35:24 yourself with the monthly contaminant concentrations at Hadnot
10:35:28 Point during the period that Mr. Fancher was on base?
10:35:32 A. Yes.
10:35:32 MR. QUINN: Your Honor, if I may approach the easel.
10:35:34 THE COURT: Yeah.
10:35:34 Q. Did you prepare a blow-up, ma'am, to illustrate your
10:35:41 testimony about the time that Mr. Fancher was on base?
10:35:44 A. Yes.
10:35:46 Q. Okay, so if this -- this blow-up that we're looking at,
10:35:48 ma'am, if you could please describe for the Court what chemical
10:35:52 that we're talking about.
10:35:53 A. It's TCE, trichloroethylene.
10:35:56 Q. And these lines here, what do these lines on this blow-up
10:36:00 illustrate?
10:36:01 A. Those lines indicate -- the dark, black line indicates the
10:36:05 ATSDR modeled contaminant concentration, TCE concentration in
10:36:09 the water over time.
10:36:11 Q. Now, this orange dot that's on this blow-up, what does
10:36:16 that illustrate?
10:36:17 A. That represents the maximum concentration for that
10:36:21 contaminant in the water.
10:36:22 Q. Okay. And the red line that we see on the blow-up, what
10:36:25 does that red line reflect?

10:36:28 A. That's the ATSDR's Cancer Risk Evaluation Guide.
10:36:32 Q. Okay. And you see where it says, "Fancher time on base"?
10:36:34 A. Yes.
10:36:35 Q. Okay. So the red line, does that correspond to the period of time during which Mr. Fancher was on base at Hadnot Point?
10:36:40 A. Yes, it does.
10:36:43 Q. Okay. So is it fair to say, ma'am, that Mr. Fancher was on base during what is just about the height of the TCE contamination at Hadnot Point?
10:36:52 A. Yes. So the broader red line shows Mr. Fancher's time on base, and that was from October 1979 to June 1981, and that is during the highest concentrations that were estimated and measured by ATSDR in the water model.
10:37:08 Q. Okay.
10:37:08 MR. QUINN: I'm going to move this document into evidence, Your Honor, as Exhibit 124.
10:37:12 THE COURT: Received.
10:37:12 (Plaintiff's Exhibit Number 124 received.)
10:37:12 Q. Did you prepare a similar blow-up, Dr. Reynolds, with respect to all VOCs that were on base?
10:37:21 A. Yes.
10:37:23 Q. And could you just explain to the Court what we mean when we say all the VOCs instead of just talking about TCE? What's all the VOCs?
10:37:29 A. Yeah, so other volatile organic compounds include PCE,

10:37:35 vinyl chloride and benzene.
10:37:40 Q. And tell the Court a little bit about what this blow-up
10:37:43 illustrates.
10:37:44 A. Very similarly, this shows the other contaminants and the
10:37:48 concentrations in the ATSDR, the black lines, in the ATSDR
10:37:53 model concentrations per month, and then the thicker red lines
10:37:58 that are vertical show the time that Mr. Fancher was on base.
10:38:03 And for all of the contaminants, he was on base during some of
10:38:07 the highest concentration ranges.
10:38:08 Q. So, to be clear, these red lines reflect when Mr. Fancher
10:38:13 was on base, and then the orange dots reflect the maximum
10:38:16 levels for each VOC at issue in this case?
10:38:19 A. That's correct.
10:38:19 Q. So he was on base just about the height of the
10:38:23 contamination for these various VOCs, vinyl chloride, DCE, TCE,
10:38:27 PCE and benzene?
10:38:28 A. Correct.
10:38:29 THE COURT: Do you know why the amount of
10:38:32 contamination may have fluctuated?
10:38:35 THE WITNESS: These are modeled results, and I think
10:38:38 from some of the specific samples that were collected, when
10:38:42 they monitored over time, there could be a lot of different
10:38:45 reasons, and it's -- a lot of that is in the complexities of
10:38:48 the water model, but it could be seasonal differences, it could
10:38:52 be flow in fate and transport patterns. So there's

fluctuation, which is pretty common in water modeling. You have fluctuation of the concentrations over time due to a variety of situations. But you can see during the time that was modeled around Mr. Fancher's time on base, it was fairly consistent ranges in the values that were observed and modeled as well.

THE COURT: Thank you.

MR. QUINN: And I'm going to mark this blow-up we've been talking about, the VOC blow-up, as Plaintiff's Exhibit 125 and move this into evidence, Your Honor.

THE COURT: It'll be received.

(Plaintiff's Exhibit Number 125 received.)

Q. Now, as part of your methodology, ma'am, did you attempt to determine how many days in a given month that Mr. Fancher was on base?

A. Yes.

Q. Why did you do that? Why is that important?

A. It's important to consider which months specifically he was present on base because the concentrations of the contaminants did vary by month, is how the ATSDR reported them, and so it was important to consider how many days per month.

I didn't assume he was on base the entire month. I specifically looked at what days he was present, and I matched that with the concentrations that were reported in the water at that time.

So to get a cumulative exposure level, I looked at the days per month, those concentrations, calculated those together, and then I added his time over each month with the different concentrations as they varied to get his cumulative exposure on the specific days he was actually exposed.

THE COURT: Wouldn't consumption change from different periods of the year? I mean, in January and February you have lower consumption than in July and August?

THE WITNESS: Yes, we do know that people consume water at different levels over different time periods and different seasons, but we don't know exactly what days and which activities he did on certain days. So what we do is average it over the months' time.

THE COURT: Okay.

THE WITNESS: So we provide an average to, you know, kind of take care of that uncertainty of specific days and events.

Q. Now, Dr. Reynolds, you've already talked about how Mr. Fancher worked on base. On the other hand, did Mr. Fancher always reside on base?

A. No, he didn't.

Q. Okay. Tell us a little bit about Mr. Fancher's residences during his period of time he was assigned to Camp Lejeune.

A. Yeah, so part of the time, specifically 166 days, from what I could gather from his deposition and military records,

10:41:34 he lived in the barracks on base, and that was at Hadnot Point.
10:41:37 So he lived and worked on base 166 of the 337 days he was
10:41:44 actually on base. And then 171 days he lived off base, so when
10:41:49 he -- his residence was off base. It was at Webb Apartments,
10:41:52 which was not at Hadnot Point and not served by the
10:41:56 contaminated water supply, and so during those days, I did not
10:41:59 count any exposure for any residential time.
10:42:02 Q. Okay. So it change -- it alters your calculations,
10:42:05 depending on whether Mr. Mousser was residing on base versus
10:42:08 off base?
10:42:10 A. Correct.
10:42:10 Q. You took that into account?
10:42:11 A. That's correct.
10:42:12 Q. Okay.
10:42:12 A. I didn't count any of his nonresidential exposure -- or
10:42:15 his nonresidential ingestion levels of drinking water would not
10:42:19 count as part of his exposure at Camp Lejeune.
10:42:21 Q. If you can turn the page 3 in your illustrative, please.
10:42:24 Does this document illustrate your calculations for the periods
10:42:29 of time during which Mr. Mousser both lived and worked on base?
10:42:34 A. Yes, it does.
10:42:37 Q. Describe your calculations during that period that he both
10:42:39 lived and worked on base.
10:42:41 A. Yes, so when he lived and worked on base, a
10:42:43 hundred percent of his water consumption would have been from

10:42:47 the Hadnot Point water supply since he worked at Hadnot Point
10:42:50 and he lived on Mainside at Hadnot Point as well. So we just
10:42:54 assume for the 166 days that 24 hours a day, whether they be
10:42:59 training days or routine days, which had different consumption
10:43:03 levels, assumed that all of his exposure and the water he drank
10:43:07 was from Camp Lejeune.
10:43:10 Q. Now, if you can turn to page 4 of your Exhibit 123.
10:43:12 Did -- what -- describe to the Court what this page represents.
10:43:20 A. Yes, this page is looking at when he worked on base but
10:43:25 lived off base, and so we have some ways that we adjust for
10:43:31 residential exposure.
10:43:32 So for example, from November 1st, 1979, to May 8th, 1980,
10:43:37 he lived in the Webb Apartments, which were off base, but he
10:43:40 worked at the base every day. So when he was working, I would
10:43:45 count the -- that specific time. On training days, it was two-
10:43:49 thirds of his water consumption I assumed happened at work. On
10:43:53 routine days, I assumed only a third of his water consumption
10:43:56 happened at work, and the rest was -- the other two-thirds
10:43:59 would be at his residence off base at home.
10:44:02 So there were a couple of times in his deposition
10:44:06 Mr. Fancher indicated that he would spend one to two nights per
10:44:11 week, even when he lived off base, staying overnight on base.
10:44:15 So I considered -- I averaged that to 1.5 days a week that he
10:44:20 spent the night on base, and so during those times, I counted
10:44:24 that all of his water would be consumed from the contaminated

10:44:29 water supply. But if he was off base for his residence, which
10:44:33 was 5.5 nights a week, I did not count the water that he would
10:44:37 have consumed at home.
10:44:38 Q. And did you include on page 5 of this exhibit an example
10:44:43 of how this calculation would work during the course of a week
10:44:46 that -- during the period of time he was residing at Webb
10:44:49 Apartments?
10:44:50 A. Yes. So on page 5, this would be a scenario that if he
10:44:53 lived off base in a typical week. So specifically, I used the
10:44:59 ATSDR default scenario with three training days a week and four
10:45:03 routine days a week assumed. So what that means is that on a
10:45:08 training day, ATSDR says a Marine in training would drink 6
10:45:11 liters of water a day, so I only counted two-thirds of that
10:45:15 water because a third of it would have been consumed at home on
10:45:19 training days.
10:45:19 So he said in his deposition that he spent -- on training
10:45:23 days, he would be on base 16 hours a day, and so that's about
10:45:27 two-thirds of his time and two-thirds of his consumption, so
10:45:30 that equals 4 liters a day on training days. And you'll see
10:45:33 from my diagram that on three estimated days -- I have it
10:45:38 written as Monday, Tuesday, Wednesday, but it could have been
10:45:40 any day during the week -- he consumed 4 liters a day on base.
10:45:47 THE COURT: How critical is pinning down the volume
10:45:50 of water that he consumed? I mean, I would think it would be
10:45:53 essential to your diagnosis.

10:45:56 THE WITNESS: It is really important to evaluate.
10:45:58 THE COURT: Because if he didn't drink any water, he can't get cancer.
10:46:00 THE WITNESS: Right. Yes, it is important to evaluate and to consider people's behaviors because different behaviors, like an activity of being in training, would drive a higher rate of ingestion.
10:46:10 THE COURT: Suppose he drank Pepsis all day.
10:46:11 THE WITNESS: Yeah, he reported he did not. In his deposition, he did not drink any sodas. He was a water drinker, so...
10:46:14 THE COURT: Okay.
10:46:19 THE WITNESS: Yeah, no Kool-Aid, no sodas. Water exclusively.
10:46:20 Q. Now, ma'am, based on this methodology, this process we've been talking about, were you able to calculate Mr. Fancher's consumption of TCE, PCE, benzene and vinyl chloride?
10:46:26 A. Yes.
10:46:30 Q. Okay. If you can turn to the last page of your slide deck.
10:46:35 MR. QUINN: And, Your Honor, if I may approach just to put up one more blow-up.
10:46:40 THE COURT: Yeah.
10:46:40 Q. Dr. Reynolds, does this blow-up reflect your -- and also the final page of your slide -- slide deck, does it basically
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10:47:07 reflect your conclusions about how much toxins that Mr. Fancher
10:47:11 consumed while he was on base?
10:47:13 A. Yes, it does.
10:47:14 Q. Okay. If you could just -- let's take TCE as an example.
10:47:19 Describe for the Court, if you could, please, what this
10:47:22 document reflects when it comes to Mr. Fancher's consumption of
10:47:26 TCE while he was at Camp Lejeune.
10:47:27 A. Yeah, so this calculation for TCE looks at the ATSDR
10:47:33 default values of 6 liters per day, three days a week on
10:47:37 training days and 3.1 liters per day, four days a week on
10:47:43 routine days. And so when I calculated that with the
10:47:47 concentrations that were reported each month that Mr. Fancher
10:47:50 was on base, the total mass exposure is 422,266 micrograms of
10:47:58 TCE. If we look at the higher plausible consumption values
10:48:02 from his testimony and the *Field Manuals*, that value is 577,666
10:48:09 total micrograms.
10:48:11 Q. And so you reached -- you made similar conclusions -- when
10:48:15 it comes to the micrograms ingested, you reached similar
10:48:19 conclusions with respect to PCE, vinyl chloride and benzene?
10:48:22 A. That's correct.
10:48:23 Q. Okay. You were -- you were able to provide micrograms
10:48:26 consumed for each of those three chemicals as reflected on this
10:48:28 exhibit?
10:48:29 A. Yes.
10:48:30 Q. Okay. Now, in addition to that, you -- there's a part of

this exhibit that discusses cumulative exposure in micrograms per liter months. What does that mean?
A. Yes. Well, these values have been used in some of the epi studies, and they were cited in the Camp Lejeune Public Health Assessments and Assessment of the Evidence at Camp Lejeune. And the microgram per liter month value comes from taking the monthly concentrations of contaminants in the water for each month that Mr. Fancher was on base and adding them together.

So what it essentially assumes is that he drank one liter on one day, one month, and in that month, in each individual month, and then it added up those concentrations. So the microgram per liter is a total potential concentration if he -- if he was exposed one day a month to one liter of water.
Q. And so, ma'am, would it be fair to say that you included the microgram per liter months analysis in your report because -- to enable other experts to compare your analysis to the Camp Lejeune epidemiological studies?
A. Yes. And the microgram per liter is equivalent to parts per billion. So that's 5,340 parts per billion of TCE in the water for the cumulative months that he was present on base.

MR. QUINN: Thank you, Your Honor. At this time, we have no further questions for Dr. Reynolds.

THE COURT: Any cross?

MR. ANTONUCCI: Yes, Your Honor.

CROSS-EXAMINATION BY MR. ANTONUCCI:

10:50:12 Q. Good morning, Dr. Reynolds. It's nice to see you again.
10:50:23 A. And you.
10:50:24 Q. My name is Giovanni Antonucci. Dr. Reynolds, to confirm, you were retained by the plaintiffs to reconstruct potential water ingestion models for Marines at Camp Lejeune between 1953 and 1987, right?
10:50:30 A. Correct.
10:50:37 Q. You did not reconstruct potential inhalation exposures for the plaintiffs, right?
10:50:38 A. No.
10:50:41 Q. You did not reconstruct potential dermal exposures for the plaintiffs, right?
10:50:42 A. No.
10:50:43 Q. You only reconstructed potential exposures via the ingestion pathway, right?
10:50:46 A. That's correct.
10:50:46 Q. Dr. Reynolds, you did not perform a risk assessment for this case, correct?
10:50:50 A. Correct.
10:50:52 Q. And you agree that risk assessment is the evaluation of environmental hazards and assessment of chemical and microbial exposures in various populations, and the probability of associated health effects on the human population, right?
10:50:54 A. It's a probability assessment, yes. That's the EPA definition of it. It's commonly used in regulatory risk
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10:51:20 assessment for making decisions about whether or not a site
10:51:23 should be managed or cleaned up.
10:51:26 Q. Okay. And once again, that's not something you did here,
10:51:29 right?
10:51:29 A. No.
10:51:32 Q. Okay. You did not in this case offer an opinion about
10:51:35 whether or not any plaintiff's exposure was substi-- excuse me.
10:51:40 You did not in this case offer an opinion about whether or not
10:51:43 any plaintiff's exposure was substantial, correct?
10:51:46 A. Correct. My job was specifically to calculate cumulative
10:51:50 exposure.
10:51:51 Q. You did not offer an opinion about whether any individual
10:51:54 plaintiff's exposure could cause his or her kidney cancer,
10:51:58 right?
10:51:59 A. Correct.
10:52:04 Q. So, Dr. Reynolds, you estimated the total mass of each
10:52:08 chemical Mr. Fancher could have been exposed to in units of
10:52:11 total micrograms, right?
10:52:13 A. Correct.
10:52:14 Q. That was one of the ways in which you expressed your
10:52:17 exposure assessment results, right?
10:52:19 A. Yes.
10:52:20 Q. So total micrograms represents the total amount in
10:52:23 micrograms of each chemical that you estimate Mr. Fancher
10:52:27 ingested during his entire time at Camp Lejeune, right?

10:52:30 A. Correct.
10:52:32 Q. You agree that the unit of total micrograms measures mass,
10:52:48 right?
10:52:48 A. That's correct.
10:52:49 Q. And you agree that micrograms per liter measures
10:52:53 concentration, right?
10:52:55 A. Correct.
10:52:56 Q. And you agree parts per billion and micrograms per liter
10:52:59 are equivalent when you're referring to water, right?
10:53:02 A. Yes.
10:53:05 Q. So, Dr. Reynolds, I --
10:53:08 MR. ANTONUCCI: Your Honor, permission to approach.
10:53:10 THE COURT: Yeah.
10:53:17 Q. Actually, I believe this will be in your binder. I'd
10:53:19 appreciate it if you could turn to Plaintiff's Exhibit 96,
10:53:22 which are your calculations for Mr. Fancher.
10:53:39 A. Okay.
10:53:39 Q. Just let me know when you get there.
10:53:50 A. I go 93, 94, 95, and then to 98. Maybe it's out of order.
10:53:58 Q. All right. I will provide a copy of Plaintiff's
10:54:01 Exhibit 96.
10:54:11 A. Thank you.
10:54:25 Q. So, Dr. Reynolds, for the record, I've handed you
10:54:27 Plaintiff's Exhibit 96. You recognize this as your
10:54:31 calculations for Mr. Fancher, right?

10:54:33 A. Yes, correct.
10:54:34 Q. And this document has the Bates number ending in 92,
10:54:37 right?
10:54:38 A. Yes.
10:54:39 Q. So I'd appreciate it if you could look at the table at the
10:54:42 top of Plaintiff's Exhibit 96. Do you see that table?
10:54:45 A. Yes.
10:54:47 Q. And here you have in this table a column for exposure
10:54:51 period, a column for location, a column for liters per day, and
10:54:56 a column for on-base adjustment, then one final column for
10:55:00 notes, right?
10:55:01 A. Yes.
10:55:02 Q. So for the first row, at the table, at the top of the page
10:55:07 on Plaintiff's Exhibit 96, the exposure period is October 16th,
10:55:12 1979, through October 31st, 1979, correct?
10:55:15 A. Correct.
10:55:17 Q. And during this period, Mr. Fancher was located at Hadnot
10:55:19 Point, right?
10:55:20 A. Yes.
10:55:21 Q. And in the column for on-base adjustment, you wrote "full
10:55:24 exposure," correct?
10:55:25 A. Yes.
10:55:26 Q. And in the notes column you wrote "work days equals
10:55:29 residence days," right?
10:55:30 A. Yes. So a hundred percent of his exposure because he

worked and lived there during that time period was counted in the calculation.
Q. So let's look at the second row in the table at the top of the page on Plaintiff's Exhibit 96.
A. Yes.
Q. So there's two exposure periods in this row, right?
A. Correct.
Q. So the first one is November 1st, 1979 through November 20th, 1979, correct?
A. Yes.
Q. The second is December 10th, 1979, through May 8th, 1980, correct?
A. Yes.
Q. And in the notes column in this second row, you wrote "residence off base; on base one to two days per week average." Did I read that correctly?
A. Yes.
Q. And that's because during those time periods, Mr. Fancher did not reside at Marine Corps Base Camp Lejeune, correct?
A. Correct. He reported that he would spend one to two days per week staying overnight on base, so I averaged the one to two to get 1.5 days per week that he stayed on base and worked on base, so I counted that proportion of drinking water as being residential exposure on base.
Q. And in those two time periods, November 1st, 1979, through

10:56:39 November 20th, 1979, and December 10th, 1979, through May 8th,
10:56:44 1980, Mr. Fancher resided at the Webb Apartments off base in
10:56:47 Jacksonville, right?
10:56:48 A. Yes.
10:56:49 Q. And you agree Mr. Fancher was on annual leave between
10:56:53 November 21st, 1979, and December 9th, 1979?
10:56:59 A. Could you state those dates again?
10:57:01 Q. Mr. Fancher was on annual leave between November 21st,
10:57:05 1979 and December 9th, 1979, correct?
10:57:07 A. Yes.
10:57:09 Q. And during which time he was not residing on base; is that
10:57:13 right?
10:57:13 A. That's correct.
10:57:16 Q. Okay. So, Dr. Reynolds, I'd like to ask you specifically
10:57:20 about your calculation of Mr. Fancher's exposure in microgram
10:57:23 per liter months, and we'll return to your exposure assessment
10:57:27 in total micrograms in just a moment.
10:57:29 A. Okay.
10:57:30 Q. So, Dr. Reynolds, you testified on direct examination that
10:57:34 you calculated Mr. Fancher's exposure to the contaminants of
10:57:38 concern in units of microgram per liter month, right?
10:57:42 A. Yes.
10:57:43 Q. And that's a concentration multiplied by time, right?
10:57:48 A. Yes.
10:57:48 Q. So in other words, it's the concentration of contaminants

10:57:51 in micrograms per liter multiplied by the number of months of
10:57:54 exposure, right?
10:57:58 A. Sort of. It's the concentration in a single month for
10:58:03 each month that he was present on base added together, so
10:58:09 it's -- yeah, I guess if -- I took each -- each -- I didn't
10:58:14 average them together and multiply by 12. I took each month as
10:58:19 a single value that he was present on the -- on base during
10:58:23 that month, and then I added that value over the multiple
10:58:26 months he was present.
10:58:27 Q. Understood. So if a person was on base for one month, you
10:58:32 would multiply micrograms per liter times one month, right?
10:58:36 A. Yes. For that month, yes.
10:58:38 Q. Okay. And for TCE exposure, you calculated a cumulative
10:58:45 microgram per liter month exposure of 5,340 microgram per liter
10:58:50 months, right?
10:58:51 A. Correct.
10:58:53 MR. ANTONUCCI: Permission to approach the easel,
10:58:54 Your Honor.
10:58:55 THE COURT: Yes.
10:59:18 Q. So, Dr. Reynolds, this is an enlargement of a table which
10:59:21 appears in Appendix 7 of your February 7th, 2025, report, which
10:59:26 has been admitted into evidence as Plaintiff's Exhibit 94,
10:59:30 correct?
10:59:40 A. Yes.
10:59:42 MR. ANTONUCCI: And for the record, this enlargement

10:59:44 will be marked for identification as the United States
10:59:46 Exhibit 4000.
10:59:48 Q. So, Dr. Reynolds, to calculate microgram per liter months,
10:59:59 as you just testified, you added up ATSDR's simulated mean
11:00:02 monthly concentration of contaminants in drinking water for
11:00:06 every month that Mr. Fancher was on base, right?
11:00:09 A. Yes. And just to clarify, those concentrations would be
11:00:12 for a single day, not for an entire month. So an entire
11:00:17 month's exposure would be multiplied by the number of days in
11:00:19 the month that he was present. So the way that some of the epi
11:00:24 studies have looked at these values, the microgram per liter
11:00:26 month values, is that's the single value that was estimated to
11:00:30 be there every day of the month. So it's assuming he drank one
11:00:34 liter one day in that month, and it would be 71 micrograms per
11:00:38 liter for the first time period.
11:00:40 Q. Okay. So just to be clear, your testimony is that the
11:00:43 microgram per liter month calculation assumes that an
11:00:47 individual drank one liter on one day in one month; is that
11:00:51 right?
11:00:53 A. Well, it really doesn't assume any ingestion volume. It
11:00:56 just assumes the concentration. So it's saying the
11:00:59 concentration is micrograms per liter is -- so if we look at
11:01:02 the first row, the TCE is 71 micrograms per liter, and the
11:01:06 ATSDR model says it was that concentration every day of the
11:01:10 month during that month. So this calculation is assuming he

11:01:15 was exposed a single time on a single day for that month. So
11:01:19 it would be 71 micrograms per liter on one day's exposure.
11:01:24 Q. And then you added those together for every month that
11:01:28 Mr. Fancher was exposed?
11:01:30 A. Yes. So it's -- basically it's picking a single day out
11:01:32 of every month and adding those concentrations together.
11:01:40 That's the daily concentration estimate.
11:01:46 Q. So, Dr. Reynolds, you agree that you testified in the
11:01:56 *Mousser* trial, correct, *Mousser versus United States*?
11:01:58 A. Yes.
11:01:58 Q. That was on October 26th, 2026, right?
11:02:01 A. Yes.
11:02:02 Q. And you were under oath at that trial, right?
11:02:05 A. Yes.
11:02:05 Q. And you swore an oath to tell the truth, didn't you?
11:02:09 A. Yes.
11:02:10 Q. And in that trial, I asked you, "You agree that to
11:02:14 calculate microgram per liter months, you added up the ATSDR's
11:02:18 simulated mean monthly concentration of contaminants in
11:02:21 drinking water for every month that Mr. Mousser was on base,
11:02:24 right?"
11:02:24 Answer: "Correct."
11:02:27 A. That's still true, yes.
11:02:29 Q. Dr. Reynolds, you agree that 5,340 is the sum of all of
11:02:33 the values in the column labeled "TCE Microgram Per Liter

11:02:37 Months," minus the concentration for the month of January,
11:02:41 1981, right?
11:02:43 A. Yes. For a portion of January where it was repeated,
11:02:45 yeah.
11:02:47 Q. And you agree that in your Excel spreadsheet, you used the
11:02:50 sum formula to add up the value of all of the cells in that
11:02:53 column, and then you subtracted that value for January 1981,
11:02:56 right?
11:02:56 A. Correct, yes.
11:02:58 Q. You agree that for every month Mr. Fancher was exposed,
11:03:01 you used the microgram per liter concentration of contaminants
11:03:04 in finished water simulated by ATSDR as the microgram per liter
11:03:09 month value in your table in Appendix 7, right?
11:03:13 A. Yes.
11:03:14 Q. You agree that Mr. Fancher was exposed between March 1st
11:03:17 and March 3rd of 1981, right?
11:03:20 A. I can't quite see over there, so let me look -- could you
11:03:25 repeat those dates, please?
11:03:27 Q. You agree Mr. Fancher was exposed between March 1st and
11:03:30 March 3rd of 1981, right?
11:03:33 A. Yes.
11:03:34 Q. That's a total of three days, right?
11:03:37 A. Yes.
11:03:37 Q. Three days is less than one month, right?
11:03:41 A. Yes.

11:03:41 Q. And your table shows that between March 4th and March
11:03:44 31st, 1981, Mr. Fancher was not exposed to contamination at
11:03:49 Camp Lejeune, correct?
11:03:52 A. I'm sorry. State the dates again, please.
11:03:55 Q. Your table shows that between March 4th and March 31st,
11:03:59 1981, Mr. Fancher was not exposed to contamination at Camp
11:04:03 Lejeune, correct?
11:04:09 A. Between March 4th, 1981, and March -- I'm sorry. Say the
11:04:14 dates one more time for me, please.
11:04:16 Q. No worries. So your table shows that between March 4th,
11:04:20 1981, and March 31st, 1981, Mr. Fancher was not exposed to
11:04:25 contamination at Camp Lejeune, right?
11:04:30 A. I believe I have him exposed March 4th, 1981, to
11:04:36 June 12th, 1981, full exposure, work and residence on base.
11:04:41 Q. So you noted in your timeline for Mr. Fancher that he was
11:04:44 off base at that time, right?
11:04:50 A. I don't believe so, but I'd like to take another look at
11:04:53 that.
11:04:53 Q. You agree that he was deployed during that time?
11:04:57 A. March 4th? You know what, I need to see the other chart,
11:05:02 if I could, to compare.
11:05:05 Q. Sure. I believe the timeline should be in front of you as
11:05:08 Plaintiff's Exhibit 95.
11:05:14 A. Okay. I'd like to see in my report.
11:05:38 Q. So I'd ask that you look at Plaintiff's Exhibit 95,

11:05:41 Dr. Reynolds. It's the last row from the bottom. You'll see
11:05:45 Mr. Fancher was deployed between March 3rd -- excuse me --
11:05:50 March 4th, 1981, and April 3rd, 1981, correct?
11:05:54 A. I'd like to see my report, though, because I don't know if
11:05:57 it's in the same -- if it's the same in the report that I
11:06:00 submitted that this chart shows. So let me try and find that.
11:06:12 It looks like in my summary report March 4th to April 3rd, I
11:06:24 have him away on a Caribbean deployment.
11:06:32 Q. Okay. So you agree he wasn't exposed during that time,
11:06:34 right?
11:06:36 A. Correct, but I don't think I did include that in my
11:06:39 calculations.
11:06:41 Q. You did not include a time period in your calculations in
11:06:44 which Mr. Fancher was not exposed to contaminated water at Camp
11:06:46 Lejeune?
11:06:46 A. Let me look at the calculation now again. Yeah, I believe
11:07:09 that March 4th to April 3rd should not be counted, and I didn't
11:07:13 think I did count that. But I can't seem -- I can't seem to
11:07:25 find this blow-up in my packet now.
11:07:28 Q. So, Dr. Reynolds, that's going to be at page 41 of your
11:07:31 expert report, Plaintiff's Exhibit 94.
11:07:34 A. Okay. And you said page 41?
11:07:40 Q. That's correct, Dr. Reynolds.
11:07:42 A. Okay.
11:07:45 Q. So the pages aren't numbered, but that's -- it's the first

11:07:48 page of Appendix 7 to your expert report, Plaintiff's Exhibit
11:07:51 94.
11:07:54 A. And I think this is probably going to be too small for me
11:07:57 to see, so but you're saying this is a blow-up of that, of my
11:08:03 report, yes?
11:08:03 Q. Yes, United States Exhibit 4000 is a blow-up of the table
11:08:09 from Appendix 7 of your report, Plaintiff's Exhibit 94. That's
11:08:14 correct.
11:08:15 A. Okay. And so that is showing 27 days on base during
11:08:26 April 4th to April 30th, but it's not showing exposure -- let's
11:08:35 see, March 1 -- March 1 to March 3rd, it's showing exposure but
11:08:45 not March 4th to April 3rd.
11:08:48 Q. Okay.
11:08:48 A. So I do not include that.
11:08:50 Q. Okay.
11:08:50 A. I mean, I'm at my -- I'm almost stretching my limit of
11:08:52 what I can see that far, but, yes, so on my blow-up, I did not
11:08:57 count the deployment days of when he was off base.
11:09:02 Q. Okay.
11:09:03 A. So that's correct.
11:09:04 Q. And, Dr. Reynolds, I'm not trying to trick you.
11:09:07 A. I just -- I can't read. These are too small and that's a
11:09:09 little too far away.
11:09:12 Q. Okay. I'm going to ask the question one more time --
11:09:14 A. Yes.

11:09:14 Q. -- just to be sure that it's really clear.
11:09:17 So for the period March 4th through March 31st, 1981,
11:09:23 Mr. Fancher was exposed to TCE in drinking water at a
11:09:27 concentration of 0 micrograms per liter, right?
11:09:31 A. When he was deployed, he was not exposed to TCE, yes.
11:09:36 During the dates March 4th to April 3rd when he was on
11:09:40 deployment, yes.
11:09:40 Q. Okay.
11:09:41 A. Correct. Thank you.
11:09:42 Q. I'm glad we got there. So in your report, you didn't
11:09:46 multiply 397 micrograms per liter by 3 over 31 for that month
11:09:52 before adding it to the other months, right?
11:09:54 A. Now, where are you looking at with those numbers?
11:09:57 Q. Dr. Reynolds, we're still at March 4th through March 31st,
11:10:01 1981. You agree that you didn't multiply 397 micrograms per
11:10:05 liter by 3 over 31 before adding it to the other months, right?
11:10:10 A. Correct. If he wasn't on base during that month, I did
11:10:13 not use that in my calculation. But he did have at least a day
11:10:19 on base in March and a day on base in April, so in the additive
11:10:24 microgram per liter month calculation, that value is included,
11:10:28 but not in my calculations of specific exposure ingestion
11:10:33 assumptions.
11:10:34 Q. And for March 1st through March 3rd of 1981, you did not
11:10:39 multiply that value by 397 micrograms per liter -- that value
11:10:44 of 397 micrograms per liter by 3 over 31 before adding it to

11:10:49 the other months, correct?
11:10:52 A. Correct.
11:10:53 Q. Okay. And instead, you added that full 397 micrograms per
11:10:58 liter to the other concentrations for months Mr. Fancher was on
11:11:01 base, right?
11:11:02 A. If he was on base for a day of that month, then I counted
11:11:05 that day's concentration for the microgram per liter month
11:11:10 calculation.
11:11:11 Q. And you counted that entire 397 microgram per liter
11:11:15 concentration for the entire month, even though Mr. Fancher was
11:11:20 only exposed for three days, correct?
11:11:22 A. Well, that value doesn't represent an entire month's
11:11:24 concentration. It represents a single day. So if he was
11:11:28 present on base a single day, I counted that month, but it's
11:11:33 only a one-day value. It's not a month's sum. It's a one-day
11:11:36 value in that month. So if you wanted to sum all the days he
11:11:39 was present, it would be three days in the month of March times
11:11:45 the microgram per liter concentration.
11:11:49 Q. Okay. Dr. Reynolds, you agree that you counted ATSDR's
11:11:54 entire monthly concentration amount for each month Mr. Fancher
11:11:57 was exposed, right?
11:11:59 A. The ATSDR monthly concentration amount is the amount every
11:12:03 day of that month, so it's 300 on day one, 300 on day two, 300
11:12:09 on day three. So it's -- if he was present for any day in that
11:12:13 month, then I counted that month's single day concentration.

11:12:17 Q. So, Dr. Reynolds, you believe in expressing exposure in
11:12:20 microgram per liter months, what ATSDR meant was microgram per
11:12:24 liter days?
11:12:26 THE COURT: Do you really think this is effective
11:12:27 cross-examination? You're losing the jury.
11:12:33 A. No, I don't think they meant microgram per liter day.
11:12:35 They specifically defined those concentrations as the
11:12:39 concentration on a day in that month, and they assumed that the
11:12:43 concentration was the same on any day of that month.
11:12:47 Q. And they assume that for the entire month, correct?
11:12:50 A. They assume -- they only presented monthly concentrations.
11:12:54 So if they said the concentration was 300 in July, then it was
11:12:58 300 every day in July.
11:13:00 Q. Okay.
11:13:00 THE COURT: Anything else?
11:13:09 MR. ANTONUCCI: Yes, Your Honor. I have more
11:13:10 questions, yes, sir.
11:13:10 THE COURT: A lot?
11:13:10 MR. ANTONUCCI: I do have more questions, Your Honor.
11:13:15 THE COURT: Really?
11:13:15 MR. ANTONUCCI: Yes, Your Honor.
11:13:16 THE COURT: You think it's doing what you're trying
11:13:19 to accomplish?
11:13:20 MR. ANTONUCCI: Your Honor, we are ensuring that we
11:13:24 lay a foundation.

11:13:25 THE COURT: So that the Court of Appeals can reverse
11:13:27 whatever happens here, even if you prevail?
11:13:30 MR. ANTONUCCI: Your Honor, it's important that these
11:13:32 questions make it into the record to ensure a fulsome --
11:13:34 THE COURT: Sure.
11:13:34 MR. ANTONUCCI: -- understanding of what happened
11:13:36 here.
11:13:36 Q. So, Dr. Reynolds --
11:13:38 THE COURT: Even if it's counterproductive at trial?
11:13:40 But go ahead. Go ahead. You're smart.
11:13:58 Q. (By Mr. Antonucci) So, Dr. Reynolds, you calculated a
11:14:00 range of plausible exposure scenarios for Mr. Fancher, right?
11:14:04 A. That's correct, yes.
11:14:05 Q. And here I am now again referring to your total micrograms
11:14:09 exposure assessment, not --
11:14:11 A. Okay.
11:14:11 Q. -- microgram per liter month, right?
11:14:12 A. Got it. Yes.
11:14:13 Q. Okay. So one exposure scenario that you analyzed for
11:14:18 Mr. Fancher used water intake rates from ATSDR's 2017 Public
11:14:24 Health Assessment, right?
11:14:25 A. Yes.
11:14:26 Q. And so the Marine-in-training high-end exposure from that
11:14:31 ATSDR document is 6 liters per day, right?
11:14:34 A. Correct.

11:14:35 Q. And they also used a water intake rate of 3.1 liters per
11:14:39 day for routine or nontraining days, right?
11:14:43 A. Yes.
11:14:44 Q. So putting aside ATSDR for a moment, a different exposure
11:14:49 scenario that you analyzed for Mr. Fancher used water intake
11:14:52 rates from the United States military *Field Manuals*, right?
11:14:54 A. Correct.
11:14:57 Q. And for the military *Field Manuals* from the Department of
11:15:00 the Army, you used a water intake rate of 5.21 liters per day
11:15:05 for routine days, correct?
11:15:07 A. Correct.
11:15:08 Q. And for training days, the *Army Field Manuals* provided you
11:15:12 with a water intake rate of 8.52 liters per day, right?
11:15:16 A. Yes.
11:15:17 Q. And you're aware that that 8.52 liters per day value from
11:15:21 the *Army Field Manuals* is for heavy activity, right?
11:15:24 A. Yes.
11:15:26 Q. You're aware that the *Field Manuals* describe that heavy
11:15:29 activity as forced marches, entrenching, or group marches with
11:15:34 heavy loads, right?
11:15:36 A. Yes.
11:15:37 Q. And the *Army Field Manuals* contain guidelines on how much
11:15:40 water Army personnel should have available during different
11:15:43 activities, right?
11:15:44 A. Yes.

11:15:45 Q. You're aware that the military revised its fluid
11:15:48 replacement guidelines because they resulted in soldiers
11:15:50 drinking too much water and having adverse reactions, right?
11:15:54 A. Yes. They revised it downward just a little bit. It was
11:15:57 12 as the maximum, and they revised it to 11.4 or something
11:16:02 around there, yes.
11:16:02 Q. So the answer to my question is yes, Dr. --
11:16:04 A. Correct, yes.
11:16:06 Q. -- Reynolds, correct? The plaintiff's legal team directed
11:16:07 you to the *Field Manuals*, right?
11:16:10 A. Yes.
11:16:11 Q. So let's direct our attention now to the concentration of
11:16:16 contaminants that you used for your analysis. So to determine
11:16:20 the levels of contaminants in the water when any plaintiff was
11:16:23 at Camp Lejeune, you used ATSDR's mean monthly concentration of
11:16:28 contaminants in finished water, right?
11:16:30 A. Yes.
11:16:31 Q. That was the only source that you rely on to determine the
11:16:34 concentration of contaminants in drinking water at Camp
11:16:35 Lejeune, right?
11:16:38 A. Yes. It's the only source I'm aware of.
11:16:39 Q. And when you were modeling Mr. Fancher's exposure, there
11:16:42 were some months you considered him to be exposed only a
11:16:45 portion of the month, right?
11:16:46 A. Yes.

11:16:47 Q. You assumed that ATSDR's mean monthly concentration of
11:16:50 contaminants was representative of each day Mr. Fancher was on
11:16:54 base, right?
11:16:56 A. Yes.
11:16:56 Q. Meaning you used the average monthly values to estimate
11:16:59 daily contaminant concentration values, right?
11:17:02 A. Yes.
11:17:08 MR. ANTONUCCI: Permission to approach the witness,
11:17:09 Your Honor.
11:17:10 THE COURT: What are you going to do? Why?
11:17:14 MR. ANTONUCCI: To provide the witness with an
11:17:15 exhibit.
11:17:16 THE COURT: How many more do you have?
11:17:18 MR. ANTONUCCI: Your Honor, I'm nearly through my
11:17:20 questions.
11:17:20 THE COURT: I can't hear you.
11:17:21 MR. ANTONUCCI: I'm nearly through my questions, Your
11:17:23 Honor.
11:17:24 THE COURT: Okay.
11:17:53 Q. So for the record, Dr. Reynolds, I've handed you what's
11:17:57 been marked for identification as United States Exhibit 3014.
11:18:03 Actually, this document has already been admitted into evidence
11:18:05 under the parties' stipulation. So this is Exhibit 3014. It's
11:18:09 a document entitled "Analysis and Historical Reconstruction of
11:18:13 Groundwater Flow, Contaminant Fate and Transport, and

11:18:16 Distribution of Drinking Water Within Service Areas of the
11:18:19 Hadnot Point and Holcomb Boulevard Water Treatment Plants and
11:18:22 Vicinities, U.S. Marine Corps Base Camp Lejeune, North
11:18:24 Carolina, Chapter A: Summary of Findings," right?
11:18:29 A. Yes.
11:18:29 Q. And, Dr. Reynolds, you included this document in your
11:18:32 materials considered list, correct?
11:18:33 A. Yes.
11:18:34 Q. And you cited this document in your report, correct?
11:18:37 A. Yes.
11:18:38 Q. So please turn to page A181 of United States Exhibit 3014.
11:18:52 That's the page with Bates number ending in 942783.
11:19:00 A. Okay, I'm here. A181?
11:19:03 Q. Yes. So on page A181 of United States Exhibit 3014, ATSDR
11:19:09 included in Frequently asked Questions a question asking, "Can
11:19:14 ATSDR water modeling results be used to determine the
11:19:16 concentration of VOCs that my family and I were exposed to on a
11:19:20 daily basis?" Did I read that correctly?
11:19:23 A. Yes.
11:19:23 Q. And underneath the question, ATSDR stated, "No, the
11:19:27 available data are not specific enough to accurately estimate
11:19:30 daily levels of VOCs, PCE, TCE, 1,2-tDCE, VC, and benzene in
11:19:38 the Hadnot Point Boulevard study area." I read that correctly,
11:19:42 didn't I?
11:19:44 A. Yeah. So what they're saying is that they don't have

11:19:46 daily numbers. They don't have specific numbers by day. So
11:19:49 they have estimated what the daily exposures are by the monthly
11:19:54 concentrations that they've modeled.
11:19:56 Q. Okay. So you agree that in your daily levels of
11:20:00 contaminant concentrations, you don't account for uncertainty
11:20:04 in those levels, right?
11:20:08 A. I used the ATSDR mean monthly concentrations. When they
11:20:11 developed the model, they did a sensitivity analysis and
11:20:14 accounted for the uncertainty in their modeled values. So
11:20:17 that's not something I did. I didn't produce the water model
11:20:21 values, but I used their mean concentrations in my
11:20:25 calculations.
11:20:26 Q. So you agree you did not account for uncertainty in the
11:20:29 daily levels of your exposure assessment, correct?
11:20:32 A. I considered uncertainty in my calculations by looking at
11:20:36 multiple ingestion scenarios.
11:20:38 Q. So, Dr. Reynolds, I'm referring to the contaminant levels,
11:20:42 not ingestion rates. You agree you didn't account for
11:20:45 uncertainty in contaminant levels, correct?
11:20:47 A. No, I didn't calculate any uncertainty estimates in the
11:20:50 published ATSDR concentrations.
11:20:53 Q. Okay. Dr. Reynolds, you agree that you did not calculate
11:20:56 Mr. Fancher's exposure in units of microgram per kilogram day,
11:21:00 correct?
11:21:02 A. That's correct.

11:21:03 Q. And you agree that the unit of total mass alone does not
11:21:06 account for an individual's body weight, right?
11:21:09 A. No, body weight is not part of the calculation of what he
11:21:11 was exposed to.
11:21:13 Q. You agree that the unit of total micrograms does not
11:21:17 include time, correct?
11:21:21 A. Well, the final unit doesn't include time, but to get to
11:21:23 total micrograms, we considered his duration and frequency of
11:21:27 exposure, so we did consider time.
11:21:29 Q. And you agree that in the formula, time was canceled out,
11:21:32 giving you total micrograms, right?
11:21:34 A. Correct.
11:21:34 Q. Okay. Dr. Reynolds, you did not analyze how your exposure
11:21:42 calculations for the plaintiff compared to any epidemiology
11:21:44 study, correct?
11:21:45 A. Correct.
11:21:51 MR. ANTONUCCI: Your Honor, at this time, the United
11:21:52 States, moves the enlargement marked for identification as
11:21:56 United States Exhibit 4000 into evidence for illustrative
11:21:59 purposes.
11:21:59 THE COURT: It's received.
11:22:01 (Defendant's Exhibit Number 4000 received.)
11:22:01 MR. ANTONUCCI: Thank you, Dr. Reynolds. No further
11:22:05 questions.
11:22:05 MR. QUINN: Your Honor, I have two very --

11:22:05 THE COURT: Go ahead.
11:22:06 MR. QUINN: Thank you.
11:22:07 REDIRECT EXAMINATION BY MR. QUINN:
11:22:07 Q. Dr. Reynolds, are you familiar with Dr. Judy LaKind, who
11:22:12 conducted the exposure assessment for the United States
11:22:15 Government in this case?
11:22:16 A. Yes.
11:22:17 Q. Did Dr. LaKind rely upon this water model in her
11:22:21 calculations?
11:22:21 A. Yes, she did.
11:22:23 Q. Thank you.
11:22:23 MR. QUINN: No more questions.
11:22:24 THE COURT: All right. Thank you, Doctor.
11:22:26 THE WITNESS: Thank you.
11:22:26 (The witness exits the witness stand at 11:22 a.m.)
11:22:26 THE COURT: Next witness.
11:23:16 MR. ROBERTS: If Your Honor please, at this time, we
11:23:17 call Dr. Joseph Del Pizzo to the stand.
11:23:20 THE CLERK: Place your left hand on the Bible, raise
11:23:20 your right hand, and state and spell your name for the record.
11:23:20 THE WITNESS: Joseph Del Pizzo, D-E-L, capital P like
11:23:20 Peter, I-Z-Z-O.
11:23:20 JOSEPH DEL PIZZO, M.D.,
11:23:35 was sworn at 11:23 a.m., and testified as follows:
11:23:35 DIRECT EXAMINATION BY MR. ROBERTS:

11:24:04 Q. Would you state your name for me, sir?
11:24:04 A. Joseph Del Pizzo.
11:24:04 Q. And you're a licensed surgeon and an expert witness in this case, correct?
11:24:04 A. Yes.
11:24:12 Q. And Judge Boyle has previously heard about your background and credentials in the *Mousser* case, but could you just briefly describe your education and your current employment?
11:24:25 A. Sure. After graduating from medical school, I did a six-year surgery residency in general and neurologic surgery, followed by a one-year specialty fellowship in minimally invasive kidney surgery. I graduated from that in 2001, and since that time, I've been on the full-time academic staff at the New York-Presbyterian Hospital in New York City, specializing in minimally invasive kidney surgery.
11:24:49 THE COURT: All right.
11:24:49 MR. ROBERTS: Your Honor, at this time, we would tender Dr. Del Pizzo as an expert in the field of urology, including the etiology or cause of kidney cancer.
11:24:58 THE COURT: He's accepted as an expert in that field and can express his opinions.
11:25:03 MR. ROBERTS: Thank you, Your Honor.
11:25:03 Q. Dr. Del Pizzo, you've got Volume 3 of your -- of the notebooks up there, I think.
11:25:15 A. Yes.

11:25:15 Q. And Exhibit 102 in that binder is a copy of your CV; is
11:25:19 that correct?
11:25:24 A. Yes.
11:25:25 Q. And is that a current copy of your CV?
11:25:28 A. Yes.
11:25:28 MR. ROBERTS: Your Honor, we would move for the
11:25:31 admission of 102 into evidence.
11:25:31 THE COURT: It's received.
11:25:33 (Plaintiff's Exhibit Number 102 received.)
11:25:33 Q. And, Dr. Del Pizzo, you did two reports in this case,
11:25:38 correct, sir?
11:25:39 A. Yes.
11:25:40 Q. You did an initial report, and then you did a rebuttal
11:25:45 report rebutting one of the Government's experts, Dr. Walter
11:25:49 Stadler, correct?
11:25:51 A. Yes.
11:25:51 Q. All right. Is Exhibit 99 a copy of your original report?
11:25:59 A. Yes.
11:25:59 MR. ROBERTS: Your Honor, we'd offer Exhibit 99 into
11:26:00 evidence.
11:26:01 THE COURT: Received.
11:26:01 (Plaintiff's Exhibit Number 99 received.)
11:26:01 Q. And is Exhibit 100 a copy of your rebuttal report and
11:26:07 response to Dr. Stadler's report?
11:26:09 A. Yes, it is.

11:26:10 MR. ROBERTS: Your Honor, we'd offer Exhibit 100.
11:26:12 THE COURT: Received.
11:26:12 (Plaintiff's Exhibit Number 100 received.)
11:26:12 Q. Now, Dr. Del Pizzo, you were sitting in the courtroom when you heard statements made to the Court that the level of contamination at Camp Lejeune never reached a level that could cause kidney cancer. Did you hear that?
11:26:29 A. Yes.
11:26:29 MR. ROBERTS: May I approach, Your Honor?
11:26:32 THE COURT: Yeah.
11:26:39 Q. First of all, Dr. Del Pizzo, could you tell Judge Boyle who Walter Stadler is?
11:26:44 A. He is the specific causation expert for the defense.
11:26:49 Q. All right. And did you -- did you read Dr. Stadler's deposition in preparing your opinions in this case?
11:26:57 A. Yes.
11:26:58 Q. And did they help you in forming your opinion?
11:27:03 A. Yes.
11:27:09 Q. And on page 23 of Dr. Stadler's deposition, you see he was asked the question:
11:27:17 "And do you see one, two, three, four -- fifth line down, 'Camp Lejeune'?"
11:27:21 "I do."
11:27:22 "Do you agree with that?"
11:27:23 And his statement was, "I agree that there is some

increased risk of kidney cancer from individuals that were stationed at Camp Lejeune."

Did I read that correctly?

A. Yes.

Q. Dr. Del Pizzo --

MR. ROBERTS: Your Honor, we would -- Your Honor, we'd move Exhibit 126 into the record, please.

THE COURT: It's received.

(Plaintiff's Exhibit Number 126 received.)

Q. Now, Dr. Del Pizzo, do you have an opinion as to what caused David Fancher's kidney cancer?

A. Yes.

Q. And what is that opinion?

A. That to a reasonable degree of medical and scientific certainty, his exposure to the contaminated water at Camp Lejeune is more likely than not to be the cause of his kidney cancer.

Q. Now, Dr. Del Pizzo, in your everyday practice, when you're treating patients, do those folks come to you and say, "Doctor, I've got kidney cancer. What is -- what is the cause of my kidney cancer?" Is that something that comes up in your everyday practice?

A. Yes. So I think when you tell somebody that they have kidney cancer, his or her first question is, "Am I going to be okay?" And then the second question is, "What caused this?"

11:28:37 Q. And --
11:28:37 A. I'm sorry. And I was going to say and I think it's
11:28:41 important for a couple of reasons. That's the first reason,
11:28:44 because they asked that. And then when I treat these patients
11:28:47 and operate on them, I also provide long-term surveillance. So
11:28:51 if you can identify a modifiable or unmodifiable risk factor,
11:28:55 then you want to change that in order to mitigate their chance
11:28:57 of the cancer coming back. They may have family members that
11:29:00 might have been exposed to the same carcinogen, or if you can
11:29:05 diagnose a genetic disorder, then those family members would
11:29:07 have to be screened for kidney cancer as well. So the cause of
11:29:10 the person's cancer does come up in the evaluation.
11:29:14 Q. And, Dr. Del Pizzo, if you could tell Judge Boyle why you
11:29:19 believe the water at Camp Lejeune caused David Fancher's kidney
11:29:23 cancer.
11:29:24 A. Well, I relied on the general causation expert to
11:29:28 highlight specific and legitimate literature, and also to opine
11:29:33 on whether these carcinogens cause kidney cancer, at what
11:29:37 levels they're known to cause kidney cancer, and were those
11:29:40 levels in the water at Camp Lejeune when David Fancher was
11:29:42 there, and that was Dr. Hatten, the general causation expert,
11:29:45 his opinion.
11:29:46 And at that point, I wanted to make a differential as to
11:29:51 the risk factors that may have caused his cancer, and to do
11:29:54 that in terms of Camp Lejeune water exposure, I plotted the

11:30:00 exposure that Dr. Reynolds calculated that he had into the Camp
11:30:03 Lejeune epidemiology to see if he met those levels, and then
11:30:10 also evaluated whether he had any other risk factors for kidney
11:30:13 cancer.
11:30:14 Q. And, Dr. Del Pizzo, you're aware, are you not, before all
11:30:17 the lawyers showed up, that the Government, the ATSDR, actually
11:30:22 studied the Marines at Camp Lejeune that were exposed to the
11:30:26 toxic water; is that correct?
11:30:27 A. That's my understanding, yes.
11:30:30 Q. And could you tell Judge Boyle what those studies show for
11:30:34 someone who was at Camp Lejeune and exposed to the levels of
11:30:39 contamination that David Fancher was exposed to?
11:30:42 A. The Bove study --
11:30:45 MR. MARQUINA: Objection, Your Honor. Dr. Del Pizzo
11:30:45 is not permitted to testify to new general causation opinions.
11:30:49 Getting into the ATSDR studies at this juncture, closed records
11:30:53 should be impermissible, based off Your Honor's order and Judge
11:30:55 Jones' order permit -- not permitting additional causation
11:31:01 opinions.
11:31:01 THE COURT: I'm very sorry. I couldn't understand
11:31:03 anything you said.
11:31:04 MR. MARQUINA: Apologies.
11:31:06 THE COURT: Speak louder.
11:31:07 MR. MARQUINA: Yes, Your Honor. The objection is
11:31:09 based on Your Honor's order closing the general causation

record based off of what has been admitted from the *Mousser* record. In addition, there's already an existing order signed by Judge Jones not permitting untimely general causation opinions. Dr. Del Pizzo has not opined on the ATSDR studies, and that goes directly to general causation in this case.

THE COURT: Yeah, I'm inclined to hear from the doctor and review the objection. I'll hold the objection in abeyance.

MR. ROBERTS: Thank you, Your Honor.

A. So I'm just speaking specifically about David Fancher's exposure and where he plotted into the Camp Lejeune epidemiology, looking at the risk of the Camp Lejeune Marines who were exposed to a similar population of Marines at Camp Pendleton that were not exposed. And if you put in his specific exposure, that puts him at a 44 percent increased risk of getting kidney cancer.

Q. And, Dr. Del Pizzo, did you consider studies other than the ATSDR studies that we're discussing now to form your opinion as to the cause of David Fancher's kidney cancer?

A. Well, yes, after relying on the general causation experts to provide that information.

Q. Okay. Are there other non-Camp Lejeune studies that informed your specific causation expert opinions in this case?

A. Yes.

Q. All right. What were those studies?

11:32:34 A. Well, one example is the Andrew study, which is a water
11:32:38 contamination study, looking at risk of kidney cancer in people
11:32:42 who were exposed to TCE-contaminated water over a 15-year
11:32:46 period, and it showed a 78 percent increase risk in kidney
11:32:50 cancer with exposure to TCE.
11:32:52 And it's an important study because not only is it a water
11:32:55 contamination study, but it shows the association between TCE
11:32:59 and kidney cancer, and that study was statistically
11:33:03 significant. And not only that, in context to Mr. Fancher,
11:33:06 those results were statistically significant at intensities of
11:33:10 TCE in the water that were 20 times less than what Mr. Fancher
11:33:14 was exposed to during the height of the contamination, certain
11:33:18 months at Camp Lejeune.
11:33:21 Q. And, Dr. Del Pizzo, could you explain to the Court how
11:33:26 these toxic substances go into the kidney?
11:33:33 A. Well, when TCE, for example, is ingested or absorbed, it
11:33:37 gets into our bloodstream, which is then filtered by our
11:33:40 kidneys. And within the kidneys, the TCE is broken down and
11:33:45 metabolized into other compounds through a complex pathway
11:33:48 called the glutathione conjugation pathway, but it breaks it
11:33:52 down into toxic metabolites, which can have a direct effect on
11:33:55 the cells and the DNA to alter them and cause a mutation that
11:34:00 can then be a potential reason to cause kidney cancer.
11:34:05 Q. And, Dr. Del Pizzo, you touched on briefly that in your
11:34:08 everyday clinical practice, you do a differential diagnosis.

11:34:11 A. Yes.
11:34:12 Q. If you could, sir, explain to the Court how you conducted
11:34:16 your differential diagnosis in this case specific to David
11:34:19 Fancher.
11:34:21 A. Well, a differential is basically looking at risk factors
11:34:24 and giving them weight to try to come up with a cause within a
11:34:28 reasonable degree of medical and scientific certainty. So you
11:34:32 look at the risk factors that they have, and then you weigh
11:34:36 them against one another, look at all risk factors that the
11:34:39 patient has, and try to come up with the causation within a
11:34:43 reasonable degree of medical and scientific certainty.
11:34:45 THE COURT: What risk factors did he have?
11:34:48 THE WITNESS: He had the exposure to the water at
11:34:49 Camp Lejeune, and that's it.
11:34:51 THE COURT: Okay.
11:34:53 Q. He never smoked?
11:34:55 A. No.
11:34:56 Q. He was not obese?
11:34:57 A. No.
11:34:58 Q. No chronic kidney disease?
11:35:00 A. No.
11:35:01 Q. No diabetes?
11:35:02 A. No.
11:35:03 Q. No history of heavy analgesic drug use?
11:35:06 A. No.

11:35:07 Q. No genetic predisposition?
11:35:09 A. No.
11:35:10 Q. No history of chronic infection or inflammation?
11:35:13 A. No.
11:35:13 Q. No hypertension?
11:35:16 A. No poorly controlled hypertension, that's correct, and
11:35:21 also no other known exposures to any environmental toxins other
11:35:25 than what we've talked about with the Camp Lejeune water.
11:35:29 Q. Were all the indicators pointing to his exposure to the
11:35:32 water at Camp Lejeune?
11:35:34 A. I believe so. I mean, I think you take the whole thing in
11:35:37 context. And you have someone who was exposed to the water
11:35:40 with TCE, no other risk factors, and I think the important
11:35:43 thing to remember is that this person was diagnosed with a
11:35:49 10-centimeter right kidney mass, which is abnormally large and
11:35:51 just in of itself, not common to have at an age of 39, which is
11:35:57 two and a half to three decades earlier than the average
11:36:01 diagnosis of kidney cancer in this country, which is mid 60s,
11:36:04 late 60s, into people's early 70s. So I think that's a
11:36:07 very important factor, too.
11:36:10 THE COURT: There had to be a catalytic introduction
11:36:13 of something, you're saying?
11:36:15 THE WITNESS: In order to get a tumor that large at
11:36:17 that young age, yes.
11:36:18 THE COURT: Okay.

11:36:22 Q. Dr. Del Pizzo, we heard during the opening statement a
11:36:26 concept of something being idio- --
11:36:27 THE COURT: Do you have any doubt about the causation
11:36:30 factor?
11:36:31 THE WITNESS: I don't. When weighing no other risk
11:36:34 factors, the TCE exposure, and especially just the uncommon
11:36:39 nature of having a 10-centimeter tumor, which, again, is about
11:36:41 two and a half to three times the size of what an average
11:36:44 kidney tumor is diagnosed in someone in their 60s and 70s,
11:36:47 and he was diagnosed with that large tumor at age 39, that's
11:36:51 exceedingly rare.
11:36:51 THE COURT: All right.
11:36:54 Q. Dr. Del Pizzo, do you believe it was even a close call in
11:36:56 this case as to the cause of Mr. Fancher's kidney cancer?
11:37:00 A. I mean, I don't, given everything I just told Judge Boyle.
11:37:06 Q. To sum up, Dr. Del Pizzo, is there general consensus in
11:37:11 the scientific community that TCE causes kidney cancer?
11:37:16 A. Yes.
11:37:18 Q. EPA says it, correct?
11:37:20 A. Yeah, I mean, the governing bodies are aligned on it, I
11:37:23 believe, and when the EPA banned TCE, one of the reasons it
11:37:27 gave was because it's a human carcinogen and can cause kidney
11:37:30 cancer specifically.
11:37:34 Q. And is it your opinion, Dr. Del Pizzo, to a reasonable
11:37:39 degree of medical and scientific certainty that it's more

likely than not that the water at Camp Lejeune caused David Fancher's kidney cancer?
A. Yes.
Q. And is it your opinion to a reasonable degree of medical and scientific certainty that but for his exposure to the water at Camp Lejeune, Mr. Fancher would not have gotten kidney cancer?
A. Yes.
Q. Now, one final topic, Dr. Del Pizzo. In your review of Mr. Fancher's medical records, did you determine that he had suffered a bulge on the right side of his body?
A. Yes. He has a significant bulge on the right side of his body in the area of his incision for his right nephrectomy in 1997.
Q. And do you have an opinion to a reasonable degree of medical certainty as to whether or not that bulge is a direct result of his surgery in 1997?
A. It is a direct result. It's under his incision that he has.

MR. ROBERTS: No further questions, Your Honor.

THE COURT: Any cross?

MR. MARQUINA: Very briefly, Your Honor.

CROSS-EXAMINATION BY MR. MARQUINA:

Q. Dr. Del Pizzo, you spent some time during your direct examination discussing epidemiologic studies. Do you remember

that?
A. Yes.
Q. You aren't an epidemiologist, right?
A. No.
Q. You aren't a toxicologist, right?
A. No.
Q. You've never published peer-reviewed literature regarding the effects of any of the chemicals at issue in this case, right?
A. No.
Q. Now, Dr. Del Pizzo, you described Mr. Fancher's exposure to the toxins in the water at Camp Lejeune as substantial in this case, right?
A. Based on the general causation opinion, yes.
Q. And specifically in your reports -- report -- excuse me -- you mentioned that Mr. Fancher was exposed to a substantial duration, frequency and intensity of those toxins, right?
A. I believe so, yes.
Q. In your reports, you do not define the term "substantial," right?
A. I don't know if I defined it in my report specifically, but, again, I was basing it on the general causation expert. And to me, substantial means it's enough to allow me to make an opinion within a reasonable degree of medical and scientific certainty.

11:39:55 Q. I understand that, Dr. Del Pizzo --
11:39:56 A. Yeah.
11:39:56 Q. -- but at least in your reports, you don't define the term
11:39:59 "substantial"?
11:40:01 A. Word for word, I don't think so.
11:40:05 Q. And you relied on Dr. Kelly Reynolds's exposure
11:40:09 calculations in reaching your conclusions for this case, right?
11:40:12 A. I relied on her for the exposure metrics that the patient
11:40:16 had, yes. I didn't do the calculations myself.
11:40:19 Q. Right. And specifically, you relied on those calculations
11:40:22 which were measured in micrograms per liter months, right?
11:40:26 A. Yes.
11:40:27 Q. And as just mentioned, just so the record is clear, you
11:40:29 yourself did not independently calculate or verify Dr. Kelly
11:40:32 Reynolds's calculations, right?
11:40:34 A. No, I tried to understand how she came to them and
11:40:37 understand the process, but I wouldn't say I independently
11:40:40 checked her results, no.
11:40:46 Q. Dr. Del Pizzo, as a general proposition, you would agree
11:40:50 that some cancers have an unknown cause, right?
11:40:54 A. Yes.
11:40:55 Q. And physicians in your field refer to cancers with unknown
11:40:58 causes as idiopathic, right?
11:41:01 A. Idiopathic refers to a disease process where the cause is
11:41:06 not readily apparent or could be characterized.

11:41:09 Q. So it's fair to say these are diseases with unknown causes?
11:41:13 A. There's a cause, but we don't know what it is, yes.
11:41:18 Q. Sure. Dr. Del Pizzo, would you agree that a majority of kidney cancer diagnoses involve patients with no identifiable risk factors for kidney cancer?
11:41:29 A. Yes, but in the context of some patients, or a lot of patients don't -- may not know their family history, or we don't know what we're exposed to, right? So it doesn't mean there's not a cause. It just means that we can't come up with one.
11:41:41 Q. Sure. But subject to that caveat, the answer to my question is yes?
11:41:47 A. I don't know if I'd say most. I'd say a percentage is unknown, sure.
11:41:52 Q. Dr. Del Pizzo, you were deposed in this case, correct?
11:41:56 A. Yes.
11:41:57 Q. And it was under oath?
11:41:59 A. Yes.
11:42:00 Q. And you swore to tell the truth in that deposition, correct?
11:42:03 A. Of course.
11:42:04 Q. And you did tell the truth?
11:42:06 A. Yes.
11:42:09 Q. Dr. Del Pizzo, I'm going to read from your deposition.

Starting on page 82, line 15, quote:

Question: "Would you agree that many, if not most, patients with kidney cancer have no identifiable risk factors?"

There's an objection from counsel.

Answer: "I would say that the majority of kidney cancer diagnoses are such where no identifiable risk factor is found. That being said, some patients don't know their family history. Some patients don't know chemical exposures. They just have no knowledge of it, so we really don't know -- or, excuse me -- we don't really know, so I would say yes, but with that caveat."

A. I think I'm basically saying the same thing today, but, yeah, sure.

THE COURT: So you're consistent?

THE WITNESS: Yeah, I'm trying to be.

Q. Thank you, Doctor.

THE WITNESS: I also think it's important to realize, Judge Boyle, that idiopathic is not an independent risk factor that needs to be ruled in or ruled out. You come to that after you've done an exhaustive differential, and if you can't come to a conclusion within a reasonable degree of medical certainty, then it's idiopathic. But if methodologically you come to a conclusion that you believe within a reasonable degree of medical and scientific certainty this is the cause, then idiopathic comes off the differential.

THE COURT: Right.

11:43:30 THE WITNESS: So it's how you look at it in context.
11:43:34 Q. Dr. Del Pizzo, you'd agree that the presence of a risk
11:43:37 factor for kidney cancer in a patient doesn't guarantee that
11:43:39 they're going to develop the disease, right?
11:43:41 A. I do agree with that.
11:43:43 Q. And patients without risk factors for kidney cancer can
11:43:45 still develop that disease, right?
11:43:48 A. Yes.
11:43:54 Q. Dr. Del Pizzo, you'd agree there's some general
11:43:56 background, there's a lifetime risk for developing kidney
11:43:59 cancer, right?
11:44:01 A. We all have a background risk for developing any cancer.
11:44:04 Kidney cancer is one of them.
11:44:06 THE COURT: When was the onset of the disease, 37 or
11:44:09 39?
11:44:09 THE WITNESS: Thirty-nine.
11:44:10 THE COURT: Thirty-nine.
11:44:10 THE WITNESS: Right.
11:44:11 THE COURT: That's extraordinary.
11:44:12 THE WITNESS: No, it is. And he's talking about
11:44:13 background risk, which is the chance of any of us getting any
11:44:16 cancer at a certain time of our lives, and I certainly weighed
11:44:20 that into my differential for Mr. Fancher. But I think it's
11:44:24 fair to say that background risk, which for kidney cancer in a
11:44:28 male is around 2 percent, I think it's more reasonable to weigh

that in an individual who is in his 60s or 70s, he or hers, in her 60s or 70s, when that is more likely a factor. I think it's -- I think it's reasonable not to weigh it as much when you get an abnormally large tumor in a 39-year-old.

THE COURT: Right.

Q. Dr. Del Pizzo, you just told the Court that you considered background risk in your differential, correct?

A. Well, I think it's considered in every differential in every patient.

Q. Sure, but in your report for Mr. Fancher, you did not mention the phrase "background risk," correct?

A. That doesn't mean I didn't consider it. But, again, everyone has a background risk. It's kind of taken into the account anytime you're evaluating somebody.

Q. I understand. The question I asked is a narrow one. You didn't mention that phrase in your report, right?

A. I didn't use that phrase, no.

THE COURT: I asked the question, though.

MR. MARQUINA: I understand. I was just following up, Your Honor.

THE COURT: Yeah. It's like when you get a question from the jury. It's not normal, but you can have it.

MR. MARQUINA: Of course.

THE COURT: Right.

Q. Dr. Del Pizzo, you prepared a supplemental report, or a

11:45:43 rebuttal report for Mr. Fancher in this case, dated May 14th,
11:45:47 2025, correct?
11:45:48 A. That's correct.
11:45:49 Q. And in that report, you mention some language where you
11:45:53 agree with the United States's expert, Dr. Stadler, that many
11:45:58 patients diagnosed with renal cancer do not have any
11:46:01 identifiable risk factors, and that in those cases, the cause
11:46:04 is deemed idiopathic, right?
11:46:06 A. Yes.
11:46:11 Q. And as you testified a little bit earlier, you concluded
11:46:15 that Mr. Fancher's kidney cancer was not idiopathic because, as
11:46:19 you mentioned, you concluded that his exposure to contaminated
11:46:22 water caused his kidney cancer, right?
11:46:25 A. Yes.
11:46:29 Q. Dr. Del Pizzo, are you familiar with the National Cancer
11:46:32 Institute's Surveillance, Epidemiology, and End Results
11:46:35 Program, otherwise known as SEER?
11:46:37 A. I'm aware of it, sure.
11:46:40 Q. Would you agree that the data related to kidney cancer
11:46:43 from SEER is reputable and reliable?
11:46:46 A. Yes.
11:46:48 Q. If SEER published that there were just over 80,000 new
11:46:51 cases of kidney cancer in 2026, you'd have no reason to dispute
11:46:55 that, right?
11:46:56 A. No, that is correct.

11:46:58 Q. If SEER published that kidney cancer was seventh among the
11:47:01 ten most common kidney cancers, you'd have no reason to dispute
11:47:04 that, right?
11:47:04 A. No.
11:47:06 Q. If SEER published that kidney cancer represents
11:47:09 approximately 3.8 percent of all new cancer -- excuse me --
11:47:12 cancer patients in the United States, you'd have no reason to
11:47:15 dispute that, right?
11:47:16 A. No.
11:47:18 Q. If SEER published that new cases of kidney cancer within
11:47:20 the age group of 35 to 44 accounts for approximately 5.8
11:47:25 percent of all kidney cancer diagnoses, you'd have no reason to
11:47:29 dispute that, right?
11:47:30 A. No, but in context, that's updated numbers, and kidney
11:47:34 cancers are increasing in numbers because we do more and more
11:47:37 CAT scans now for people, even when they don't need them, and
11:47:40 we find smaller and smaller tumors that are incidental, not
11:47:43 causing an issue. Mr. Fancher was diagnosed 30 years ago when
11:47:46 those numbers were not the same.
11:47:48 Q. Dr. Del Pizzo, you'd agree as a general proposition that
11:47:52 patients could be diagnosed with kidney cancer at any age,
11:47:54 correct?
11:47:56 A. At any age? It's possible, sure. Well, sorry, when you
11:48:00 mean any age, you're talking about adults now?
11:48:03 Q. Well, let me narrow the question.

11:48:04 Dr. Del Pizzo, you'd agree as a general proposition that a
11:48:07 patient could be diagnosed with kidney cancer as young at an
11:48:10 age of 39, even if they had no risk factors, right?
11:48:15 A. Possible, but certainly not likely and not likely to have
11:48:18 a 10-centimeter tumor at that young age.
11:48:22 Q. Dr. Del Pizzo, you would agree that Mr. Fancher has made a
11:48:25 full recovery from his nephrectomy, right?
11:48:28 A. Other than the bulge that's causing a problem for him, I
11:48:30 think he's made a -- he has had no recurrence of his cancer on
11:48:34 the x -- on his CT scan since he was -- had his right kidney
11:48:37 removed in 1997, yes.
11:48:39 Q. And just to follow up on that, you would agree, based on
11:48:42 his most recent medical records, Mr. Fancher has no evidence of
11:48:45 recurrent disease as it relates to kidney cancer, right?
11:48:48 A. That's correct.
11:48:51 Q. You'd agree that his kidney function is stable as of his
11:48:53 most recent medical records, right?
11:48:55 A. Yes.
11:48:57 Q. You'd agree that Mr. Fancher's bulge, otherwise known as a
11:49:01 flank hernia, is among the potential risks associated with an
11:49:06 open radical nephrectomy, right?
11:49:08 A. Right. Well, it's not a flank hernia because the fascia
11:49:10 layer is not disrupted. It's called a diathesis, which means
11:49:15 the muscles are separated. The muscles then atrophy, and so
11:49:19 the organs in that area can bulge out, and it can cause a lot

of achiness and heaviness and discomfort for the patient, as opposed to a hernia, which can be fixed surgically because you're repairing a fascial layer. It's a little different.

Q. Thank you for the correction, Dr. Del Pizzo.

A. Sure.

Q. Would you agree that the bulge is a risk associated with a nephrectomy?

A. Yes.

Q. And you'd agree that Mr. Fancher is expected to live a normal life expectancy, right?

A. Based on his kidney cancer diagnosis, yes.

MR. MARQUINA: Your Honor, I have no further questions, but at this time, the United States would renew its motion to exclude Dr. Del Pizzo. In the interest of judicial economy, I would direct the Court's attention to the United States filing on the master docket, docket entry 569 and 570, and the associated briefing therein.

THE COURT: I'm not sure what you're asking me to rule on, and so I'm not going to rule on it. I'll take it under advisement, and figure out what you meant later on. I have no idea what you're talking about.

MR. MARQUINA: Sure. Just for the record, it's --

THE COURT: All right. Are you finished with this witness?

MR. ROBERTS: Yes, sir, Your Honor.

11:50:28 THE COURT: All right. We'll take a recess. We won't go to lunch today until maybe 1 o'clock. We'll do lunch from 1:00 to 2:00, so you know. But we'll take a short recess now. We haven't had a recess all morning, and we'll resume with your next witness.

11:50:44 MR. ROBERTS: Thank you, Your Honor.

11:50:45 THE COURT: Thank you.

11:50:45 (A recess is taken from 11:50 a.m. to 12:05 p.m.)

12:05:21 THE COURT: Ma'am, what's your name?

12:05:22 THE WITNESS: Camilla Fancher.

12:05:24 CAMILLA FANCHER,

12:05:24 was sworn at 12:05 p.m., and testified as follows:

12:05:30 THE COURT: Go ahead.

12:05:31 MR. QUINN: Thank you, Your Honor.

12:05:32 DIRECT EXAMINATION BY MR. QUINN:

12:05:32 Q. Can you please state your name for the record, ma'am?

12:05:36 A. Camilla Fancher.

12:05:38 Q. And are you married to this gentleman, David Fancher?

12:05:41 A. Yes, I am.

12:05:43 Q. How long have y'all been married?

12:05:45 A. We got married December 1st, 1979.

12:05:48 Q. How did you first meet David?

12:05:51 A. David and I met when we were about five or six years old. We grew up together.

12:05:54 Q. So you've --

12:05:55 A. Been friends forever.
12:05:57 Q. You've been friends with David for basically your whole
12:06:00 life almost?
12:06:00 A. Yes. Yes, sir.
12:06:04 Q. Describe for the Court your marriage with David. How is
12:06:06 your marriage?
12:06:06 A. We have a really good marriage. We complement each other.
12:06:11 We balance each other out. He's a great husband, a good
12:06:15 provider, a good husband, father.
12:06:18 Q. Is he a loving guy?
12:06:20 A. Yes, very much.
12:06:21 Q. With you and the kids?
12:06:23 A. Yes.
12:06:24 Q. Tell us about David before his cancer diagnosis.
12:06:29 A. Before his cancer, he was very outgoing, athletic. He
12:06:33 played softball, bowling, tennis. We had a lot of friends he'd
12:06:41 do different things with.
12:06:43 Q. Did David get offered a scholarship anywhere?
12:06:46 A. Yes, he got offered a scholarship to Bethel in Kansas for
12:06:51 football after high school, but he chose to go into the Marine
12:06:53 Corps instead.
12:06:56 Q. Now, ma'am, do you recall when David was diagnosed with
12:07:02 cancer?
12:07:03 A. Yes.
12:07:03 Q. Tell us about that.

12:07:06 A. David and I went to the urologist, and he basically told
12:07:11 us that they didn't think they were going to be able to save
12:07:14 him, and that they would give us three weeks to get our affairs
12:07:19 in order and for David to say goodbye to whoever he wanted to
12:07:23 say goodbye to.
12:07:26 Q. Now, after you walked out of that medical office room and
12:07:31 you went into the hallway, did anything happen?
12:07:33 A. Yeah, there was a bench outside the door, and we both sat
12:07:37 there and held each other and cried. We were more concerned on
12:07:41 how we were going to tell the children.
12:07:44 Q. How many kids did you have -- do you have?
12:07:45 A. We have four.
12:07:45 Q. And what were their kind of ages at the time that David
12:07:51 was diagnosed?
12:07:53 A. Between -- the youngest was 8. Excuse me. The youngest
12:07:56 was 5, and the oldest was 15.
12:07:59 Q. So they were kids?
12:08:00 A. Yes, they were.
12:08:02 Q. I think you mentioned this just a little bit, but how is
12:08:07 David as a father? Is he a good father?
12:08:07 A. As a father?
12:08:10 Q. Yes, ma'am.
12:08:11 A. He was a wonderful father. He would do after-school
12:08:15 activities. Our children were involved in agriculture, and
12:08:21 when they did county state fair, he would help them with

whatever animal they had, whether it was a cow, a pig, a rabbit, whatever. And we had some children that were in drama, and he'd be one of the parents that would help sew clothes together for drama class.

THE COURT: Where did you live?

THE WITNESS: Pardon me?

THE COURT: Where did you live?

THE WITNESS: We lived in Orange City, Florida, central Florida.

THE COURT: Central Florida?

THE WITNESS: Uh-huh.

THE COURT: Okay. Because nobody asked you that.

THE WITNESS: No, but you did.

THE COURT: Right.

THE WITNESS: But we lived in the Daytona Beach area.

THE COURT: Okay.

THE WITNESS: Yeah.

Q. (By Mr. Quinn) Ma'am, do you remember telling your kids about David's cancer diagnosis?

A. Yes, I do.

Q. Talk to Judge Boyle, or the Court about it.

A. We basically waited for the older ones to get home from school and sat them down and told them everything that we were told by the urologist, and they had questions. We answered what we could answer. Everybody was crying and hugging, and

that was probably the hardest thing David and I ever had to do, was to tell them.
Q. Did David have surgery to address his cancer?
A. Yes, he did.
Q. Tell us about that. Tell us about the surgery.
A. David had his stomach cut open from the middle of his belly button to the middle of his back. They removed his right kidney, two ribs, lymph nodes. They said he approximately had 200 staples on the inside, 200 on the outside.
Q. How long was David in hospital?
A. David was in ICU for five days they had him there.
Q. What was the -- what was it like when you looked at David in that bed? What was the scene like?
A. He was hooked up to all kinds of machines, tubes. He had tubes in his nose and his mouth. He had a tube draining on his right side. He was moaning. He cannot take pain meds. He's allergic to them. So he was in a lot of pain. He was pale looking. He looked like he was on death's door.
Q. What was David's recovery -- in the immediate time frame after the surgery, what was his recovery like? Talk about that.
A. It was hard. We lived in a two-story house at the time. Of course, he couldn't navigate stairs, so we brought a bed downstairs for him. And he couldn't walk to the bathroom. He had to have somebody help him. He was basically immobilized

12:10:53 for a good three, four weeks. He couldn't do anything on his
12:10:56 own. I couldn't leave him by himself when I had to go run the
12:11:01 children to school or pick them up or after-school activities,
12:11:03 so my father or my father-in-law came over and would sit with
12:11:08 him till I got home.
12:11:11 Q. Now, after the surgery, did David develop any sort of
12:11:17 complications with the surgical site?
12:11:19 A. Yes, he did. He ended up getting an infection on the
12:11:22 inside and outside of the incisions, and we went to the
12:11:26 hospital Christmas morning.
12:11:29 Q. And after that infection, did David develop anything on
12:11:33 his body?
12:11:33 A. He had the bulge, is what we call it.
12:11:39 Q. How has the bulge impacted David's life?
12:11:43 A. He is in pain all the time from it. He's very self-
12:11:47 conscious about it. It hurts when he moves. It affects his
12:11:53 walking.
12:11:58 Q. Does he complain about it a lot?
12:12:00 A. He doesn't do sports anymore because of it.
12:12:04 Q. Does he complain about the bulge a lot?
12:12:06 A. Yes, he does, all the time.
12:12:08 Q. Does he wear -- I'm holding up a girdle right here. Does
12:12:11 he wear these?
12:12:13 A. He has one on right now.
12:12:15 Q. How often would he wear one of these?

12:12:17 A. Twenty-four/seven.
12:12:19 Q. Does he wear it when he sleeps?
12:12:20 A. Yes.
12:12:23 Q. Does he wear it when he's walking around the house?
12:12:24 A. Yes.
12:12:25 Q. What is the -- what is the purpose of the bulge? [sic] What does it do?
12:12:29 A. Basically, what it does is --
12:12:30 Q. I'm sorry, let me -- I'm sorry, ma'am. I asked a very bad question. I didn't mean to interrupt.
12:12:34 A. I'm sorry.
12:12:35 Q. What is the purpose of the girdle? What does --
12:12:37 A. The girdle.
12:12:37 Q. -- it do for his bulge, is what I meant to say.
12:12:39 A. It basically --
12:12:39 Q. I apologize.
12:12:39 A. -- holds the right side in where he can navigate himself around better, where the pain isn't as much.
12:12:49 Q. How has the bulge impacted David's sleep?
12:12:55 A. David tosses and turns a lot. He's got several different pillows on the bed, and he has to move or do a re-situation because he's -- he's not a back sleeper. He sleeps on his side. And if he moves too much one way or the other, he's moaning and groaning, and he doesn't sleep very good at all, so...

12:13:20 Q. Is David self-conscious about the bulge?
12:13:24 A. David's very self-conscious that you will never see him
12:13:27 without a shirt, ever, not even if he's swimming. He'll have a
12:13:31 shirt on.
12:13:33 Q. Now, ma'am, recently, as in, like, the last three weeks,
12:13:38 David had a little bit of a health scare. Won't you tell the
12:13:40 Court about what happened?
12:13:42 A. He ended up having pain on his left side when he went to
12:13:47 the urologist, and he had emergency surgery to remove a large
12:13:51 kidney stone.
12:13:53 Q. Now, what kind of impact did that have on David mentally
12:13:55 having that issue happen?
12:13:57 A. Oh, well, he was very concerned. He's only got the one
12:14:00 kidney, and he's still got another large stone on the kidney.
12:14:05 Q. Is he worried about the health of that remaining kidney?
12:14:08 A. He's really worried about the stone.
12:14:13 Q. Thank you, ma'am. I have no further questions.
12:14:14 A. Thank you.
12:14:14 THE COURT: Do you have any cross?
12:14:16 MR. MARQUINA: No cross, Your Honor.
12:14:17 THE COURT: All right. Thank you, ma'am.
12:14:18 THE WITNESS: Thank you. You have a good day.
12:14:18 THE COURT: Can you get down okay? Can we --
12:14:20 THE WITNESS: I got help.
12:14:21 THE COURT: Okay.

12:14:21 THE WITNESS: Thank you very much.
12:14:21 THE COURT: Okay. Be careful.
12:14:22 THE WITNESS: Okay.
12:14:22 (The witness exits the witness stand at 12:14 p.m.)
12:14:22 THE COURT: Next witness.
12:15:04 MR. ROBERTS: Yes, sir, Your Honor. We call David Fancher.
12:15:06 THE CLERK: Please place your left hand on the Bible, raise your right hand, and state and spell your name for the record.
12:15:07 THE WITNESS: David Fancher, spelled D-A-V-I-D F-A-N-C-H-E-R.

DAVID FANCHER,

was sworn at 12:15 p.m., and testified as follows:

DIRECT EXAMINATION BY MR. ROBERTS:

12:15:51 Q. Could you tell the Court who you are?
12:15:54 A. Yes. My name is David Fancher.
12:15:57 Q. And we heard from Camilla, your wife, before you took the stand, and I'm -- I don't want to replow that ground, but has your life with Camilla been a good life?
12:16:11 A. Yes, I believe it has been a good life. It has its ups and downs like any other relationship, but yes.
12:16:20 Q. Okay. When did you enlist in the Marines, Mr. Fancher?
12:16:28 A. I enlisted 1977, June.
12:16:33 Q. And what did you go back to do?

12:16:37 A. That's the day -- the beginning of June was active duty.
12:16:42 Q. And how old were you when you enlisted?
12:16:44 A. I was 18.
12:16:46 Q. And could you tell the Court, Mr. Fancher, why you
12:16:50 enlisted in the Marines?
12:16:52 A. Yes. My dad was a Marine. He was also retired military.
12:17:00 Uncle was retired Army. I have a brother, a younger brother,
12:17:04 that's retired Army, and I have another brother that spent time
12:17:08 in the Air Force. So it was in our DNA to be in the military.
12:17:17 Q. And where did you go to boot camp?
12:17:20 A. I went to boot camp in Parris Island.
12:17:23 Q. And where did you go after leaving Parris Island?
12:17:27 A. My first permanent duty station was the USS Independence,
12:17:32 an aircraft carrier.
12:17:33 Q. And where was that located?
12:17:35 A. In Norfolk, Virginia.
12:17:37 Q. And were you on what's called the Silent Drill Team?
12:17:41 A. That was part of my job, was silent drill. And
12:17:48 essentially, it was a performance of marching and rifle
12:17:56 maneuvers, and we did this in a parade formation, and that was
12:18:01 for dignitaries and, you know, high-ranking officials at
12:18:06 various ports of call.
12:18:07 Q. Is that where the Marines face each other and twirl --
12:18:11 A. Yes.
12:18:12 Q. -- rifles back and forth?

12:18:14 A. Yes.
12:18:15 Q. Now, after you left the USS Independence, where'd you go next?
12:18:21 A. I went to a small admin base in Virginia, Camp Elmore.
12:18:21 Q. And where did you go after Camp Elmore?
12:18:26 A. I went to Camp Lejeune.
12:18:28 Q. Okay. Did you have a military occupational specialty, or otherwise known as an MOS?
12:18:30 A. Yes, I did.
12:18:38 Q. And when you got to Camp Lejeune, what was your MOS?
12:18:41 A. Initially was basic rifleman. That's 0311. And then I was trained as a 0352, which is anti-tank weapon, and the weapon that I was trained in was the TOW missile system.
12:18:47 MR. ROBERTS: May I approach, Your Honor?
12:18:52 Q. Mr. Fancher, is that you in that photograph?
12:18:59 A. Yes, it is.
12:19:09 Q. And you're sitting in a Jeep, right?
12:19:20 A. Yes, sir.
12:19:23 Q. And what is attached to the Jeep?
12:19:25 A. That's the TOW missile system, and it's -- I can give you what that actually means.
12:19:27 Q. What does that mean?
12:19:29 A. Well, the TOW, the word "TOW" is T-W-O -- or T-O-W. And it stands for tube-launched, optically tracked, wired command link-guided missile.
12:19:31
12:19:35
12:19:37
12:19:39
12:19:45
12:19:49

12:19:51 Q. And is that the equipment that you trained on throughout
12:19:54 your time at Camp Lejeune?
12:19:54 A. Yes.
12:19:57 Q. And would you have been responsible for this particular
12:19:59 TOW?
12:20:01 A. Absolutely.
12:20:03 Q. You were assigned to Camp Lejeune from October 10th
12:20:09 through June 12th, 1981; is that correct?
12:20:12 A. That is correct.
12:20:15 Q. And you were -- when you first got to Camp Lejeune,
12:20:16 Mr. Fancher, where did you live, sir?
12:20:22 A. I lived in the barracks initially.
12:20:24 Q. Okay. And were the barracks located in Hadnot Point?
12:20:28 A. Yes, it was.
12:20:29 Q. And then there was a time when you and Camilla got
12:20:33 married, I believe on December the 1st.
12:20:35 A. Right.
12:20:35 Q. When you returned back to Camp Lejeune, did you live in an
12:20:40 apartment outside the main gate?
12:20:42 A. Yes. We lived in Webb Apartments. I would work, go in
12:20:47 and work daily, and sometimes later and stay the night
12:20:52 sometimes with duty, yes.
12:20:54 Q. Well, let's talk about the time when you were at Webb
12:20:57 Apartments. Did you maintain a bunk and a locker there at
12:21:01 Mainside in the barracks?

12:21:03 A. Yes.
12:21:04 Q. And why did you do that?
12:21:09 A. Because that was where I worked out of. All my uniforms
12:21:13 were there. All my equipment was there. A good portion, if
12:21:19 not all the during the day, I -- was spent there. So I
12:21:23 wouldn't carry that -- that stuff to and from my apartment.
12:21:29 Q. And did you -- when you moved to Webb Apartments, did you
12:21:32 occasionally spend the night in the barracks?
12:21:35 A. Yes.
12:21:35 Q. How often would that happen?
12:21:38 A. I would say conservatively, one or two times for guard
12:21:44 duty type situations.
12:21:48 Q. And you've had a couple of deployments; is that right?
12:21:51 A. That's true.
12:21:52 Q. You went to the Mediterranean, and then you went to the
12:21:56 Caribbean; is that correct?
12:21:57 A. That is correct.
12:21:58 Q. Did you win any awards in your last deployments?
12:22:03 A. I was attached to what was called a 1-8, which is a rifle
12:22:12 company, and we were a support weapon for them. And I was --
12:22:18 that was when we went on the Caribbean cruise, and I was
12:22:24 awarded a -- what they call a Meritorious Mast for professional
12:22:31 job that I did while I was on that -- on that particular float.
12:22:38 Q. Mr. Fancher, you heard Dr. Reynolds testify that you were
12:22:45 at Camp Lejeune for roughly 337 days, if we take into account

12:22:49 your deployment and leave time. Does that sound about right to
12:22:52 you?
12:22:53 A. That sounds about right, yes.
12:22:55 Q. Now, when you were living in the barracks at Hadnot Point,
12:23:00 where did you get your water?
12:23:03 A. Primarily we had hose bibs outside that we could access.
12:23:07 We had water fountains inside the barracks, and we also had
12:23:12 sinks in the barracks that we could fill canteens with and
12:23:15 drink from.
12:23:17 Q. And was that the day before bottled water?
12:23:20 A. Absolutely.
12:23:21 Q. And tell Judge Boyle about the chow hall. First of all,
12:23:27 where was the chow hall located in relation to the barracks?
12:23:32 A. Basically, we walked right out the front door and across
12:23:35 the street and up the hill. It was less than a five-minute
12:23:39 walk from the barracks. It was still right there in Hadnot
12:23:42 Point.
12:23:45 Q. And when you were living in the barracks, how often would
12:23:49 you eat at the chow hall?
12:23:52 A. Three meals a day.
12:23:54 Q. And how about when you were living off base at the Webb
12:23:57 Apartments?
12:23:59 A. If I stayed the night, it was going to be three meals. If
12:24:03 I was going home, I was -- I would eat three -- I would eat two
12:24:07 meals regularly, and if I liked what they were serving, I would

12:24:11 eat a third. I would eat dinner and give my wife a break, not
12:24:14 have to cook dinner for me.
12:24:17 Q. Did you drink water at the chow hall?
12:24:20 A. That's pretty much all I ever drank. I didn't drink
12:24:24 sodas. I didn't drink the Kool-Aid that they make, which they
12:24:27 called bug juice. All of that was just too sugary for me.
12:24:34 Q. I'd like to talk to you, Mr. Fancher, about field
12:24:39 training. Could you tell Judge Boyle what field training
12:24:41 involves?
12:24:43 A. Yeah, primarily we were right there near the barracks, and
12:24:47 we had a -- an infrared course set up that we would track the
12:24:56 missile system to that particular infrared target. And it was
12:25:03 only maybe 25, 30 meters away, but the target that that we had
12:25:08 to track was moving, and you had to lock onto that target for a
12:25:12 certain amount of time in order to qualify with the weapon.
12:25:15 And it was just a lesser expensive methodology of qualifying,
12:25:22 as opposed to shooting a 5,000-dollar missile each time you
12:25:26 needed to qualify. I did shoot live missiles, but not in --
12:25:30 not in those field training exercises. They were -- we would
12:25:35 go to a range and actually do a live fire.
12:25:38 Q. Was the field where you did your field training, was it at
12:25:42 Hadnot Point technically?
12:25:43 A. Yes, it was right there, right there near the barracks,
12:25:46 yeah.
12:25:48 Q. And when you -- when you did your field training, where

12:25:52 did you get your water?
12:25:54 A. We would bring water out with us in our canteens, and if
12:25:58 it was going to be a long day, they always had, you know, a
12:26:01 water buffalo style container that they would pull out with a
12:26:07 deuce and a half and just stage near where we were at, and you
12:26:11 just go over to it and fill your canteens up.
12:26:14 Q. And just so -- so what is a water buffalo? If you could
12:26:17 explain that to the Court.
12:26:18 A. It's a water-carrying tank that had an axle on it, and it
12:26:26 would be pulled behind a heavy truck.
12:26:30 Q. Did you ever use water from the water buffalo in preparing
12:26:35 food while you were in the field?
12:26:38 A. Yeah. During my time in the Marine Corps, we were eating
12:26:45 C-rations that were Korean and Vietnam vintage. So if anybody
12:26:54 knows what that really means, it's --
12:26:55 THE COURT: '50s and '60s?
12:26:55 A. -- rations that come in -- in a box or cans.
12:27:00 THE COURT: '50s and 60s.
12:27:02 THE WITNESS: Exactly. Exactly.
12:27:03 A. And unlike what they do today, which is, you know, you add
12:27:09 water to stuff and, you know, you have to rehydrate everything,
12:27:12 back then, everything came in a can and it was excessively
12:27:17 greasy, so we added water to it just to make it edible, so it
12:27:22 was --
12:27:22 Q. How about physical training? We've talked about -- before

12:27:26 I get into that, how often would field training actually last
12:27:30 when you were out there with the TOW training? How long would
12:27:35 the field training typically last?
12:27:38 A. It could go as long as into the night. I mean, you're
12:27:42 talking, you know, 12 to 16 hours easily.
12:27:48 Q. And let's talk briefly about physical training. How often
12:27:52 did you do physical training?
12:27:54 A. Every day.
12:27:55 Q. All right.
12:27:56 A. Every single day.
12:27:59 Q. Running, exercising, things like that?
12:28:00 A. Yes.
12:28:01 Q. And where did you get your water when you were doing your
12:28:04 field -- doing your physical training?
12:28:07 A. From the barracks.
12:28:08 Q. Were you encouraged to drink water by your commanding
12:28:14 officers?
12:28:14 A. Yes, commanding officers, step MCOs. Anybody that was in
12:28:17 charge of us would set time aside on a regular basis for
12:28:23 everybody to drink water.
12:28:25 Q. Now, let's talk about the showers at the barracks. Could
12:28:28 you describe for Judge Boyle the showers that were at the
12:28:32 barracks?
12:28:32 A. Well, I can tell you this: They weren't very fancy. They
12:28:36 were, you know, open. You know, they had a block wall that

12:28:44 separated the sinks and the toilets, but the showers themselves
12:28:49 were open bay style showers. I mean, if you were modest, you
12:28:55 weren't going to -- you weren't going to last long.
12:28:56 Q. How often did you -- did you shower?
12:29:02 A. Really, on average, once a day, and sometimes more. It
12:29:08 just depends on -- you know, if we worked out early in the
12:29:13 morning, I'd take a shower. I wouldn't go the day in my
12:29:17 uniform dirty. And when I was living off base, I would take a
12:29:23 shower before I'd go home because the last thing I wanted to do
12:29:25 was go home stinky. So, you know, like I said, it was, you
12:29:32 know, every day at least once and possibly twice.
12:29:37 Q. Was there much ventilation in the showers?
12:29:41 A. Not that I recall. Most of the times that I remember
12:29:48 shaving, I literally had to have a towel wiping off the mirror
12:29:52 regularly. So it was constant steam.
12:29:57 Q. Now, Mr. Fancher, when did you leave the Marines?
12:30:03 A. I was -- end of my enlistment would be June of 1981.
12:30:09 Q. And were you honorably discharged?
12:30:12 A. Yes, I was.
12:30:14 Q. And why did you decide to leave the Marines?
12:30:20 A. I wanted to re-enlist. I honestly did. We were a young
12:30:24 couple, married. My wife was fixing to have a baby, and we
12:30:30 pretty much just sat down and hashed it out and came to the
12:30:34 understanding that we really needed -- I needed to be home more
12:30:37 often, and that was the reason why I opted not to re-enlist.

12:30:43 Q. But when you left the Marines in 1981, what did you do at
12:30:47 that time?
12:30:50 A. I enrolled in college.
12:30:53 Q. Where was that?
12:30:53 A. At Seminole Community College in Sanford, Florida.
12:30:58 Q. And did you graduate?
12:31:00 A. Yes, I did.
12:31:01 Q. And what did you do? Well, let me ask you this: What did
12:31:04 you earn your degree in from Seminole?
12:31:07 A. Architectural technology.
12:31:08 Q. And where did you go after earning your degree?
12:31:11 A. I went to work for the School Board of Volusia County as a
12:31:16 project manager/draftsman in their facilities department.
12:31:21 Q. What were you responsible for?
12:31:23 A. I was responsible for the entire school district's 80-plus
12:31:28 schools' and buildings' roofing needs.
12:31:33 Q. And prior to your cancer surgery, Mr. Fancher, did you
12:31:39 live an active life?
12:31:41 A. Yes, I was very active.
12:31:44 Q. And what sort of things did you like to do?
12:31:47 A. I had hobbies. I played softball with a men's commercial
12:31:51 league, second base. I enjoyed that. I bowled on multiple
12:31:57 leagues, both mixed leagues and men's leagues. I loved play
12:32:03 golf. I taught myself how to play golf, and I did that at
12:32:08 least a couple times a week. And so, yeah, I was physical. I

worked out with a neighbor who was active duty military and we'd run, run every day, work out with weights every day, and so that's -- that's just in my -- was in my DNA, too.

Q. What caused you to seek medical attention in December of 1997?

A. I got up in the morning like any other morning. I got ready for work and decided to go to the bathroom before I left the house and noticed that I was urinating a large amount of blood. I wasn't in any pain, so I was a typical man; I was going to just blow it off. But on the way out the door, I mentioned it to my wife, and before I got home from work, she had an appointment set for me for my primary care physician, and thank God she did that because I probably wouldn't be sitting here today.

Q. Well, let me ask you this: Did your primary care physician refer you to a urologist?

A. Yes. Yes.

Q. And what did the urologist tell you?

A. After reviewing the testing information that they -- that he had, you know, that the primary care physician took care of, he basically said, "You're going to need -- you're going to need a CAT scan before we do surgery." That's how I found out they were going to do surgery, is him telling me, "I'm going to do a CAT scan on you." But he said I had a very large tumor, and he wasn't sure if it was -- based on the testing data that

12:33:57 he had, he wasn't sure if it was inside the kidney or outside
12:34:00 the kidney, but he said the prognosis was poor because of the
12:34:06 size.
12:34:07 Q. So did you -- did you tell your children about that
12:34:12 diagnosis?
12:34:12 A. Yes.
12:34:15 Q. How was that, Mr. Fancher?
12:34:22 A. It was the toughest day of my life.
12:34:29 Q. And you had surgery on December the 12th of 1997 and had
12:34:35 your kidney removed; is that correct?
12:34:38 A. Yes, that is correct.
12:34:40 Q. And did you have any complications from the surgery?
12:34:44 A. I did. I developed a very serious infection that the
12:34:51 doctor wanted to put me in the hospital on Christmas Day, no
12:34:54 less, and I just -- I just couldn't go there, you know, but,
12:35:01 thankfully, my wife stepped up, and, you know, they taught her
12:35:06 what she needed to do, and she took care of the cleaning and
12:35:12 all the things that needed to be done to make sure that I
12:35:15 didn't have to go into the hospital.
12:35:17 Q. Was that painful when she was cleaning your incision?
12:35:21 A. Yeah, they -- she had to use 8-inch long Q-tips to clean
12:35:27 out the incision, and I -- I got a pretty strong stomach about
12:35:32 that kind of stuff, but I couldn't do it. I honestly couldn't
12:35:36 do it.
12:35:39 Q. Mr. Fancher, we've heard about the bulge that you got from

12:35:44 your surgery.
12:35:45 A. Right.
12:35:45 Q. Mr. Fancher, I'm going to show you what we have marked as
12:36:05 Exhibit 106.3. Actually, it's 108.3. My fault. Mr. Fancher,
12:36:49 is this an accurate depiction of the bulge on your right side?
12:36:54 A. Yes, it is.
12:36:56 MR. ROBERTS: Your Honor, we'd offer Exhibit 108.3
12:36:58 into evidence.
12:36:59 THE COURT: Received.
12:36:59 (Plaintiff's Exhibit Number 108.3 received.)
12:36:59 Q. Mr. Fancher, how long have you lived with that bulge?
12:37:11 A. Within days of getting out of the hospital, that bulge
12:37:16 basically developed.
12:37:19 Q. So has the bulge affected you physically in terms of what
12:37:25 you can do?
12:37:26 A. Yes, I -- like I said, I can't -- because I'm right
12:37:31 handed. So if I bowl, I can't bowl. If I swing a golf club --
12:37:36 I'm right handed. I can't -- I can't swing a golf club. I
12:37:42 can't throw a ball. I mean, it's just so many things
12:37:45 physically that I can't do because of that. I'm off balance.
12:37:50 I'm -- you know, it affects -- it affects how I move day to
12:37:55 day. It affects how I sleep.
12:37:59 Q. How has it affected how you sleep?
12:38:03 A. I have at least two orthopedic pillows that I keep on the
12:38:09 bed, and I have six other pillows that are literally stacked

around me, so to keep me in one place. The problem with that is I'm a mover when I sleep, so if I roll over, then basically I have -- it wake -- I wake up because my side is spasming and cramping up and, you know, I got to readjust the girdle I'm wearing at night, so it's -- it's just a process.

Q. Mr. Fancher, did you talk to your urologist about how to live with this bulge?

A. Basically, my urologist said that wearing the girdle was really the only thing I could do to mitigate the pain. It wouldn't completely stop it, but that's what he said.

Q. Mr. Fancher, I'd like to show you what has been marked as Plaintiff's Exhibit 108. Is that a photograph of you wearing a girdle?

A. Yes. That's one of the girdles that I wear. It's a -- it has additional straps on it that -- that allow me to, you know, do a little bit more physical activity. I can tighten it up a little tighter, so...

Q. Do you have a girdle on today?

A. Yes, I do.

Q. And I'm showing you what I'm holding up here. These are two additional girdles. Are these also girdles that you wear?

A. Yes. The two smaller ones, I wear at night, and I wear that one in the photograph during the day if I'm doing any type of physical activity, like walking or anything of that nature, or I'm out grocery shopping, you know, those types of things.

12:40:17 And then I have another one that I'm wearing now, which is --
12:40:20 it's about the same size, but it doesn't have the additional
12:40:24 straps on it, so I don't -- I don't have the flexibility of
12:40:28 tightening this one up. If things start to get a little
12:40:31 painful, I really can't do that.
12:40:34 Q. Mr. Fancher, would be fair to say that you've worn that
12:40:37 girdle or a similar girdle 24/7 for the last 30 years, almost?
12:40:42 A. With the exception of taking a shower, I would say yes.
12:40:48 Q. Okay. Let's go to the time that you tried to return to
12:40:54 work following your kidney surgery. Did you return to work?
12:40:59 A. Yes, I did.
12:41:00 Q. And was that difficult for you?
12:41:02 A. It was difficult. I was still recovering. My incision
12:41:08 was still draining, so I had to -- there was certain things I
12:41:12 couldn't do out in the field. I couldn't walk around the
12:41:15 school with my side running, so, you know, the School Board
12:41:21 made allowances for me to, you know, have people help me that
12:41:26 were in our maintenance department. They would go and, you
12:41:29 know, if I needed a ladder set up to go look at something,
12:41:33 they'd set the ladder up. They'd move the ladder for me.
12:41:36 They went as far as if I had to get up on a roof that was
12:41:44 really sketchy in terms of ladders, they would bring out a high
12:41:47 lift and put me in that high lift and take me up to the roof
12:41:52 and let me do what I needed to do and see what I needed to see.
12:41:56 So, you know, they really, really stepped up for me.

12:42:00 Q. Mr. Fancher, how long were you with the Volusia County
12:42:03 School Board?
12:42:05 A. Thirty years and six months -- or thirty-three years and
12:42:10 six months. I'm sorry.
12:42:12 Q. And you retired, what, seven years ago or so?
12:42:15 A. Seven. Yeah, roughly seven.
12:42:16 Q. Were you generally healthy prior to your kidney cancer?
12:42:20 A. Yes, very healthy.
12:42:22 Q. And have you ever smoked?
12:42:24 A. No.
12:42:25 Q. Has anyone in your family ever had kidney cancer?
12:42:28 A. No.
12:42:29 Q. Were you diabetic at the time of your diagnosis?
12:42:32 A. No.
12:42:33 Q. Were you obese at the time of your diagnosis?
12:42:36 A. No.
12:42:37 Q. At the time of your diagnosis of kidney cancer, were you
12:42:43 aware that you had been exposed to toxic water at Camp Lejeune?
12:42:48 A. I was not aware.
12:42:49 Q. When did you find that out?
12:42:52 A. I received a -- or my wife and I actually received a
12:42:55 letter from the Department of the Navy stating that we had
12:43:00 been essentially exposed to toxic chemicals at Camp Lejeune.
12:43:08 Q. And that would have been in 2008?
12:43:10 A. 2008.

12:43:11 Q. Do you see Plaintiff's Exhibit 121 in the notebooks there?
12:43:21 A. Oh, you want me to look at this?
12:43:23 Q. Yes, sir.
12:43:28 A. What's it under?
12:43:30 Q. Tab 121, sir.
12:43:32 A. 121. Okay, I'm looking at it.
12:43:45 Q. And that letter reads, does it not, "Unregulated chemicals were discovered in some of the base drinking water systems in the early 1980s. At this time, the Marine Corps is funding health studies to determine when the drinking water was first impacted, who may have consumed it, and whether or not there may be any associations between exposure to the water and certain health conditions." Did I read that correctly?
12:44:11 A. Yes, you are reading it correctly.
12:44:15 Q. Mr. Fancher, what was your reaction when you got that letter from the Department of the Navy?
12:44:22 A. It was like a giant light bulb going off in my head. It's like, here's written -- a written document from the Department of the Navy stating that -- that for all intents and purposes, this is why I got sick, this is why I lost my kidney. That's the way I read it. And it was -- it was upsetting. I mean, I -- I was upset.
12:44:48 MR. ROBERTS: Your Honor, we'd offer Plaintiff's Exhibit 121, and I don't believe I offered 108 either with the --
12:44:56

12:44:56 THE COURT: I'll receive those.
12:44:58 MR. ROBERTS: Thank you, Your Honor.
12:44:59 (Plaintiff's Exhibit Numbers 108 and 121 received.)
12:44:59 Q. Mr Fancher, could you tell Judge Boyle how this cancer, the kidney removal, how it affected your life?
12:45:21 A. Just to put it in the simplest form, I don't -- I can't remember the last time I've slept in bed with my wife, and that -- that's painful, emotionally painful. And it has changed the way I move. It changed the way I think. It's -- it's been an ongoing process for years. You know, I put on a happy face because I don't want to walk around negative and all sour faced, but the bottom line is this has changed -- changed me, you know, and not for the -- not for the better, unfortunately.
12:46:14 MR. ROBERTS: Nothing further, Your Honor.
12:46:15 THE COURT: Any cross?
12:46:15 MR. MARQUINA: Very briefly, Your Honor.
12:46:17 CROSS-EXAMINATION BY MR. MARQUNIA:
12:46:21 Q. Good afternoon, Mr. Fancher.
12:46:22 A. Afternoon.
12:46:23 Q. My name is Eric Marquina, and I just have a few questions for you today.
12:46:27 A. Sure.
12:46:28 Q. On direct you testified that you resided on an off-base apartment called the Webb Apartments, right?

12:46:35 A. Correct.
12:46:36 Q. And I just wanted to get the dates for that time frame
12:46:39 correctly. Was that from approximately December 1979 to
12:46:43 May 1980?
12:46:50 A. May 1980, yeah, that's -- that's pretty accurate, yes.
12:47:03 Q. Mr. Fancher, you currently receive benefits from the VA,
12:47:09 right?
12:47:10 A. Yes, I do. I have service-connected benefits.
12:47:15 MR. MARQUINA: Your Honor, may I approach?
12:47:16 THE COURT: Yes.
12:47:29 MR. MARQUINA: And for the record, this has been
12:47:34 premarked as United States Exhibit 4001, Bates range 00275
12:47:42 underscore Fancher underscore VBA underscore 7526.
12:47:49 Q. Mr. Fancher, is this a letter summarizing the benefits you
12:47:56 receive from the VA --
12:47:57 A. Yes.
12:47:58 Q. -- dated December 15th, 2020?
12:48:00 A. Yes, it is.
12:48:02 Q. Does this letter reflect that you receive a monthly sum
12:48:06 for service-connected injuries?
12:48:09 A. Yes, it does.
12:48:24 MR. MARQUINA: Your Honor, may I approach one more
12:48:24 time?
12:48:24 THE COURT: Yes.
12:48:24 MR. MARQUINA: Also, Your Honor, at this time, I

would note for the record that this Exhibit 4001 is an excerpt from the broader VBA record encapsulated by United States Exhibit 298.

THE COURT: Okay.

MR. MARQUINA: And I would respectfully move the broader set of Exhibits 298 into evidence.

THE COURT: They'll be received.

(Defendant's Exhibit Number 298 received.)

MR. MARQUINA: And for the record, I just handed Mr. Fancher United States Exhibit 4002, Bates range -- or Bates number 275 underscore Fancher underscore VBA underscore 7531.

Q. Mr. Fancher, is this a rating decision from the VA dated February 6th, 2020?

A. It is, yes. 2/6/2020, correct.

Q. And this document lists service-connected injuries that you receive benefits for, right?

A. Right.

Q. If you look at that first page, starting with the number 7500, it says that you receive benefits for kidney cancer, to include nephrectomy and left renal cyst, now claimed as chronic pain kidney, environmental hazard at Camp Lejeune, correct?

A. Correct.

Q. And the document states that this specific injury is labeled as a static disability, right?

A. That is correct.

12:50:11 Q. And, Mr. Fancher, if you could please turn to the second
12:50:13 page on that document.
12:50:14 MR. MARQUINA: For the record, that second page has
12:50:16 Bates number 275 underscore Fancher underscore VBA underscore
12:50:25 7532.
12:50:25 Q. And, Mr. Fancher, if you go to the part of the page noting
12:50:32 the number 7804, do you see that?
12:50:35 A. Yes, I do.
12:50:36 Q. It says that you receive benefits for surgical scar, SP,
12:50:39 nephrectomy, painful scar now claimed as chronic pain scar
12:50:45 associated with kidney cancer, to include nephrectomy and left
12:50:48 renal cyst, now claimed as chronic pain kidney, correct?
12:50:52 A. That's correct, 10 percent.
12:50:54 Q. And the document states that this specific injury is a
12:50:56 static disability, right?
12:50:58 A. That's what it states, yes.
12:51:01 Q. Mr. Fancher, these ratings have not changed since you
12:51:03 received this correspondence in 2020, right?
12:51:08 A. No, they haven't changed.
12:51:15 MR. MARQUINA: No further questions, Your Honor.
12:51:16 THE COURT: Okay. I guess that's all.
12:51:18 THE WITNESS: Is that it?
12:51:18 THE COURT: Yeah. Thank you.
12:51:20 THE WITNESS: No. Thank you.
12:51:25 (The witness exits the witness stand at 12:51 p.m.)

12:51:25 THE COURT: Well, this is -- are you finished with this witness?

12:51:27 MR. ROBERTS: Yes, sir, Your Honor.

12:51:27 THE COURT: All right. We'll start our luncheon recess and resume at 2:00.

12:51:31 (Luncheon recess taken from 12:51 p.m. to 2:02 p.m.)

12:51:33 THE COURT: Next witness.

02:02:18 MR. QUINN: Your Honor, we don't have anymore live witnesses for the plaintiffs. This is Matthew Quinn, for the record. We don't have anymore live witnesses.

02:02:21 We would like to move in the designation of two deposition transcripts. On the pretrial order, we identified Exhibit 87, which is the deposition transcript of Frank Bove, Dr. Bove being the individual who conducted the health studies for Camp Lejeune that the Court's heard about. So Volume 1 of his deposition is Exhibit 87 in our -- on the pretrial order. We would move that into evidence.

02:02:22 02:02:27 02:02:29 02:02:39 02:02:44 02:02:50 02:02:54 02:02:58

02:03:00 Additionally, Volume 2 of Dr. Bove's deposition was marked on the pretrial order as Exhibit 87.1. So we would move that into evidence as well. And the Department of Justice made a few objections to certain portions of testimony. The transcripts that are in our materials reflect those objections where they were made. So we'd move those two transcripts in that.

02:03:00 02:03:06 02:03:11 02:03:16 02:03:21 02:03:24 02:03:27

02:03:28 THE COURT: They'll be received.

02:03:29 (Plaintiff's Exhibit Numbers 87 and 87.1 received.)
02:03:29 MR. QUINN: And with that, we rest, Your Honor.
02:03:32 THE COURT: Okay.
02:03:33 MR. BAIN: Your Honor, we would briefly like to make
02:03:34 a motion for a judgment on partial findings under Federal Rule
02:03:38 of Civil Procedure 52(c).
02:03:42 THE COURT: Okay.
02:03:42 MR. BAIN: It's going to very brief, Your Honor. The
02:03:44 Court held in its specific causation order dated June 5th,
02:03:47 2024, that the plaintiff bears the burden of proof on exposure,
02:03:51 general causation and specific causation. As set forth in the
02:03:55 United States's pending summary judgment motion, the plaintiff
02:03:57 must do so using reliable and admissible expert testimony.
02:04:01 The legal standard under Rule 52(c) authorizes the
02:04:06 District Court that is sitting without a jury in a bench trial
02:04:06 to enter judgment as a matter of law against a party on any
02:04:13 claim once the party has had a full opportunity to present
02:04:16 evidence on the claim, which the plaintiff has had.
02:04:18 On exposure, ATSDR specifically stated that its model
02:04:25 could not be used for the purpose the plaintiff attempted to
02:04:27 use it here, which is to determine individual exposure. That's
02:04:30 the only evidence that they had on exposure, and that's the
02:04:34 basis of their exposure proof in this case.
02:04:37 On general causation, you heard from Dr. Hatten in
02:04:41 the *Mousser* case, and that evidence has been submitted in this

02:04:45 particular case. He stated that he relied on the Camp Lejeune
02:04:49 at least as likely as not standard to reduce his methodological
02:04:53 rigor, and he failed to conduct a reliable Bradford Hill
02:04:57 analysis.
02:04:57 He also admitted that the results of the 2024 Cancer
02:05:02 Incidence Study failed to find any statistically significant
02:05:06 relationship between the Camp Lejeune water and kidney cancer
02:05:09 when a Camp Lejeune cohort was compared to a Camp Pendleton
02:05:12 cohort.
02:05:12 This is the most robust and reliable study that has
02:05:16 been offered. Thus, the plaintiff has failed to prove that the
02:05:25 contaminated water at Camp Lejeune was capable of causing
02:05:27 kidney cancer.
02:05:28 On specific causation, plaintiff's specific causation
02:05:32 expert, Dr. Del Pizzo, who you heard from today, failed to
02:05:37 consider idiopathy, so he was unable to perform a reliable
02:05:40 differential diagnosis. He admitted on the stand this morning
02:05:44 that once he identified a cause, he did not consider idiopathy.
02:05:47 That's not a reliable differential diagnosis.
02:05:50 Additionally, the exposure that he considered for
02:05:54 Mr. Fancher was based on a miscalculation of the micrograms per
02:05:58 liter month that Dr. Reynolds testified to this morning.
02:06:02 So for those reasons, Your Honor, we would ask that
02:06:05 you grant our motion for judgment of partial findings under
02:06:09 Rule 52.

02:06:11 THE COURT: It'll be denied at this time, subject to being reopened at the end of the case.

02:06:13 MR. BAIN: Thank you, Your Honor.

02:06:15 THE COURT: Okay.

02:06:16 MR. BAIN: We would call as our first witness Dr. Judy LaKind, to the witness stand.

02:06:19 THE CLERK: Please place your left hand on the Bible, raise your right hand, and state and spell your name for the record.

02:06:42 THE WITNESS: Judy Sue LaKind, J-U-D-Y S-U-E L-A-K-I-N-D.

02:06:42 JUDY LAKIND, PH.D.,

02:06:57 was sworn at 2:06 p.m., and testified as follows:

02:06:57 THE COURT: Good afternoon.

02:06:57 THE WITNESS: Good afternoon, Your Honor.

02:06:57 DIRECT EXAMINATION BY MR. ANTONUCCI:

02:07:11 Q. Good afternoon. Please state your name for the record.

02:07:30 A. Judy Sue LaKind.

02:07:32 Q. Have you been retained by the Department of Justice to offer expert opinions in this case?

02:07:35 A. I have.

02:07:36 Q. Are you offering expert opinions concerning Mr. Fancher's exposures to contaminants in this case?

02:07:38 A. Yes.

02:07:41 Q. We'll talk about those in just a few moments, but first,

02:07:43

02:07:45

02:07:48 I'd like to talk to you about your qualifications to testify as
02:07:50 an expert in this case. What is your occupation?
02:07:54 A. I'm an exposure scientist.
02:07:55 Q. What is exposure science?
02:07:57 A. So in exposure science, we examine exposures between
02:08:01 people and environmental stressors, and that would include
02:08:04 chemicals. And we tend to focus on three main routes of
02:08:08 exposure, and that would be ingestion, inhalation and dermal
02:08:12 exposure.
02:08:13 Q. For how long have you worked as an exposure scientist?
02:08:16 A. About 38 years.
02:08:18 Q. Can you please describe your educational background after
02:08:21 high school?
02:08:22 A. I can. I have a bachelor's degree in geology from the
02:08:25 Johns Hopkins University, a master's degree from the University
02:08:29 of Wisconsin-Madison, also in geology, and a Ph.D. from the
02:08:33 Johns Hopkins University in geography and environmental
02:08:36 engineering.
02:08:38 Q. And do you currently hold any academic appointments?
02:08:40 A. I do. I have two. I'm an adjunct associate professor at
02:08:43 the University of Maryland School of Medicine in the Department
02:08:47 of Epidemiology and Public health, and I'm a Whiting Fellow in
02:08:50 the Department of Applied Mathematics and Statistics at the
02:08:53 Johns Hopkins University.
02:08:56 Q. In your role, do you publish scientific research?

02:08:59 A. Yes, I do.
02:09:00 Q. Approximately how many papers on exposure science have you
02:09:03 published in your career?
02:09:04 A. Somewhere in the neighborhood of 120 papers.
02:09:07 Q. Have you ever served on the editorial board of any peer-
02:09:10 reviewed scientific journal?
02:09:12 A. Yes, I've served on several editorial boards, and I'm
02:09:14 currently an editor at the journal *Environment International*.
02:09:18 MR. ANTONUCCI: Your Honor, the United States moves
02:09:20 to proffer Dr. LaKind as a qualified expert witness in the
02:09:23 field of exposure science.
02:09:24 THE COURT: The witness is recognized as an expert in
02:09:26 that field and is allowed to express her opinions.
02:09:31 Q. Dr. LaKind, what were you asked to do in this case?
02:09:34 A. Right. So I was asked to evaluate exposure to plaintiffs
02:09:36 at Camp Lejeune where the exposure was from environmental
02:09:41 chemicals, in particular volatile organic chemicals in the
02:09:44 drinking water at Camp Lejeune.
02:09:46 Q. Have you created a presentation to help illustrate your
02:09:48 opinions in this case?
02:09:49 A. Yes, I have.
02:09:50 Q. And is it being shown to the Court now?
02:09:52 A. It is.
02:09:53 MR. ANTONUCCI: For the record, this illustrative aid
02:09:55 will be marked for identification as the United States Exhibit

4003.

THE COURT: All right.

MR. ANTONUCCI: If I may approach, Your Honor, I also have paper copies.

THE COURT: Okay.

Q. Dr. LaKind, what were your goals in setting out to describe Mr. Fancher's exposure?

A. Right. So I have a slide on this. If you could just go to the next page. Thank you.

All right. So I had three main goals, and the main goals in doing these exposure assessments was to produce exposure information that would be scientifically defensible, would also be realistic, but at the same time be conservative. And what I mean by conservative is to err on the side of higher exposure, and we do that in order to avoid underestimating exposure.

Q. So I'd like to ask now about how you did what you did in this case. What sorts of things do you take into account when you are assessing a person's exposure to a contaminant?

A. Right. So that's actually on the next slide, and this is very big picture, very high level. The kinds of things that we look at when assessing exposure include the amount of exposure, the route of exposure, and then human behavior and characteristics.

Q. Dr. LaKind, let's take those one at a time, starting with the amount of exposure. Can you please explain what that is?

02:11:33 A. Yeah. So on the next slide, when we talk about amount of
02:11:36 exposure, we're really talking about something like dose, and
02:11:39 dose is extremely important.
02:11:40 And I'd like to use an example, and I'd like to use the
02:11:43 example of alcohol. I want to be really clear that I'm not
02:11:47 equating exposure to alcohol with exposure to chemicals at Camp
02:11:49 Lejeune. I'm only using this as an example that we tend to be
02:11:53 familiar with as laypeople.
02:11:54 And so imagine a situation on that diagram on the left
02:11:58 where we have a person who drinks one drink per week, and then
02:12:01 we have on the right-hand side a person who drinks several
02:12:04 drinks per day. I think we inherently understand that those
02:12:08 two people are likely to have pretty different health outcomes.
02:12:11 So the amount that we're exposed to is important.
02:12:14 Q. And is the amount of exposure sometimes referred to as
02:12:16 dose?
02:12:17 A. It is.
02:12:18 Q. What units do you use to express dose?
02:12:22 A. Right. So if you can go to the next slide, the units that
02:12:24 I use to express dose are common units, and they are referred
02:12:28 to as microgram per kilogram day. And all that means is
02:12:33 microgram of a chemical -- and you can see that on the top of
02:12:35 that diagram -- divided by the kilogram body weight of the
02:12:39 person, and then divided by each day of exposure. And then on
02:12:42 the bottom, I simply wrote it out so you can kind of see what

it looks like when I say the words "microgram chemical per kilogram body weight day."

Q. So, Dr. LaKind, what happens to the dose, all else being equal, when a person's body weight changes?

A. Right. So, for example, if a person's body weight increases, all else being equal, arithmetically, the dose would decrease.

Q. And is the inverse also true?

A. It is.

Q. Before we get further into the weeds, I'd like to ask you more about the units of your results. Can you please explain what a microgram is?

A. Yeah. So you can go to the next slide. A microgram is simply -- it's a unit of mass, and it equals a millionth of a gram. And I think that's pretty hard for most of us to visualize, but an easy way to think about it is that a single grain of salt equals about 50 to 100 micrograms.

Q. Do you use any other units to express your results?

A. I do, and as an example, on the next slide -- I think I have a slide for this. So I'll be talking about units of microgram of the chemical per cubic meter of air, and because most of us can't visualize a cubic meter of air, we can simply picture a box that's got a height, a width and a length all equal to one meter. So that would be a cubic meter of air.

Q. So lastly, because we don't often measure volume in terms

of liters here in the United States, I'm holding a 32-ounce water bottle. Approximately how much water in liter -- liters does this water bottle hold?

A. Yeah, that's about a liter.

Q. Okay. So, Dr. LaKind, returning to those three things you take into account when assessing a person's exposure, what are the routes of exposure you considered for people exposed to the water at Camp Lejeune?

A. Right. So if you can go to the next slide, I considered three main routes of exposure. So I looked at exposure via what we call the dermal route, so the amount of chemical that actually crosses the skin and gets into the body. And I also looked at the ingestion route, so the amount we take into our mouth and we swallow. And then I also looked at the inhalation route, the amount that we breathe in, and the inhalation route might be kind of confusing at first because we're talking about chemicals in drinking water and why do we care about inhalation, but these chemicals are volatile, and so some fraction of the chemical is going to leave the water and go into the air. Once it's in the air, it's available for people to breathe in, and so we have to think about inhalation exposure as well.

Q. What are the sources of information for exposure scientists who are conducting exposure assessments?

A. Yeah, so you can go to the next slide. We have lots of

sources of information for evaluating people's exposures. I'm sorry, it's the next slide after that. My apologies.

For example, we can use self-reports of personal information. So we have -- oftentimes, we have things like diaries, we have questionnaires. In the case of Camp Lejeune, we had depositions from which we could get personal information. Unfortunately, that's usually not enough. We need more information.

But fortunately, there are lots and lots of research studies on people's behaviors and characteristics, and the Environmental Protection Agency has taken a lot of that information, aggregated it and evaluated it, and put it all together in a book called the *Exposure Factors Handbook*, and that's a critical source of information for exposure scientists, so we have that source as well. And then we also have measurements and we have models.

Q. So apart from depositions, which you mentioned, did you use any other sources to gather information on Mr. Fancher's behavior and characteristics?

A. Right. So I often, including for Mr. Fancher, had other military records. I had things like housing records. I had things like deployment records, so I could figure out when Mr. Fancher was on base. So I used all of that information to understand his exposure.

Q. And how did you use military records in your exposure

02:16:37 assessment?
02:16:38 A. Right. So as I kind of mentioned just previously, I would
02:16:41 use that information to figure out things like where he might
02:16:43 have lived on base or when he was on base, when he might have
02:16:47 left base, and all of that would become part of the exposure
02:16:51 assessment.
02:16:52 Q. Did you make any assumptions about Mr. Fancher's duration
02:16:55 of exposure to water at Camp Lejeune?
02:16:59 A. I did, so I assumed that if he was on base for at least
02:17:01 two days out of any month, that he would have been on base for
02:17:04 that entire month.
02:17:07 Q. Dr. LaKind, did you have any measurements available for
02:17:11 you to use in this analysis?
02:17:13 A. So there were a few measurements made of these chemicals
02:17:15 in the water at Camp Lejeune, but they were very few, and they
02:17:19 were mostly done after 1980, so a time when a lot of the
02:17:22 plaintiffs weren't on base. So not enough for me to use in my
02:17:26 exposure assessment.
02:17:27 Q. What did you use instead of measurements?
02:17:30 A. Yeah, I used the ATSDR modeled mean one -- monthly water
02:17:35 concentration data.
02:17:36 Q. Why did you use the simulated contaminant concentrations
02:17:39 from ATSDR?
02:17:41 A. Yes, actually, there were a few reasons. The first is
02:17:43 that the Department of Justice asked me to use the information

because they wanted me to answer the question, if those concentration data produced by ATSDR actually reflected what was happening on base, then what would exposures look like?

The other reason I used that information was I wanted to produce a quantitative assessment of exposure. All I mean by that is I wanted to be able to do better than just saying low, medium, high. I wanted numerical estimates. And to do that, you need water concentration data, and to my knowledge, the ATSDR data are the only comprehensive data set available. By comprehensive, all I mean is that it covered the time period when the plaintiffs could have been on base.

And there's actually one more reason. The Department of Justice water modeling experts indicated in their reports that the ATSDR data were conservative. In other words, they were biased high, and for an exposure assessor and for an exposure assessment, that's actually fit for purpose because we often use very conservative information to produce conservative estimates of exposure because, as I said before, we want to avoid underestimating exposure.

Q. So, Dr. LaKind, are you aware of the reports of Dr. Spiliotopoulos and Dr. Hennet, United States water modeling experts in this case?

A. I am.

Q. Do you have any opinions of your own on the validity of ATSDR's modeled contaminant concentrations?

02:19:02 A. No, I don't.
02:19:04 Q. Dr. LaKind, if you understand that ATSDR's contaminant
02:19:09 concentrations may be overestimates, then why did you use them
02:19:12 in your analysis anyways?
02:19:13 A. Yeah. Again, as I mentioned, it's important to not
02:19:17 underestimate exposure because we don't want to underestimate
02:19:19 risk. By using conservative information biased high, we're
02:19:24 actually being protective of public health.
02:19:27 Q. So Dr. LaKind, you previously mentioned exposure assessors
02:19:31 use models. Can we be sure that the models are a perfect
02:19:37 representation of the real world?
02:19:39 A. No. I think we can be sure that models are not perfect
02:19:42 representations of the real world.
02:19:44 Q. Why is that?
02:19:45 A. Because the world is full of variability and uncertainty.
02:19:49 Q. How did you address the variability and uncertainty in
02:19:52 this case?
02:19:54 A. Yeah, so actually, there are a lot of ways of addressing
02:19:56 uncertainty and variability. You can do it on an individual
02:19:59 level. I chose to do it by visualizing a population at Camp
02:20:03 Lejeune with people who are very much like Mr. Fancher. They
02:20:07 were on base at the same time. They lived in the same places.
02:20:10 They worked in the same places. But I didn't know how much
02:20:13 water they drank.
02:20:13 And this is an example with drinking water. So what I

would assume is that part of the population drank an average amount of drinking water. We call that the central tendency. It's a little over a liter a day. And then I assumed part of the population drank a lot more water, more like 3 liters per day. We call that reasonable maximum. And then we had information from ATSDR indicating that Marines in training, their high end water intake is 6 liters per day. And so I assumed part of the population drank that much. I estimated exposure for all these groups so I got a range of estimates of exposure.

THE COURT: Is the population overwhelmingly male?

THE WITNESS: At Camp Lejeune?

THE COURT: Right.

THE WITNESS: I don't know the -- I don't know the relative population. I know that most of the plaintiffs I evaluated were mostly male.

THE COURT: Are there any people with claims here who are female?

THE WITNESS: Yes.

THE COURT: There are?

THE WITNESS: Yes.

THE COURT: Okay. But your survey didn't establish the gender differential on Camp Lejeune?

THE WITNESS: No, and let me -- let me clarify something. I'm talking about a hypothetical population here.

02:21:27 It's a -- it's a -- think of it as a thought experiment. It's
02:21:29 a way of getting a range of exposures so that I can be sure
02:21:33 that I'm not missing Mr. Fancher's actual exposure and I'm not
02:21:37 underestimating his exposure.
02:21:38 THE COURT: Okay.
02:21:39 THE WITNESS: Does that make sense?
02:21:40 THE COURT: No, but that's fine.
02:21:41 THE WITNESS: I can try again.
02:21:42 THE COURT: No, that's good.
02:21:42 THE WITNESS: Okay. Okay.
02:21:46 Q. (By Mr. Antonucci) Dr. LaKind, can you state with
02:21:49 certainty the exact amount of exposure experienced by
02:21:51 Mr. Fancher at Camp Lejeune?
02:21:53 A. No, I can't, and I don't think that anyone can.
02:21:56 Q. Do you think that the high end of the exposure range you
02:22:00 provided in your report is the actual amount Mr. Fancher was
02:22:04 exposed to?
02:22:05 A. No, it's not meant to be the actual amount. It's meant to
02:22:07 be a very conservative estimate, again, so that I can avoid
02:22:11 underestimating his exposure.
02:22:13 Q. So why is it that when you conduct an exposure assessment,
02:22:16 you seek to avoid underestimating exposure?
02:22:19 A. As I mentioned, it's protective of public health. We want
02:22:22 to make sure that we're not going to underestimate his health
02:22:25 risks or anyone's health risk.

02:22:27 Q. Was your goal to determine what exactly Mr. Fancher took
02:22:31 in at Camp Lejeune?
02:22:33 A. No. As I mentioned before, I don't think that anyone can
02:22:35 do that.
02:22:37 Q. So when you provide your exposure assessment results for
02:22:40 Mr. Fancher and other plaintiffs, are you, in fact, presenting
02:22:44 exposure assessment results for a population similarly situated
02:22:48 to Mr. Fancher?
02:22:50 A. Yes.
02:22:50 Q. So let's take a step back, and I'd appreciate it if you
02:22:53 could please give us a big picture look at the steps you took
02:22:56 to actually estimate Mr. Fancher's exposure.
02:23:00 A. Yeah, so that's on the next slide, and there's -- there's
02:23:02 a bunch of text on the next slide, but I'm going to walk you
02:23:04 through it very quickly.
02:23:05 I already mentioned that I had information specific to
02:23:08 Mr. Fancher from his records, and I had information on
02:23:13 concentrations of chemicals in the water from the ATSDR models,
02:23:16 and I used all of that information with three models to
02:23:19 estimate exposure.
02:23:20 ATSDR has a model called the shower model that lets you
02:23:24 estimate inhalation and dermal exposure. ATSDR also has a
02:23:28 model that allows for estimation of ingestion exposure, and
02:23:31 then I used an EPA model to estimate exposures in a swimming
02:23:35 pool.

02:23:36 Q. Are all of the models and methods you described well
02:23:39 accepted in the field of exposure science?
02:23:41 A. Very much so, and the underlying equations for these
02:23:44 models have been around for decades.
02:23:47 Q. So next, Dr. LaKind, I'd like to skip to the discussion of
02:23:52 Mr. Fancher's exposures, and we've heard a lot about
02:23:55 Mr. Fancher's exposure information. Is there anything in
02:23:58 particular that you think is important to share with the Court?
02:24:01 A. Yes. If you can go to the next slide, I just want to show
02:24:03 the information that I was able to find on Mr. Fancher from his
02:24:08 deposition and his records, and I won't -- I won't walk you
02:24:11 through all of this, but it gives you a sense of the volume of
02:24:14 information.
02:24:14 He was on base between October '79 and June '81, and was
02:24:19 gone in the middle period for deployment. He recalled living
02:24:23 in the barracks. He showered once or twice a day. And one
02:24:27 thing I would like to do is read a quote from his deposition
02:24:30 because it's about his activities, and activities are really
02:24:34 important because they help guide us in terms of understanding
02:24:36 how much water a person will drink.
02:24:38 So Mr. Fancher did note that he participated in training.
02:24:42 And he also noted that when he wasn't in training, and here's
02:24:45 the quote, he said, "So, you know, if they told me to go to the
02:24:48 motor pool and, you know, wash my Jeep, then that's what I did.
02:24:51 If they told me to stand guard and guard the tanks, that's what

I did. If they told me to sit on my bunk and clean my weapon, that's what I did."

Mr. Fancher recalled drinking water all the time, but he couldn't recall, you know, how much. And he also recalled participating in training events at a swimming pool.

Q. Dr. LaKind, did you make any conservative assumptions specific to Mr. Fancher's exposure?

A. I did, two in particular I'll mention. One is on the next slide. So I just talked about Mr. Fancher's activities helps us figure out how much water he might have consumed. He recalled additionally standing guard, washing vehicles. These were during nontraining days. And as I mentioned, he recalled drinking water all the time. So I included the high end Marine-in-training intake of 6 liters per day as one of my estimates of his exposure, and that's likely to be very conservative for Mr. Fancher. The second -- oh, I'm sorry.

Q. Did you make any other conservative assumptions related to Mr. Fancher's exposure?

A. I did, and that's on the next slide. And as I mentioned, Mr. Fancher recalled participating in training at a swimming pool, but I didn't have any information on where the pool was located or the kind of pool it was, and there were a lot of pools -- I think we're missing one. That's okay. I can talk you through it.

There are a lot of pools at Camp Lejeune, but I assumed

that the pool that he used was either at Hadnot Point or Tarawa Terrace, so that's very conservative. And some of the pools at Camp Lejeune are outdoor and some are indoor. Indoor pools, the exposure is going to be much higher, and I assumed he used an indoor swimming pool.

Q. So, Dr. LaKind, I'd like to next ask you about the results of your exposure assessment. What were your results for Mr. Fancher?

A. Right. So this slide, I'm not going to read this. This is just to give you an example of the kinds of data that I produced. This slide shows results for trichloroethylene, and really I just want to point out two quick things.

For dermal inhalation and ingestion exposure, I computed his exposures in units of microgram per kilogram day. That's what we talked about before. But for inhalation exposure, I also provided results in units of micro -- of microgram per cubic meter air, and I did that because that's the standard unit that we use for an EPA type risk assessment.

Q. Did you describe in detail your entire evaluation for Mr. Fancher in your report?

A. I did.

Q. And does your report contain all of your results for Mr. Fancher's exposure assessment?

A. Yes, it does.

MR. ANTONUCCI: Permission to approach, Your Honor.

02:27:24 THE COURT: All right.
02:27:45 Q. Dr. LaKind, I just handed you what's been marked for
02:27:49 identification as United States Exhibit 356. Do you recognize
02:27:53 what's been marked for identification as Exhibit 356?
02:27:56 A. I do.
02:27:57 Q. What is it?
02:27:58 A. It's my report for Mr. Fancher and appendices and my
02:28:03 resume.
02:28:03 Q. Did you write this report?
02:28:04 A. I did.
02:28:06 Q. And is this a true and accurate copy of your report?
02:28:08 A. I believe so.
02:28:09 MR. ANTONUCCI: Your Honor, the United States moves
02:28:10 to admit United States Exhibit 356 into evidence.
02:28:14 THE COURT: It'll be received.
02:28:14 (Defendant's Exhibit Number 356 received.)
02:28:16 Q. Dr. LaKind, what did you do with the results of your
02:28:19 analysis?
02:28:20 A. Yeah, I provided the results of my analysis to Dr. Bailey,
02:28:23 who could then use them in her assessment of health risks and
02:28:26 comparison to epidemiological studies.
02:28:29 Q. So what are your takeaways from Mr. Fancher's exposures?
02:28:33 A. Yeah, those are on the next slide. And, again, this is
02:28:36 going to be very high level, very big picture. So my main
02:28:40 conclusions, or my main observations about his exposures are

02:28:44 that they would vary widely, and it really depended on the
02:28:48 water source that he was exposed to, the activities that he
02:28:51 participated in, and then the specific chemical of interest.
02:28:54 And, I'm sorry, that's the wrong side, but we can keep going.
02:28:58 Q. So, Dr. LaKind, you just mentioned that exposures varied
02:29:02 by chemical. What did you mean by that?
02:29:05 A. Yes, I have one example for this on the next -- hopefully,
02:29:07 the next slide. One more.
02:29:13 Yeah, so let me just get you oriented to this slide. This
02:29:19 is a graphic showing Mr. Fancher's exposures to chemicals from
02:29:23 consuming water and the Marine-in-training high end, that 6
02:29:27 liter per day number. And on that vertical Y axis, you can see
02:29:31 doses in terms of units, microgram per kilogram day. And each
02:29:36 chemical is represented by a different colored bar, and so I
02:29:39 think it's really easy to see that depending upon the chemical,
02:29:42 his exposure would be different.
02:29:46 Q. So I'd like to talk to you now about the plaintiff's
02:29:49 exposure assessment expert, Dr. Kelly Reynolds. Have you read
02:29:52 Dr. Reynolds's reports in this case?
02:29:54 A. I did.
02:29:55 Q. And have you read Dr. Reynolds's deposition transcripts?
02:29:59 A. Yes.
02:29:59 Q. Were you present in the courtroom for Dr. Reynolds's
02:30:01 testimony in this case?
02:30:03 A. I was.

02:30:04 Q. Are you aware that Dr. Reynolds calculated exposure in two
02:30:08 different ways?
02:30:09 A. Yes, I am.
02:30:11 Q. And what were those ways?
02:30:13 A. Right. So she calculated exposure in total mass, just
02:30:17 micrograms, and then she also calculated exposure using units
02:30:21 that are referred to as microgram per liter times month.
02:30:26 Q. So let's start by talking about microgram per liter
02:30:29 months, and then we'll return to total micrograms in a little
02:30:32 bit. Did you hear me ask Dr. Reynolds questions about her
02:30:37 computation of Mr. Fancher's exposure in microgram per liter
02:30:40 months?
02:30:41 A. I did.
02:30:42 Q. Did you hear Dr. Reynolds's explanation of how she
02:30:45 performed that computation?
02:30:46 A. Yes, I did.
02:30:48 Q. What did you think of Dr. Reynolds's explanation?
02:30:50 A. Yeah, I think it was incorrect.
02:30:52 Q. Why is that?
02:30:54 A. Well, in calculating microgram per liter month, we're
02:30:57 taking into account the concentration times the amount of time,
02:31:01 and so if you were there -- and let me -- let me be specific in
02:31:05 Mr. Fancher's case. If Mr. Fancher was on base for an entire
02:31:09 month, and let me just make up a number and let's say the
02:31:12 chemical concentration was 2 microgram per liter, then his

overall exposure would be 2 microgram per liter times one month, or 2 microgram per liter month.

But in many cases, Mr. Fancher was only on base for part of the month, and he was elsewhere for the other part of the month. And so let's just say he was away for half the month. In this case, you would compute that exposure by saying 2 microgram per liter times a half a month. So his overall exposure should be 1 microgram per liter month, not 2 microgram per liter month.

Q. So Dr. LaKind, I'm going to ask that my colleagues show the United States Exhibit 4000, and I'd appreciate it if you could please explain what is the appropriate way, using this illustrative aid, to calculate exposure in microgram per liter months.

THE WITNESS: So do you mind if I -- if I go up and point?

THE COURT: Sure.

A. So to compute microgram per liter month -- and I'll just use one example. I'll use this top line. So in this case, if Mr. Fancher was on days for 16 days and the concentration of trichloroethylene was 71 microgram per liter for the -- for the entire month, then the concentration using units of microgram per liter month would be 16 times 71. I'm sorry, I missed -- I'm sorry, I missed one part of it. Sixteen divided by the number of days in the month.

02:32:55 THE WITNESS: My apologies, Your Honor.
02:32:56 A. So it would be roughly 16 over 30, or about half the
02:33:00 month, times the concentration, or 71.
02:33:04 THE COURT: Okay.
02:33:04 Q. Thank you, Dr. LaKind.
02:33:05 A. Okay.
02:33:05 Q. You can return to the witness stand. Dr. LaKind, in
02:33:25 response to Dr. Reynolds's testimony today, did you evaluate
02:33:29 what Mr. Fancher's exposure would be using the total days
02:33:34 adjusted for his residential exposure?
02:33:36 A. I did.
02:33:37 Q. And approximately what is that?
02:33:40 A. For trichloroethylene, if you take into account the number
02:33:42 of days, roughly, that Mr. Fancher was not on base, then his
02:33:46 total exposure in microgram per liter month would be at about
02:33:50 half of what Dr. Reynolds calculated.
02:33:53 Q. And what was the impact of Dr. Reynolds not accounting for
02:33:58 partial months?
02:33:59 A. Well, if she assumed he was on base when he wasn't, then
02:34:02 her overall estimate would be an overexposure. I mean, excuse
02:34:06 me, an overestimate of his exposure.
02:34:08 Q. So we've been talking a lot about units, and so I want to
02:34:13 ask, why are units so important for us to discuss?
02:34:16 A. Yeah, so when we talk about units, it feels like something
02:34:18 that's very arcane and why are we talking about it. But, in

02:34:21 fact, the units that we use, actually, each set of units
02:34:25 describe something very different in terms of exposure, and
02:34:28 these are not interchangeable. Each one represents a very
02:34:31 different way of expressing exposure.
02:34:34 Q. So what does ATSDR's average monthly concentration of
02:34:39 contaminants in drinking water in micrograms per liter mean?
02:34:42 A. Yeah, so it's a typical daily concentration over the
02:34:46 course of a month.
02:34:49 Q. And what does microgram per liter month mean?
02:34:52 A. Right. So when we move from concentration, which was the
02:34:55 previous question, microgram per liter, to microgram per liter
02:34:59 month, what we're suddenly now including is time. We're
02:35:02 including the duration of exposure.
02:35:05 Q. Does the unit of microgram per liter month represent
02:35:09 exposure over an entire month?
02:35:13 A. Yes.
02:35:13 Q. Dr. LaKind, you previously testified that you assumed a
02:35:17 person who was on base for an entire month where their records
02:35:20 showed they were on base at least two days out of that month,
02:35:22 right?
02:35:23 A. Yes.
02:35:24 Q. How is that different from what Dr. Reynolds did in her
02:35:28 calculation of micrograms per liter months where she used the
02:35:30 whole month?
02:35:32 A. Right. So Dr. Reynolds indicated that she was working to

produce an actual assessment of how much of a chemical Mr. Fancher consumed via drinking water. And so, in that case, by assuming he was on base for the whole month when he wasn't, that would be an overestimate of his exposure.

In my case, I was computing exposure using units of microgram per kilogram day and then looking to assess a conservative long-term average exposure. And so providing a conservative estimate of exposure in my case is appropriate because, as I mentioned before a few times, I tried to make sure that I don't underestimate exposure.

Q. So did you hear Dr. Reynolds refer to the value of 5,340 as the concentration of contaminants in the water when Mr. Fancher was on base?

A. I did.

Q. What did you think of that?

A. I think it was incorrect. That number, I think, represents microgram per liter month, but, again, not taking into account the time that Mr. Fancher was off base.

Q. So if you wanted to calculate the average concentration of contaminants in the water when Mr. Fancher was on base, how would you do that?

A. Right. So that's actually the approach that I used in my reports where we take the concentration in each month, we add them up, and then we divide by the total number of months. It's an average.

02:36:54 Q. Okay.

02:36:54 MR. ANTONUCCI: I would appreciate it if you could
02:36:56 please return to United States Exhibit 4000.
02:36:59 Q. So, Dr. LaKind, let's go back to talking about your
02:37:04 exposure assessments, and in terms of your exposure assessment
02:37:08 and Dr. Reynolds's exposure assessment in units of total mass,
02:37:11 what did you and Dr. Reynolds both do?
02:37:15 A. Right. So if you can go to the next slide, just I'll
02:37:17 point out just a couple of things that our exposure assessments
02:37:20 have in common.
02:37:21 We both relied on the ATSDR modeled water concentration
02:37:25 data, and we both relied on plaintiff documents to determine
02:37:30 when the plaintiff would, in this case, Mr. Fancher, would have
02:37:33 been on base, with one main difference, that Dr. Reynolds used
02:37:36 units of daily exposure, and I used units of monthly exposure.
02:37:42 Q. Dr. Reynolds -- Dr. LaKind, are your results similar to
02:37:46 Dr. Reynolds's results?
02:37:48 A. So here's where it gets a little bit complicated, and let
02:37:50 me just say no and yes, and let me explain it on the next
02:37:53 slide. If you could show the next slide.
02:37:55 And let me just get you oriented to this table. The
02:38:02 left-hand column shows the four chemicals of concern in the
02:38:05 drinking water at Camp Lejeune. The next column over shows
02:38:08 Dr. Reynolds's results for trichloroethylene in units of total
02:38:13 mass, or microgram. That was one of her ways of expressing

02:38:16 exposure. And in the right-hand column are my results for TCE
02:38:19 for Mr. Fancher in units of microgram per kilogram day, which
02:38:23 we talked about a few times already.
02:38:24 So if you compare her numbers to mine, they look really
02:38:28 different. So just looking at TCE, her results were in the
02:38:33 hundreds of thousands, and my result was 27. But the reason
02:38:36 these numbers are so different has to do with the way they're
02:38:40 expressed and which units we chose.
02:38:41 And I can explain that by adjusting Dr. Fancher's --
02:38:46 excuse me -- I'm so sorry -- Dr. Reynolds's values to get her
02:38:50 units from microgram to units of microgram per kilogram day.
02:38:54 It's a very simple calculation. We take her microgram numbers,
02:38:57 in this case, 577,000 and a bit more; we divide by the number
02:39:02 of days that Dr. Reynolds assumed Mr. Fancher was on base, 337
02:39:07 days; and then we divide by the weight of an adult, 80
02:39:10 kilograms.
02:39:10 So now if we go to the next slide, we can compare
02:39:13 Dr. Reynolds's results and mine using the same units. Just to
02:39:19 get you oriented once again, the Y axis is now dose, all in
02:39:23 units of microgram per kilogram day. The different colored
02:39:27 bars, each color represents a different chemical.
02:39:29 Dr. Reynolds's results are on the left. Mine are on the right
02:39:32 for each color. And now you can see that our results aren't
02:39:36 the same. You wouldn't expect them to be the same because we
02:39:38 use different assumptions, but they're fairly close.

02:39:43 Q. So Dr. LaKind, with regard to this slide, which shows
02:39:47 comparison of maximum drinking water doses in same units, are
02:39:52 these your exposure results for the ingestion of drinking
02:39:57 water?
02:39:58 A. Right. I could only compare my results to Dr. Reynolds's
02:40:00 via ingestion because Dr. Reynolds didn't assess inhalation or
02:40:04 dermal exposure.
02:40:09 Q. Did you do anything differently from Dr. Reynolds?
02:40:12 A. Yes, I have some examples on the next couple of slides.
02:40:19 So as I already mentioned, we both examined Mr. Fancher's
02:40:23 exposure via water consumption, but I also looked at inhalation
02:40:27 in what I'm calling communal facilities. Just picture
02:40:30 barracks, bathrooms, lots of showers, lots of sinks and
02:40:33 toilets. So I looked at inhalation exposure in those
02:40:36 facilities and also dermal exposure, and I also examined
02:40:40 concentrations of these chemicals in the air at indoor swimming
02:40:42 pools. Dr. Reynolds only looked at water consumption.
02:40:48 Q. What is the significance of that?
02:40:51 A. Well, we know that these chemicals are not only in the
02:40:53 water, but they're getting into the air. And so by looking at
02:40:56 exposures via contact with the water and the air and by looking
02:40:59 at all of these routes, I think that my exposure assessment was
02:41:03 more realistic, more complete and more conservative than it
02:41:08 would have been if I'd only looked at drinking water and
02:41:10 intake.

02:41:12 Q. Did you do anything else different from Dr. Reynolds?
02:41:15 A. Yeah, I have one more example. That's on the next slide.
02:41:19 And this, once again, has to do with units. So as I already
02:41:23 mentioned a few times, Dr. Reynolds presented her results in
02:41:27 units of mass or microgram, whereas I presented mine in units
02:41:31 of dose, microgram per kilogram day.
02:41:33 And the important point here is that by looking at units
02:41:37 of microgram per kilogram day, I'm taking into account time
02:41:41 period and body weight, and let me just very quickly explain
02:41:44 why this is so important.
02:41:45 So for time period, let me bring back that example that I
02:41:48 used before with alcohol. So picture a table with 50 martini
02:41:53 glasses on it, each one filled with a martini. You could go
02:41:56 ahead and measure the amount of alcohol in each one, and
02:42:00 present that in units of just micrograms. There's nothing
02:42:02 wrong with doing that. But it doesn't tell you what you need
02:42:05 to know in terms of health effect.
02:42:07 So now picture a different scenario. Same 50 martini
02:42:10 glasses, same 50 martinis. We have one person who drinks all
02:42:13 50 martinis, but one per year. We have a second person who
02:42:18 drinks all 50 martinis in one day. So, obviously, I think
02:42:22 we're going to see a different health outcome between these two
02:42:25 people. And so understanding and taking into account that time
02:42:29 factor is really important.
02:42:30 And for body weight, I should have a quick example on the

02:42:34 next slide about why body weight is so important, and this is a
02:42:38 graphic. It looks a little busy but I'll explain it. This is
02:42:42 a graphic that shows impairment from alcohol. And if you would
02:42:46 just focus on the two white ovals. So the left-hand oval shows
02:42:51 a person who's light, who weighs somewhere between 100 and
02:42:56 140 pounds, and they drink two drinks over an hour. And what
02:42:59 that red shading indicates is that person would be considered
02:43:02 legally intoxicated.
02:43:03 Now picture a second person who's much heavier. They
02:43:06 weigh somewhere between -- I think that says 140 to 180 pounds.
02:43:11 They drink the same two drinks, same amount of time, but they
02:43:14 would only be considered impaired. So body weight matters when
02:43:18 we're thinking about evaluating outcome.
02:43:22 Q. Prior to reading Dr. Reynolds's report, had you ever in
02:43:25 your career seen total micrograms mass used as the units in an
02:43:30 exposure assessment?
02:43:31 A. I haven't.
02:43:33 Q. Why do Dr. Reynolds's numbers appear to be so much larger
02:43:37 than yours?
02:43:38 A. Yes, so just one more slide that has an example with an
02:43:41 everyday item that I think we -- we've all experienced. So
02:43:45 imagine that you're holding a peanut in your hand. So a peanut
02:43:50 weighs about a gram. That's 1,000 milligrams. And so now
02:43:54 picture a scenario where you have a person who weighs about 80
02:43:58 kilograms and they're going to eat one peanut per day for a

thousand days.

The way that I would express dose is by saying the person's going to eat a thousand milligrams of peanuts per day. I adjust for body weight, and so their exposure is twelve and a half milligram per kilogram day.

What I believe Dr. Reynolds would do is to say the person is eating a thousand milligrams of peanuts per day over a thousand days, and so they've eaten a million milligrams of peanuts. It's the same person eating the same single peanut once a day for a thousand days, but because the units are expressed differently, the numbers look very different.

Q. Dr. LaKind, what are your conclusions from your analysis?

A. Yeah, those are shown on the last slide. So I used standard, well-accepted exposure models. I used conservative assumptions that are unlikely to underestimate Mr. Fancher's exposure. I evaluated all major routes of exposure for Mr. Fancher, and I used standard units to express exposure estimates for Mr. Fancher. And I believe that my exposure assessment is unlikely to underestimate Mr. Fancher's exposure.

Q. Do you hold all of the opinions you've expressed today to a reasonable degree of scientific certainty?

A. I do.

MR. ANTONUCCI: Your Honor, the United States moves the illustrative exhibit identified as Exhibit 4003, into evidence for illustrative purposes.

02:45:24 THE COURT: It'll be received.
02:45:25 (Defendant's Exhibit Number 4003 received.)
02:45:27 Q. Thank you, Dr. LaKind.
02:45:27 MR. ANTONUCCI: I have no further questions.
02:45:29 MR. QUINN: Cross, Your Honor?
02:45:30 THE COURT: Yes.
02:45:32 CROSS-EXAMINATION BY MR. QUINN:
02:45:32 Q. Good afternoon, Dr. LaKind. You and I spoke together during the Frank Mousser trial, did we not?
02:45:38
02:45:40 A. We did.
02:45:41 Q. Okay. And during that Frank Mousser trial, I showed you this stack of invoices that you have billed the United States
02:45:45
02:45:48 Government and the taxpayers for your work in this case. Do you recall that?
02:45:51
02:45:52 A. I do.
02:45:52 Q. Okay. And I think you agreed during the *Mousser* trial that you have billed the taxpayers of this country over $1.1
02:45:56
02:46:00 million for your work in this case; is that right?
02:46:03 A. No, not in this case. Actually, that amount -- and I'm assuming that you added correctly. I didn't check your math.
02:46:06
02:46:09 But that amount covered about three and a half years of work doing exposure assessments for 25 plaintiffs and working for a
02:46:13
02:46:19 couple of -- over 2,000 hours. I don't remember the exact number. So that's actually what that represents.
02:46:22
02:46:23 Q. Yeah, so it's over $1.1 million for your work on the Camp

Lejeune litigation, right?
A. That would be correct.
Q. Okay. How much do you charge an hour, ma'am?
A. At the time when I wrote my reports, I was billing 500 -- I think was 575 an hour.
Q. Okay. And you bill more than that now, though, don't you?
A. I'm currently billing $625 an hour, yes.
Q. Okay. Now, at the time of your deposition in this case, the first deposition you'd ever taken, right, or that you had ever -- the first time you'd ever testified in a deposition, right?
A. That's correct.
Q. All right. Now you promote your services as an expert witness, though, don't you?
A. No.
Q. Are you familiar with the Expert Institute?
A. Yes, I am.
Q. Okay.
MR. QUINN: Your Honor, may I approach?
THE COURT: Yeah.
A. And, I'm sorry, I should clarify that. When you say I'm familiar with them, they've been in contact with me on more than one occasion, but I don't know that much about them.
Q. Okay.
A. So familiar is --

02:47:17 Q. Ma'am, I've just handed you a document that I've premarked
02:47:19 as Exhibit 193. Do you see the name, Dr. Judy LaKind, Ph.D.,
02:47:25 on this?
02:47:25 A. I do.
02:47:30 Q. Okay. You see how this is a printout of the Expert
02:47:33 Institute website?
02:47:37 A. I didn't know they did this. Okay.
02:47:38 Q. Well, is it fair to say that this is promoting, touting
02:47:40 your services as an expert witness?
02:47:42 A. I think that they are. I'm not. I was unaware that they
02:47:45 did this.
02:47:46 Q. Okay. Well, let's take a look at your website, ma'am.
02:47:48 MR. QUINN: Your Honor, may I approach?
02:47:54 THE COURT: Yeah.
02:48:02 Q. I've handed you -- I've handed you a document that I have
02:48:03 premarked as Exhibit 192. Does this appear to be copy of your
02:48:08 website?
02:48:09 A. It does.
02:48:11 Q. And on this website, you explain to folks what it is that
02:48:15 you can do if they contact your business, right?
02:48:19 A. Well, it explains to interested parties what I do and what
02:48:24 I've done.
02:48:24 Q. And one of the things that you tout yourself as doing on
02:48:26 this website is expert witness, true?
02:48:29 A. I think I would take exception to your word, "touting." I

02:48:32 think I'm merely listing my credentials.
02:48:35 Q. Okay. And one of the things that you say -- I mean, the
02:48:38 purpose of this website is to let people know what LaKind --
02:48:40 LaKind Associates, LLC does, right?
02:48:45 A. Yeah, it sort of functions as a summary of my resume,
02:48:47 uh-huh.
02:48:47 Q. Okay. And one of the things that LaKind Associates does
02:48:50 now is -- is they do expert witness work, right?
02:48:54 A. For Camp Lejeune, yes.
02:48:55 Q. Okay. Now, ma'am, you've made kind of a big deal about
02:49:02 Dr. Reynolds, the plaintiff's exposure expert, you've made kind
02:49:07 of a big deal about Dr. Reynolds not putting Mr. Fancher's body
02:49:11 weight in her units of measurement, right?
02:49:16 A. A big deal. I --
02:49:18 Q. Let me --
02:49:18 A. I certainly noted it, yes.
02:49:22 Q. Well, you've done more than noted it. I mean, you've
02:49:23 talked about it a lot. For instance, on page 24 of your slide
02:49:38 deck here, accounts for body weight, Dr. Reynolds, you
02:49:42 criticize her for not doing that, right?
02:49:44 A. I believe that it's a better -- that microgram per
02:49:49 kilogram per day is more reflective of an appropriate exposure
02:49:53 method for assessing health outcomes, yeah.
02:49:56 Q. Okay. And you -- and you talked about this concept, body
02:50:00 weight, multiple times during your examination. I'm going to

02:50:06 direct your attention to page 5 of your slide deck. You again
02:50:12 talk about body weight as a way to calculate dose, right?
02:50:17 A. That's a standard description of units for dose, yes.
02:50:20 Q. Okay. Now, ma'am, are you familiar with the EPA *Exposure*
02:50:27 *Factors Handbook*?
02:50:28 A. Yes.
02:50:31 Q. And there it is right there on your slide deck. That's a
02:50:34 picture of the *Exposure Factors Handbook* isn't it?
02:50:36 A. Yes, it is.
02:50:37 Q. Okay. And that's a document that you relied on, right?
02:50:40 A. Uh-huh. Yes.
02:50:40 Q. And you would -- and you would not rely on a document if
02:50:45 it was -- if it was not commonly relied upon by professionals
02:50:49 in your field, right? You would want it to be reliable if
02:50:54 you're going to use it, in other words?
02:50:55 A. Right. I'm just thinking about your question for a
02:50:57 second. So I rely on documents. I can rely on a document if
02:51:01 it's not commonly used if I think that it's scientifically
02:51:05 valid.
02:51:06 Q. Okay.
02:51:06 A. So I'm kind of hung up on your word "commonly."
02:51:08 Q. So when you relied upon the EPA *Exposure Factors Handbook*,
02:51:12 you believed when you relied upon it that it was -- it was --
02:51:16 it was a reliable document for you to base part of your
02:51:19 opinions on, right?

02:51:21 A. The information that I used from the *Exposure Factors Handbook*, I believe is reliable, yes.
02:51:27 Q. Okay. Very good. When you were using the *Exposure Factors Handbook*, you never thought to yourself, huh, well, this is questionable; when you used it, you thought it was a good document for somebody like yourself in your field of expertise to rely on, true?
02:51:41 A. Again, the portions that I've read --
02:51:43 Q. Okay.
02:51:43 A. -- I would say yes.
02:51:45 Q. Well, let's look at Chapter 2 of the *Exposure Factors Handbook*. I didn't print the whole thing because it's a lot.
02:51:54 A. Uh-huh.
02:51:54 Q. But if you can take a look at this equation right there. First of all, I want to note this is under "Exposure and Dose Equations." In other words, how to calculate dose. You see that?
02:52:11 A. I do.
02:52:13 Q. Okay. Now, that equation that we're looking at right there in the EPA *Exposure Factors Handbook* allows people like you, like Kelly Reynolds, to calculate exposure without the use of body weight, does it not, ma'am?
02:52:30 A. So I -- you're giving me a document that I haven't read the preface to this in many years.
02:52:35 Q. I understand, but it's a document you relied upon. I'm

02:52:35 just simply asking --
02:52:35 A. No, I understand, but you put in front of me, so you have
02:52:39 to give me a second to look at it.
02:52:47 (Witness reviews document.)
02:52:47 A. Yes, this -- that's what this is doing.
02:52:59 Q. Okay. All right. So, now, in addition to that, in your
02:53:04 report, you calculated air concentration, didn't you?
02:53:09 A. Yes, I did. Well --
02:53:09 Q. Okay. Now --
02:53:11 A. Let me finish my answer, if you don't mind.
02:53:13 Q. Sure.
02:53:13 A. The ATSDR model computed the air concentrations for the
02:53:18 barracks facilities.
02:53:19 Q. Yeah.
02:53:19 A. I computed the air concentrations for the swimming pools.
02:53:23 Q. So your calculation for air concentration, you used, did
02:53:27 you not, microgram per meter cubed, right?
02:53:32 A. Yes. As I explained, those are the units that are used in
02:53:35 a standard EPA risk assessment for inhalation risk.
02:53:39 Q. Yeah, well, you know, my point, though, ma'am, is that in
02:53:43 your formula for air concentration, that doesn't include body
02:53:46 weight either, does it?
02:53:48 A. So you have to be careful here. And I'm going to answer
02:53:50 part of your question, but for the other part, you'll have to
02:53:52 ask a toxicologist. EPA has changed its methodology so that

02:53:57 when you do inhalation risk assessment, the toxic potency value
02:54:02 that you're comparing your exposure to has a physiological
02:54:06 component. And so at some point around 20 years ago, EPA
02:54:09 changed the way that it did its exposure and risk assessments
02:54:12 for air, but it still incorporates parts of physiology. And if
02:54:16 you want to have a better explanation, I'm not a toxicologist.
02:54:19 You'd have to ask one.
02:54:19 Q. Well, ma'am, I just want to make sure I understand the
02:54:21 situation. The *Exposure Factors Handbook* says you can -- you
02:54:25 can use the consumption equation -- an exposure equation
02:54:28 without body weight. For air -- for air concentrations, you
02:54:31 used an equation that didn't include body weight, but yet
02:54:35 you've taken a stand, put your hand on the Bible, and you have
02:54:39 criticized my -- the expert for the plaintiff, Kelly Reynolds,
02:54:42 for not using body weight, though; is that the situation?
02:54:44 A. I think you're comparing apples to oranges here. So first
02:54:47 of all, again, I'll state that for inhalation -- well, first of
02:54:52 all, for inhalation, I will say that I did compute it using
02:54:55 body weight. I computed dose for inhalation exposure using
02:55:00 units of microgram per kilogram day, so I did include
02:55:04 kilograms. But I also used units of microgram per cubic meter
02:55:08 because that's required for an EPA type risk assessment because
02:55:13 of the way that they design their toxic potency factor that
02:55:16 includes physiological components. So I actually included
02:55:19 both.

02:55:19 Q. Okay. So I'm going to ask you a question, and I'm going
02:55:27 to let you know it comes out of your deposition, so I'm curious
02:55:30 about what your answer will be. Would you agree with me that
02:55:35 total mass is a valid measure of exposure?
02:55:40 A. Right, so as I mentioned before, when I was describing the
02:55:42 martini glasses, you could have 50 martinis and you could
02:55:46 measure the total amount of mass of alcohol in those glasses,
02:55:49 and there's nothing wrong with doing that. It's just missing
02:55:52 important information that we need for understanding health
02:55:55 outcomes.
02:55:55 Q. All right. So we all heard the direct testimony a moment
02:55:58 ago and my friend on the other side is saying, "Ma'am, have you
02:56:01 ever seen somebody do total mass as a unit of measurement," and
02:56:04 in point of fact, you testified in your deposition it's a valid
02:56:07 unit of measurement, right?
02:56:09 A. That's different. Those two things are different. I was
02:56:12 asked if I'd ever seen it, but in my deposition I was asked if
02:56:15 it was valid. Those aren't the same thing.
02:56:17 Q. All right. Now, ma'am, I want to ask you about this
02:56:22 criticism you've made about Dr. Reynolds using microgram per
02:56:25 liter months.
02:56:26 A. Okay.
02:56:26 Q. Now, at least at the time of your deposition, you had
02:56:32 never reviewed the epidemiology that looks at Marines at Camp
02:56:36 Lejeune, did you?

02:56:41 A. So my deposition was about a year and a half ago, and I
02:56:46 know I have seen a couple of epidemiology studies related to
02:56:49 Camp Lejeune, but I'm not an epidemiologist, and so I didn't
02:56:52 review them and I don't remember the timeline.
02:56:54 Q. Okay. You were asked during your deposition, and let me
02:56:57 know if this doesn't sound right, and I can show you the
02:56:59 transcript. In your deposition, you were asked, quote:
02:57:01 "Do you know at all what exposure metrics are used in the
02:57:07 epidemiology that looks specifically at the Marines at Camp
02:57:09 Lejeune?"
02:57:10 A. Okay.
02:57:10 Q. And your answer was, "I don't." Does that sound right?
02:57:14 A. Yes.
02:57:15 Q. And you also -- you proceeded later in your deposition to
02:57:17 testify that at least at the time of your deposition, you had
02:57:20 never read any of the epidemiology with respect to the Marines
02:57:23 at Camp Lejeune; is that right?
02:57:25 A. Did I say I hadn't read any? I think I might have said
02:57:28 that I had seen a couple, but I'd have to look again.
02:57:31 Q. Okay. Well, ma'am, as you sit here now, have you reviewed
02:57:37 any of Dr. Bove's health studies from 2014?
02:57:42 A. I don't believe I have.
02:57:43 Q. Okay. So you've criticized Dr. Reynolds for putting her
02:57:47 measurements in microgram per liter months. Now, I know you
02:57:50 just said you -- at least at the time of your deposition, you

02:57:52 hadn't read any of that epidemiology. Are you aware that
02:57:55 Dr. Bove put his measurements in terms of micrograms per liter
02:57:58 months?
02:57:59 A. So I think you may be doing exactly the thing that I
02:58:02 warned against. Units are not interchangeable. So when I was
02:58:07 commenting on Dr. Reynolds's use of microgram per liter month,
02:58:10 I did not say that that was an inappropriate measure or that it
02:58:14 was not used in epidemiology. What I said was that the
02:58:17 arithmetic, in my view, was incorrect. So I think you're --
02:58:20 you're confusing the two.
02:58:22 Q. Okay. So there's nothing wrong, then, with Dr. Reynolds
02:58:25 putting her -- one of her sets of conclusions in terms of
02:58:29 microgram per liter months; there's nothing wrong with that?
02:58:31 A. As long as the mathematics are correct then --
02:58:34 Q. And as a matter of fact, when Dr. Reynolds did that, it
02:58:37 enabled other experts to compare David Fancher's exposure to
02:58:42 the Camp Lejeune epidemiology, right?
02:58:45 A. So not necessarily. If her numbers, if her results were
02:58:49 incorrect, then they wouldn't actually represent Mr. Fancher's
02:58:52 true exposures, and so they wouldn't be comparing Mr. Fancher's
02:58:55 exposures to their results.
02:58:57 Q. Okay. Well, I think Dr. Reynolds addressed that during
02:59:00 her testimony.
02:59:01 Ma'am, let me ask you this: You relied on the Camp
02:59:04 Lejeune water model, didn't you?

02:59:06 A. The ATSDR --
02:59:07 Q. Yes, ma'am.
02:59:07 A. -- you're referring to?
02:59:07 Q. I'm sorry. The ATSDR model. You relied on that, didn't you?
02:59:10 A. I did.
02:59:10 Q. Okay. And you're not aware of any more comprehensive data set about the contamination levels at Camp Lejeune than the ATSDR water model, is there? You're not aware of any?
02:59:14 A. That's what I testified to, yes.
02:59:19 Q. And, now, when you were relying on the Camp Lejeune water model, did you ever, like, think to yourself, hey, this seems unreliable? I mean, you never thought that, did you?
02:59:22 A. So I relied on the information in the water modeling experts from the Department of Justice's opinions about the water model. I'm not a water modeler, and so I can't form my own opinion.
02:59:24 Q. You wouldn't have used the ATSDR water model if you were looking at it and you thought it was unreliable for some reason, would you?
02:59:28 A. I think you're asking me the -- I'm trying to figure out that's the same question you just asked me. I'm not a water modeler, and so I can't provide opinions on the reliability of the water model results, and I think I explained in my direct why I ended up using those data.
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03:00:10 Q. You did mention earlier in response to your direct
03:00:13 examination that all models have, quote, variability and
03:00:16 uncertainty. Do you recall that?
03:00:18 A. No, that's not what I said. I said the world is filled
03:00:20 with variability and uncertainty.
03:00:22 Q. I'm curious about -- I won't ask to do it now. I'm
03:00:24 curious about what the transcript says because I heard -- I
03:00:26 heard you say that all models have variability and uncertainty.
03:00:30 Is that not what you said?
03:00:32 A. No, I think -- I think I was asked why -- oh, okay. I
03:00:35 can't remember the exact wording of the question, but I said
03:00:37 because the world is filled with variability and uncertainty.
03:00:40 I mean, we can look at the transcript, but I think that's what
03:00:42 I said. If it isn't what I said, it's what I meant to say.
03:00:57 Q. This is the last thing I want to ask you about,
03:01:00 Dr. LaKind, and it's from your slide deck. I've heard you
03:01:22 criticize Dr. Reynolds, but this chart from your slide deck
03:01:28 reflects Dr. Reynolds's conclusions about consumption and
03:01:32 Dr. LaKind, your conclusions about consumption, right?
03:01:37 A. About dose.
03:01:37 Q. Dose. Excuse me. Yes.
03:01:40 A. So that slide compares --
03:01:41 Q. Yeah.
03:01:41 A. -- Dr. Reynolds's results had she used units of microgram
03:01:46 per kilogram day, and with the assumptions and caveats that I

mentioned when I went over this slide.
Q. So for all the criticisms you've made of Dr. Reynolds, you have David Fancher consuming more TCE than Dr. Reynolds has, right?
A. Yes. So based on that graphic, my --
Q. And -- and --
A. Can I -- can I finish?
Q. Go ahead, please. I'm sorry.
A. You're very fast. So using the assumptions and all the assumptions that went into these two calculations and recognizing that Dr. Reynolds and I used various different assumptions to compute exposure, when expressed in similar units or the same units, yes, in fact, our conclusions and our results were -- I would be with similar.
Q. Okay. And the same thing for PCE. You have Mr. Fancher consuming more PCE than Dr. Reynolds?
A. Close, but yes.
Q. Okay. Same is true for vinyl chloride right?
A. Correct.
Q. Same is true for benzene, right?
A. Correct, and this is partly why I indicated that I felt that my results were conservative.
Q. Thank you.
MR. QUINN: I have no further questions.
THE COURT: Any redirect?

03:02:56 MR. ANTONUCCI: Very briefly, Your Honor.
REDIRECT EXAMINATION BY MR. ANTONUCCI:
Q. Dr. LaKind, what was your intent in setting out to perform an exposure assessment in this case?
A. So I wanted to provide information on exposure to each of the plaintiffs, including Mr. Fancher, that I viewed as being conservative and health protective and including as many routes of exposure and sources of exposure as I was able to do.
Q. Thank you, Dr. LaKind.
MR. ANTONUCCI: No further questions.
THE COURT: Thank you.
THE WITNESS: Thank you.
(The witness exits the witness stand at 3:03 p.m.)
THE COURT: Next witness.
MR. BAIN: Your Honor, the United States calls Dr. Lisa Bailey.
THE COURT: Okay.
THE CLERK: Place your left hand on the Bible, raise your right hand, and state and spell your name for the record.
THE WITNESS: Lisa Bailey, L-I-S-A B-A-I-L-E-Y.
LISA A. BAILEY, PH.D.,
was sworn at 3:04 p.m., and testified as follows:
MR. MANDELL: Your Honor, I just wanted to raise to the Court's attention, this is the same thing that was raised at the last trial. This particular witness has had -- the

03:04:52 Court of all four judges had certain opinions excluded, and
03:04:56 including parts of her report, and so we just wanted to raise
03:05:01 to Your Honor this is the issue about the general causation
03:05:04 versus specific causation, if you remember.
03:05:07 THE COURT: Yeah. Thank you. I'll reserve a ruling
03:05:08 as I did in the last case.
03:05:10 MR. MANDELL: Great. Thank you.
03:05:19 DIRECT EXAMINATION BY MR. TUBIN:
03:05:19 Q. Dr. Bailey, would you please introduce yourself to the
03:05:21 Court?
03:05:23 A. I'm Lisa Bailey. I'm a human health risk assessor and
03:05:26 toxicologist.
03:05:27 Q. And tell us what you do for a living.
03:05:31 A. So I evaluate risk to human health from exposures in the
03:05:35 environment, air, water and soil.
03:05:37 Q. And you've developed expertise in those two areas during
03:05:40 this work?
03:05:41 A. Yes.
03:05:43 Q. And how did you become involved in this case?
03:05:46 A. I was asked by the DOJ to evaluate exposure and risk to
03:05:51 the plaintiffs in this case.
03:05:53 Q. I want to remind the Court a little bit about your
03:05:56 background. Where did you go to college?
03:06:00 A. So I went to Skidmore College, and I have a degree in
03:06:02 chemistry from Skidmore College.

03:06:04 Q. Where'd you go next?
03:06:06 A. Massachusetts Institute of Technology, where I got a Ph.D.
03:06:09 in biochemistry.
03:06:10 Q. And while you were at MIT, were you in any particular
03:06:13 department?
03:06:15 A. Yes, I was focused in the toxicology section of that
03:06:18 department.
03:06:19 Q. After MIT, where did you go?
03:06:21 A. The Harvard School of Public Health, where I did a
03:06:23 postdoctoral fellowship.
03:06:25 Q. And were you in any particular department at Harvard?
03:06:28 A. Molecular and cellular toxicology.
03:06:32 Q. And tell us a little bit about the types of work you've
03:06:35 performed since finishing your fellowship at Harvard.
03:06:40 A. So as a human health risk assessor and toxicologist, I do
03:06:43 a lot of evaluation of potential exposure and risk to various
03:06:49 chemicals. So one thing that I have done a lot of is weight of
03:06:53 evidence evaluations or systematic reviews, where we look at
03:06:56 all of the data for a given chemical, the animal data, the
03:07:01 human data, various type of mechanistic studies to evaluate
03:07:07 whether all of the information for a chemical, whether it
03:07:10 supports an association between exposure to that chemical and
03:07:13 certain health effect.
03:07:14 Q. When you've done these weight of evidence reviews, have
03:07:17 you ever concluded that the exposures you're looking at were

03:07:21 associated with an adverse health outcome?
03:07:24 A. Yeah. So a lot of times what we're looking at are
03:07:27 chemicals where there may be an exposure that causes a health
03:07:30 effect, and we -- we're trying to look at all of the
03:07:32 information to see what is that exposure, and then where are
03:07:36 the exposures that are not causing health effect, and so we'll
03:07:39 be able to determine, you know, how does -- how do the
03:07:41 exposures that are not causing health effects, how do they
03:07:44 compare to either worker exposures or exposures in the general
03:07:47 population.
03:07:48 Q. Have you given testimony before any governmental bodies on
03:07:52 water quality standards?
03:07:54 A. Yes.
03:07:54 Q. Tell us briefly about that.
03:07:56 A. I think it was the Pennsylvania Department of
03:07:58 Environmental Protection about manganese and surface water that
03:08:03 could be used as drinking water.
03:08:04 Q. Have you published on toxicology or human health risk
03:08:08 assessment?
03:08:08 A. Yes.
03:08:10 Q. Approximately how many papers on toxicology have you
03:08:12 published?
03:08:13 A. Roughly about 30 papers on -- that I've published.
03:08:15 Q. Do those include papers on the properties and effects of
03:08:18 toxic substances?

A. Yes.
Q. Has the funding source of any of your papers ever affected your evaluation of the science?
A. No, it's always based on the science.
Q. Are those papers always peer reviewed?
A. Yes.
Q. To your knowledge, have any peer reviewers ever found your work unsupported by the science?
A. Not to my knowledge.
Q. Has any court ever found your opinions unreliable?
A. No.
Q. Have you authored any textbook chapters on toxicology?
A. I have written several textbook chapters, yes.
Q. And do you belong to any professional organizations?
A. Yes, the Society of Toxicology, Society for Risk Analysis, and I'm also a Fellow of the Academy of -- Academy of Toxicologists.

MR. TUBIN: Your Honor, the United States proffers Dr. Lisa Bailey as an expert toxicologist and human health risk assessor.

THE COURT: The Court will accept Dr. Bailey on those terms and allow her to express her opinions.

Q. Before we delve into your opinions, Dr. Bailey, I want to go over a few things that were mentioned earlier. Do you recall this quote from earlier today plaintiffs introduced?

03:09:34 This was asked of Dr. Stadler.
03:09:37 "And do you see one, two, three, four -- fifth one down
03:09:41 says 'Camp Lejeune'?"
03:09:41 "I do."
03:09:43 "Do you agree with that?"
03:09:38 Answer: "I -- I agree that there is some increased risk
03:09:46 of kidney cancer from individuals that were stationed at Camp
03:09:49 Lejeune."
03:09:50 Now, did you hear plaintiffs offer any explanation of that
03:09:54 sentence?
03:09:55 A. No, I did not.
03:09:56 Q. Is risk the same thing as causation?
03:09:58 A. No, I mean -- yeah, I mean, you can't just say that
03:10:01 there's -- first of all, I think that was in reference to a
03:10:04 risk that was not statistically significant, and that's one
03:10:08 important part of what should be qualified in that discussion.
03:10:10 But also, increased risk, if it was statistically significant,
03:10:14 does not mean causation.
03:10:16 Q. And does the word "sum" tell you anything about how much
03:10:19 exposure is being discussed?
03:10:21 A. No.
03:10:23 Q. Now, you mentioned statistical significance. Can you give
03:10:28 us, for a general audience, what's important about that? What
03:10:32 do we need to know about statistical significance?
03:10:36 A. Well, just in a general sense, it's important to know

whether the results are statistically significant in order to say that those results reliably support a conclusion of causation. So if you -- if you don't have statistical significance, it's -- the study -- you can't say that that study supports that there's a causal association. You really need to have that statistical significance. And the study has to be reliable in many other ways, but the -- being statistically significant is important for causation analysis.

THE COURT: Do you think anybody's ever gotten sick from the water at Camp Lejeune? Like, in the whole experience of people who have been on the base physically, has anybody ever, or is it just a complete farce, that no one was ever ill?

THE WITNESS: So the -- I can only speak to the plaintiffs that I evaluated and the exposures that I looked at, and the exposures for the plaintiffs that I looked at are very low, and they're within the range of what EPA would --

THE COURT: So do you think -- do you know whether there are other people who had higher exposures and who were categorically ill from the water at Camp Lejeune?

THE WITNESS: I can't speak to that because I'm only speaking to the plaintiffs in this case.

THE COURT: Okay.

Q. Earlier we also heard Dr. Del Pizzo say that the leading agency, scientific agencies, classified TCE as carcinogenic to kidney cancer. What's missing from that statement?

A. The concept of concentration. So we need to understand what is the exposure concentration where you would expect to see those health effects, where within the literature, where the concentrations in the literature, they're actually showing those associations.
Q. And what types of studies are those agencies typically reviewing when they come to these evaluations?
A. So they're looking at human studies and animal studies typically.
Q. Any particular type of human study?
A. Often occupational studies are used for these types of evaluations.
Q. And what type of exposures do you see in occupational studies?
A. They're high exposures. They're often inhalation exposures.
Q. Now, did you hear Dr. Del Pizzo earlier say that Mr. Fancher had a 44 percent increased risk --
A. Yes.
-- of kidney cancer?
MR. TUBIN: Your Honor, may I approach?
THE COURT: Yeah.
Q. Okay. I'm handing you what's been marked as Plaintiff's Exhibit 76, and if you could turn to page 6, additional file 2, Table S1.

A. Yes.
Q. And do you see the column "Kidney Cancer"?
A. Yes.
Q. And do you see the result that Dr. Del Pizzo was referring to?
A. Yes. I believe it's in the medium exposure set of numbers here. I see 1.44 as the hazard ratio.
Q. Is that result statistically significant?
A. It's not.
Q. How many cases is that result based on?
A. Ten cases.
Q. What is -- how would that factor into a weight of the evidence review if you're performing one?
A. So we would not look at that result as providing any support for a causal association between kidney cancer and TCE exposure because it's not statistically significant, and the number of cases are very low. And we also don't have good exposure information about the individual -- those ten individuals.
Q. Now, did you prepare a report in this case, Dr. Bailey?
A. Yes.
MR. TUBIN: Your Honor, may I approach?
THE COURT: Yes.
Q. Okay. I've handed you what's been marked as U.S. Exhibit 363. Do you recognize this document?

03:14:39 A. Yes, I do.
03:14:40 Q. What is it?
03:14:40 A. It's my report in this case.
03:14:43 Q. Is this a true and accurate copy of your report?
03:14:44 A. I believe so, yes.
03:14:46 MR. TUBIN: Your Honor, the United States moves U.S. Exhibit 363 into evidence subject to the Court's prior rulings.
03:14:52 THE COURT: It'll be received.
03:14:52 (Defendant's Exhibit Number 363 received.)
03:14:53 Q. Now, what principle of toxicology do you rely on in analyzing causation?
03:15:02 A. Dose is a critical principle in toxicology that we have to think about all the time.
03:15:08 Q. And why is that so important?
03:15:10 A. Because we want to understand at what dose are we seeing health effects. So we need to know what doses within a reliable study we see health effects and what doses we don't see health effects.
03:15:19 Q. Can you give us some examples of where we encounter this, all of us, in our daily lives?
03:15:22 A. Yeah, I mean, because at higher doses where you might see health effects, you sort of want to know what those high concentrations are. But in our daily lives, we -- we are exposed to things, you know, every day that at low doses are completely fine, but at high doses could be problematic.
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03:15:43 For example, just drinking water here today, I mean, if
03:15:47 you drink a normal amount of water every day, the amount of
03:15:50 water that most of us drink every day, you're fine and you
03:15:52 actually need it. But if you -- you can actually drink too
03:15:56 much water, you know, more than a liter an hour for several
03:16:00 hours, and that could lead to water intoxication. It's called
03:16:04 water toxemia. You would have -- could have nausea, weakness,
03:16:08 dizziness.
03:16:08 So even things as -- things that we need on a daily basis
03:16:12 can be toxic at high doses. UV light is another example. We
03:16:16 need UV light to help produce vitamin D in our bodies, but too
03:16:19 much UV light, as we know, can lead to skin cancer. So dose is
03:16:23 really important.
03:16:25 Q. Now, how do toxicologists determine what exposure levels
03:16:29 are associated with a harm?
03:16:34 A. So we look at all of the available literature and we look
03:16:38 at the -- you know, the quality of those studies, and we look
03:16:40 at whether the concentrations in those studies support --
03:16:45 provide evidence if -- that there are health effects at certain
03:16:51 concentrations.
03:16:53 Q. And can you use just any study to do this evaluation?
03:16:58 A. No, I mean, you want to look at all of the available
03:17:00 information, and you want to choose the study that is a high
03:17:03 quality study with reliable exposure information.
03:17:07 Q. And why is exposure quality and accuracy so important?

A. Because you want to be able to quantify what exposure concentration will result in health effects so that you then can compare the exposures of concern to that -- those exposure concentrations where you know that there are health effects, and also where you know that there aren't health effects. So it's very important to have good exposure information for that comparison.

Q. During Dr. Kelly Reynolds's testimony, Judge Boyle made a comment along the lines of the volume of water is important to know, right, whether you're just drinking Pepsis or water or how much. Is that similar to what you're describing here?

A. Yeah, you need to know the amount of water that a person is ingesting, and you need to know that they are drinking water and from the -- you know, from the water system that you're concerned about and not bottled water or Pepsi. Yeah, so it's very important to know what the exposure is.

Q. So to set the stage for some of the studies we're going to be talking about, what's the difference between an occupational study and an environmental study?

A. So an occupational study would be a study typically in sort of a manufacturing facility or industry where workers are exposed through inhalation. So they're probably -- they could be wearing personal protective equipment to protect them from, you know, higher levels of exposure. They could be putting their hands right in vats of chemicals. So they're directly

exposed to high concentrations of these chemicals.
Q. And how does that contrast with environmental studies?
A. So environmental studies, so you -- you have an understanding that levels in air may be this concentration or levels in water may be this concentration. And when I say levels in air, they're much lower than what you would have in, like, a manufacturing facility.

But what you don't have is a good understanding of how the people in that environment are actually exposed to that water, how much are they actually drinking of the water, how much time are they spending in that area where the air is X concentration, how are they -- you know, we know for workers they're there eight hours a day, five days a week for, you know, roughly, you know, however many days per year.

But for an environmental population, you don't necessarily know that because people, they work in different locations or they spend time away, and they also -- there's also different exposures within that environmental exposure situation that are not accounted for.

Q. I'd like you to take us through this difference with an example. I'm handing you what's been marked as U.S. Exhibit 4004.
A. Okay.
Q. Do you recognize this document?
A. Yes.

03:19:51 Q. What is this document?
03:19:53 A. This is the Andrew study that has been discussed.
03:19:55 MR. TUBIN: Your Honor, I'd move to have this study
03:19:57 admitted as Exhibit 4004.
03:19:58 THE COURT: It'll be received.
03:20:02 (Defendant's Exhibit Number 4004 received.)
03:20:02 MR. TUBIN: Also, I would, at this time, just ask
03:20:04 that I admit the prior Plaintiff's Exhibit 76. I forgot to ask
03:20:08 that that be admitted.
03:20:09 THE COURT: It'll be received.
03:20:10 (Plaintiff's Exhibit Number 76 received.)
03:20:10 MR. TUBIN: Thank you, Your Honor.
03:20:11 Q. Now, do you recall whether any of the plaintiff's experts
03:20:18 have referred to this study?
03:20:20 A. Yes, they have.
03:20:20 Q. And why would you be unable to rely on this study for a
03:20:27 reliable comparison?
03:20:29 A. So this is an environmental study where they are looking
03:20:33 at sort of exposure in a general area, and it's an example of a
03:20:38 study where you don't have good exposure information for the
03:20:41 individuals in the study.
03:20:43 Q. So if you turn to page 8 of that study, and the paragraph
03:20:51 that begins, "Once -- our study had some additional major
03:20:56 limitations," do you see that?
03:20:58 A. Yes.

03:20:59 Q. And the sentence beginning, "Further," what did they say
03:21:02 about the study's ability to measure individual exposure?
03:21:06 A. So in this paragraph, they're talking about the
03:21:08 limitations essentially around not having good exposure
03:21:11 information, and they say, "Further, we could not measure
03:21:14 individual drinking water exposure, including the use of
03:21:17 filtration and bottled water and consumption in the home,
03:21:19 elsewhere, patterns that may have differed in areas where TCE
03:21:22 contamination was highly publicized." So they're essentially
03:21:25 admitting that they don't have good exposure information in
03:21:28 this paragraph.
03:21:29 Q. And the sentence that says, "Nonetheless, this study's
03:21:32 lack of drinking water data is a major limitation," how would
03:21:35 that impact your evaluation of whether you could use this for a
03:21:40 toxicological comparison?
03:21:41 A. Well, you know, the authors themselves are admitting that
03:21:44 they don't have good drinking water data for this study, so I
03:21:48 would -- just from the authors' own discussion about that data,
03:21:51 I would not think that this would be a good study for a
03:21:55 quantitative dose response evaluation.
03:21:57 Q. The problems that this study suffers from, how do they
03:22:01 compare to any of the problems suffered in the Camp Lejeune
03:22:04 studies?
03:22:05 A. They're very similar to the problems in the Camp Lejeune
03:22:07 studies.

Q. And can you just explain that to us?
A. We don't have -- similarly, we don't have individual exposure information for the people in the Camp Lejeune studies who are being evaluated in the causation analysis in those studies.
Q. Now, are there TCE studies where we do have individual exposure that is reliable enough to be used for comparison?
A. Yes. Those are the occupational studies typically.
Q. And are there any in particular?
A. Well, the one that I would point to is the one that EPA has determined is the most reliable after looking at lots of information and determining that the most reliable epidemiology TCE study is the Charbotel study.
Q. And how did EPA identify Charbotel?
A. They looked at a number of epidemiology studies and determined that that was the most reliable study in terms of quantitative information for different exposure groups.
MR. TUBIN: Your Honor, may I approach?
THE COURT: Yes.
Q. Dr. Bailey, I'm going to hand you what's been marked as U.S. Exhibit 4005, a set of demonstratives prepared. I'm also going to put up a board reflecting them. And on this first page, can you tell us what this reflects about the EPA's level of scrutiny on the studies it reviewed?
A. Yeah, so they're -- they're talking here about how they

started with 50 epidemiology studies on TCE exposure, and they assess the ability to -- whether these studies can inform a weight of evidence evaluation, looking at the quality of the studies, study design, including information about exposure assessment approaches, statistical analyses, and potential sources of confounding and bias. So they looked at all of that information for these 50 epidemiology studies to then decide which ones were the most reliable.

Q. And does the next slide tell us what they concluded?

A. Yeah, so they -- they -- in this section here, they're talking about two studies that they chose to look at and decide between the two, which would be the best for doing a dose response evaluation. They looked at Charbotel and they looked at the Moore study, and between the two, they determined that the study that had the most quantitatively accurate information for the different exposure groups was the Charbotel study, and so that's what they used.

Q. And one more. This next slide, what does this tell us about the accuracy of the quantitative data in Charbotel?

A. That the data are sufficient for deriving a quantitative risk estimate for renal cell carcinoma in order to evaluate potential risk from TCE in risk -- risk evaluation, standard EPA-type risk evaluations.

Q. Now, who is Dr. Julie Goodman?

A. Dr. Goodman is an epidemiologist at Gradient and my

colleague.
Q. This EPA weight of the evidence review, did Dr. Julie Goodman perform that type of review of the TCE literature also?
A. Yes, very similar review. The EPA's evaluation was done in 2011, so hers would have included all of the information that EPA included, plus any new studies.
Q. And how did her evaluation compare to the EPA's?
A. Her evaluation came out very similarly, both sort of pointing to this study, the Charbotel study, as a reliable study for evaluating TCE exposure and kidney cancer.
Q. Did you learn of any attempts by Dr. Goodman to issue corrections to their reports?
A. Yes, there -- she did issue some corrections to her reports.
Q. And what are the significance of those to your opinions?
A. They did not affect my opinions.
Q. To your knowledge, did they change whether she's consistent with the EPA or not?
A. She's still consistent with the EPA, even with those corrections.
Q. And you had a chance to listen -- or did you have a chance to listen to Dr. Peter Shields's testimony?
A. Yes.
Q. And how would you describe Dr. Shields as a cancer physician scientist?

03:26:38 A. I would describe him as a highly credentialed, highly
03:26:43 reputable epidemiologist and physician.
03:26:46 Q. And how does Dr. Shields's view of the quality of the
03:26:49 exposure data in Charbotel compare to the EPA's and
03:26:51 Dr. Goodman's?
03:26:54 A. Yeah, so Dr. Shields talked about the Charbotel study as,
03:26:56 similarly to EPA and Dr. Goodman, that it's a reliable study in
03:27:01 terms of TCE exposure. And within that study, he talked about
03:27:06 how the authors do report an association at the highest
03:27:09 concentration.
03:27:11 Q. So some Camp Lejeune studies came out in 2014 and 2018,
03:27:15 and then in 2020, what did the EPA do related to this?
03:27:19 A. So the EPA had to do a TSCA risk evaluation in 2020, and
03:27:24 they needed to look at all of the -- all of the data for TCE
03:27:27 again, including some of the newer studies.
03:27:29 Q. That would include those Camp Lejeune studies?
03:27:31 A. Yes.
03:27:31 Q. And what did the EPA conclude in 2020?
03:27:38 A. They still relied on the Charbotel study as the reliable
03:27:41 study for risk evaluation.
03:27:43 Q. And is that what this reflects? It should be the next
03:27:49 slide.
03:27:50 A. Yes. Yeah, the 2011 IRIS assessment selected the
03:27:57 epidemiology -- epidemiological kidney cancer data, Charbotel,
03:27:59 as the best representative dose response data for derivation of

03:28:03 an oral slope factor and inhalation unit risk.
03:28:06 Q. All right. Let's talk about Charbotel for a minute. From
03:28:09 a toxicology -- from a toxicologist view, what's the bottom
03:28:12 line from the Charbotel study for TCE and kidney cancer?
03:28:16 A. Well, you -- from the results of the -- of the Charbotel
03:28:20 study, there is -- we do see a dose response within the data
03:28:25 that they reported. So we have a low exposure, a medium
03:28:28 exposure and a high exposure. And in the two lower exposure
03:28:32 groups, there is no statistically significant association
03:28:35 between TCE exposure and kidney cancer, but at the highest dose
03:28:38 group, the authors do report an association. So we see a dose
03:28:41 response in that study, and that's what we're looking for. As
03:28:44 a toxicologist, we're looking for a dose response. We're also
03:28:46 looking for good exposure information.
03:28:50 Q. And did Charbotel find both effects and noneffects?
03:28:58 A. Yeah, so they reported statistically significant
03:29:02 association at the higher dose group and not statistically --
03:29:05 and in the lower dose groups, the reported associations were
03:29:09 not statistically significant.
03:29:11 Q. And is that significant in a toxicological study?
03:29:15 A. Yes, because if it's not statistic -- statistically
03:29:18 significant, then we -- we -- those -- the associations
03:29:23 reported there are not considered to be real associations.
03:29:25 Only when they're statistically significant.
03:29:27 Q. I mean when you see effects and you also don't see

effects.
A. Yeah, so when you see effects that are statistically significant, then those are -- that's where you -- that's where you want to be comparing. You want to compare the -- the exposures where there are no effects to the exposure of concern. So you need to sort of see the whole thing, but it's very important to have doses or exposure ranges where there are no effects.
Q. And why is that?
A. Because that's what you want to be comparing to -- to the exposure of concern.
Q. And how would plaintiff's TCE exposure compare to the exposures in Charbotel?
A. Well below the exposures in the Charbotel study where effects were reported.
MR. TUBIN: And with Your Honor's permission, I'd like Dr. Bailey come down and explain this slide.
THE COURT: Okay.
A. I think you saw something similar for the *Mousser* trial a few weeks ago. So this is the same kind of comparison. I have the Charbotel dose here shown. This is the 335 ppm year where -- so it's above that concentration in the Charbotel study where they're seeing effects. This is the dose, the 150 ppm year concentration in the Charbotel study where they don't see effects.

03:30:58 This is Mr. Fancher's exposure here, and it's very small, so you can't actually see it. So I'm comparing -- I'm blowing it up here, and you can see that it's just a little bit above .1 ppm year, so well below the 335 ppm year and 150 ppm year values that are reported in Charbotel. So this is about 2,800 times lower. Mr. Fancher's exposure is about 2,800 times lower than the 335 ppm year concentration in Charbotel, above which there were significant -- statistically significant association with kidney cancer and TCE exposure.

And just to provide some perspective, I'm also showing this here, comparison, just to get a perspective on what 2,800 times means. So one person is about a hundred times smaller than the Washington monument. So it would be one person compared to 28 Washington monuments on -- stacked on top of each other. So that -- that would be the comparison.

Q. Thank you, Doctor. I have just a few questions on the source of the data. Where did you get the exposure data to compare in this plaintiff's case?

A. So the exposure data came from Dr. LaKind.

Q. And the plaintiffs, in their findings of facts and, I think, a moment ago, have conceded that Dr. LaKind's estimates are high and she assumes more exposure than plaintiff's expert, Dr. Kelly Reynolds, does. What is the significance of that to this comparison?

A. Right, so even -- even with that assumption, even with a

slightly higher exposure estimate, using conservative assumptions, we still come to the conclusion that Mr. Fancher's exposure was 28 -- 2,800 times lower than the thresh- -- than the concentration in Charbotel where they saw effects.

Q. If the doses of which Mr. Fancher was exposed could cause kidney cancer, what would be different about the results in this study that the EPA has found the most accurate as far as exposure risk?

A. Right, so if Mr. Fancher's exposures could cause health effects at the .1 ppm year concentration, then we would see in the low dose group and the medium dose group, where we're more -- you know, 1 to 150 ppm year, or 155 to 335 ppm year, that's much higher than Mr. Fancher's exposure, but we're not seeing a statistically significant association in that Charbotel study.

Q. So what does that tell you? What is your overall conclusion from this data on TCE and kidney cancer?

A. That Mr. Fancher's exposure was well below the concentrations in Charbotel, where they do see health effects.

MR. TUBIN: Your Honor, the United States moves to admit Exhibit 4005, which is a set of demonstratives.

THE COURT: It'll be received.

MR. TUBIN: Thank you.

(Defendant's Exhibit Number 4005 received.)

Q. Now, turning to, last, PCE, benzene and vinyl chloride,

03:34:19 have any of the leading scientific agencies classified those as
03:34:27 carcinogenic to the kidney?
03:34:29 A. For the agencies that I've looked at, no.
03:34:32 Q. And were you able to compare plaintiff's PCE exposure to
03:34:36 any human data?
03:34:38 A. We did not have any epidemiology studies for PCE that
03:34:43 looked at kidney cancer that also had good PCE exposure
03:34:46 information, so, no, I could not.
03:34:47 Q. When you say epidemiological studies, is that a fair --
03:34:50 like, those are the human studies?
03:34:51 A. The human studies, yes.
03:34:52 Q. Okay. And what about for vinyl chloride?
03:34:56 A. Same thing. We didn't have any human studies where we had
03:34:59 good vinyl chloride exposure information that also looked at
03:35:02 kidney cancer.
03:35:02 Q. So what did you look at instead for those two?
03:35:04 A. I looked at the animal studies for those chemicals.
03:35:08 Q. And what did those animal studies find?
03:35:10 A. That there was no association between exposure to those
03:35:13 chemicals and kidney cancer at concentrations more than a
03:35:17 million times higher than Mr. Fancher's.
03:35:21 Q. And what about for benzene? Did you have human data to
03:35:24 look at for that?
03:35:25 A. So I did have an inhalation -- a human inhalation study
03:35:29 for benzene. Also saw no association between kidney cancer and

benzene, and also at concentrations much higher than Mr. Fancher's.

Q. So what do those comparisons tell you about your opinion on whether TCE, benzene or vinyl chloride could have caused -- caused Mr Fancher's kidney cancer?

A. That overall, there's no evidence that those chemicals cause kidney cancer in general, and also that within those studies, the exposures are -- where they're seeing no effects are much higher than the con- -- the exposure concentrations for Mr. Fancher.

MR. TUBIN: No further questions for Dr. Bailey.

THE COURT: Do you have any cross?

MR. MANDELL: Yes, Judge.

CROSS-EXAMINATION BY MR. MANDELL:

Q. Dr. Bailey, I want to just start by asking you about the question that Judge Boyle asked you, and it was about whether or not anybody in this whole situation here has gotten sick from Camp Lejeune, and you made it sound like you just don't know if there are other people out there that have higher exposures, true?

A. So what I said was that I am speaking -- I have looked carefully at the exposures for the individual plaintiffs in this litigation, and so that's what I can speak to most -- that's what I'm most informed about in terms of individual exposures. I didn't say that there is likely to be people out

there who have higher exposures.
Q. You've looked at 25 plaintiffs, true? Yes?
A. Yes.
Q. And you found all 25, not enough exposure, right?
A. My conclusions for all of those plaintiffs, based on the exposure information that I looked at for all of those plaintiffs, yes, was their exposures were low and within what would be considered acceptable by EPA.
Q. Yeah, and in addition to your work looking at those 25 plaintiffs, you also testified that you relied entirely on your business partner, Dr. Goodman, for her review of the epidemiology, true?
A. So that is -- no, I don't rely on her eval- -- her weight of evidence evaluation entirely because I'm also looking at EPA's evaluation. I'm also looking at other agencies' evaluation of the data.
Q. Okay. You rely on her -- strike that.
You just testified a couple of weeks ago at this trial -- at the trial in the *Mousser* case, true?
A. Yes.
Q. And the question was:
"But at the time of your report, you relied entirely on Dr. Goodman's evaluation of the epidemiology, correct?"
And your answer was: "I did," true?
A. I think I would probably want to look at the context of

that because what I did rely on was her evaluation of the studies and then the exposure information, you know, whether those studies had exposure information.

MR. MANDELL: Your Honor, could I just approach the witness?

THE COURT: Yeah.

MR. MANDELL: Thanks.

Q. Dr. Bailey, I'm showing you a transcript from the trial in the *Mousser* case, okay? It's page 510, line 13.

"But at the time of your report, you relied entirely on Dr. Goodman's evaluation of the epidemiology, correct?"

"I did."

Is that what it says?

A. Can I look at the earlier part here? So this is talking about --

Q. Can I ask you first, is that correct?

A. Those are the words that are on the page, yes.

Q. Okay.

A. We're talking about Charbotel, Charbotel study used to derive the toxicity value. So I think the distinction was whether I looked at Dr. Shields's report versus Dr. Goodman's report. I mean, I -- I did rely on Dr. Goodman's report in terms of the epidemiology for my evaluation, but as I also say in my report and as I testified, that I -- I used the evaluations of ATSDR and EPA in addition to Dr. Goodman.

03:39:28 Q. In that quote that we just said, you say you relied
03:39:32 entirely on Dr. Goodman; is that true?
03:39:35 A. The words here say that I relied on Dr. Goodman, but I
03:39:38 think it's in contrast to Dr. Shields.
03:39:44 Q. And isn't it true, having entirely relied on Dr. Goodman
03:39:49 for your opinions in this case --
03:39:50 MR. TUBIN: Objection, Your Honor. Mischaracterizes
03:39:53 the witness's testimony.
03:39:55 THE COURT: Well, it's cross. He can ask a question.
03:39:59 Q. Is it fair, given your reliance on Dr. Goodman, that you
03:40:03 are aware that Dr. Goodman has testified:
03:40:05 The question: "Would you -- you would agree that your
03:40:09 opinions in this case are that not a single plaintiff at Camp
03:40:13 Lejeune who has any of these five diseases had their disease
03:40:17 caused by the water at Camp Lejeune, true?"
03:40:20 Answer: "My opinion is that I conclude to a reasonable
03:40:23 degree of scientific certainty that the chemicals at issue in
03:40:27 this case in drinking water at Camp Lejeune did not cause any
03:40:31 of the health effects -- health issues at issue in this case."
03:40:34 Question: "So if one were to accept your position as
03:40:38 being true, that would mean that not a single plaintiff who was
03:40:42 at Camp Lejeune who developed Parkinson's disease, kidney
03:40:46 cancer, bladder cancer, non-Hodgkin's lymphoma, or leukemia
03:40:50 would have had those diseases caused by the water at Camp
03:40:52 Lejeune, true?"

Answer: "That is true."
You're aware of that, right?
A. That's my testimony?
Q. That's Dr. Goodman's testimony.
A. Dr. Goodman's testimony, okay.
Q. Right?
A. I don't recall if that's her testimony.
Q. Okay. But this is the expert you're relying on entirely, as you said in your transcript, for the epidemiology in this case; is that fair?
A. Well, I relied on her weight of evidence evaluation of the epidemiology and her overall conclusion about whether there's an association between TCE and kidney cancer, what the reliable study is, but I did the exposure evaluation myself. I didn't rely on her exposure evaluation. So I -- based on my exposure evaluations for all 25 plaintiffs, I would come to the same conclusion, but that's based on my own exposure evaluation for all of those plaintiffs.
Q. Well, you're 25 for 25 so far, right?
A. What do you mean?
Q. You have found 25 -- you have looked at 25 individual plaintiffs, and found 25 are not causally related, true?
A. That's what the evidence supports.
Q. Right. And is it fair to say that your business has made a significant amount of money for your opinions in this case?

A. I don't know what you mean by significant.
Q. All right. Well, is it fair to say that you, for your opinions in this case, have billed the Government so far, as of September 6th, approximately $1.9 million?
A. That sounds about right.
Q. Okay. And that was as of September 6th, true?
A. Yes, probably.
Q. You've testified and prepared for -- excuse me. You have prepared for and testified at two trials. This would be the second one, right?
A. Uh-huh.
Q. Yes?
A. Yes.
Q. And how -- do you anticipate -- how much more do you anticipate billing since September 6th?
A. So up until September 6th, there were a number of years of a lot of work on looking at the available information for the individual plaintiffs and estimating what the exposures and the risks might be. So most of that billing was for developing the reports, doing the exposure evaluation, doing the risk evaluation, comparing to the epidemiology. That's where most of the money was spent, was doing that evaluation, so --
Q. I'm just asking you since September 6th, is it hundreds of thousands of dollars?
A. No.

03:43:15 Q. Tens of thousands of dollars?
03:43:18 A. I can't recall. I wouldn't know for sure what it would
03:43:20 be. I would say it's probably in the tens.
03:43:23 Q. Okay. And Dr. Goodman and yourself are business partners,
03:43:29 both with equity stakes in your company, Gradient, fair?
03:43:31 A. Yes.
03:43:32 Q. And at the last trial, you testified that you were unaware
03:43:36 of how much money Dr. Goodman has billed the United States
03:43:38 Government in this case; is that true?
03:43:41 A. Well, I'm only aware through some of the discussions
03:43:42 during -- over -- during my deposition, but not through
03:43:46 anything that I've looked at at Gradient.
03:43:48 Q. That's what you testified last trial, true?
03:43:51 A. That I'm not aware of -- what did I testify last trial?
03:43:54 Q. You said you were not aware that Dr. Goodman has billed
03:43:57 the United States government $7 million on behalf of your
03:44:01 company in this case, right?
03:44:02 A. Well, that's what I said at that trial, yes.
03:44:04 Q. Right. Following the last trial, have you done anything
03:44:07 to figure out how much she's billed?
03:44:09 A. No.
03:44:11 Q. So you're telling this Court you still have actual no
03:44:14 knowledge that Dr. Goodman, your business partner, has billed
03:44:16 the United States Government approximately $6.8 million for her
03:44:19 opinions in this case; is that what you're telling the Court?

03:44:22 A. I don't think how much she spent is really relevant to the
03:44:24 science in this case, which is what I'm here to talk about.
03:44:29 Q. I want to ask you about one specific invoice, if I could,
03:44:33 that was sent on behalf of your company by Dr. Goodman in
03:44:37 February of 2025. Are you aware that in February of 2025,
03:44:42 Dr. Goodman sent an invoice for one month's worth of work for
03:44:48 $335,000?
03:44:48 A. I'm not aware of that.
03:44:50 Q. You're not aware of that?
03:44:51 A. I'm not.
03:44:51 Q. Okay. You talked about a couple of these studies, and I
03:44:56 want to ask about them. You said -- you were talking about the
03:44:59 2014 mortality study and the 44 percent risk, right?
03:45:02 A. Yes.
03:45:03 Q. All right. And you weren't sure on the conclusion section
03:45:06 of that study, true?
03:45:11 A. Not a few minutes ago when we just looked at it, no.
03:45:13 Q. Okay. Well, it's in the binder at tab 75, if you -- if
03:45:18 you want to look at it, but I'm just going to read you the
03:45:20 conclusion section and see if it sounds right to you.
03:45:21 "Conclusion: The study found elevated hazard ratios in
03:45:25 the Camp Lejeune cohort for several causes of mortality,
03:45:29 including, number one, kidney cancer," right?
03:45:32 A. That's what the words say, yes.
03:45:34 Q. Right. Well, you keep saying that, Dr. Bailey, but I'm

03:45:37 just -- we're reading off of what the study authors have said,
03:45:40 right?
03:45:40 A. Yeah, but I don't take their opinions verbatim. I look at
03:45:43 the science myself and determine whether I agree with that
03:45:46 conclusion, and I don't.
03:45:48 Q. And I'm going to get to that in a second, but the point
03:45:50 is, you disagree with the authors of the study, true?
03:45:53 A. Yes.
03:45:54 Q. Right. And the authors of the study were examining the
03:45:56 exact cohort at issue in this case, true?
03:46:00 A. They were examining the cohort that I was just talking
03:46:02 about, yes.
03:46:03 Q. Yeah, and it was -- it was done pursuant to a governmental
03:46:06 mandate, right?
03:46:09 A. I guess. I don't know exactly how this study was done,
03:46:12 but it's a study that I've seen.
03:46:14 Q. Not aware of that, true?
03:46:17 A. I don't know if it was done because of a mandate.
03:46:20 Q. Okay. Well, you also talked about the Andrew -- the
03:46:23 Andrew study, right?
03:46:25 A. Yes.
03:46:26 Q. And in the conclusion study for the Andrew study, which
03:46:29 you weren't shown, it says, "In summary, we observed an
03:46:32 increased risk of kidney cancer associated with estimated TCE
03:46:35 exposure based on the detailed spatiotemporal anal- -- temporal

analysis of contaminated sites and residential historic data," right?

A. Where are you seeing that in this?

Q. It's page 9 of 10, and it's the very first sentence in the conclusion section there.

A. Oh, yes. Okay. That's what the authors say, yes.

Q. Right. And it says, "This documentation of residential risk from an environmental pollutant emphasizes the need for exposure mitigation measures to protect public health," true?

A. That is what it says, yes.

Q. Disagree with this author, too, right?

A. Well, it's not consistent with what they are talking about earlier in the study where they're talking about the limitations of the exposure information in the study.

Q. So you disagree with this author, too, true?

A. I'm just reading another part of this conclusion, so hold on just a minute, please.

(Witness reviews document.)

A. It says, "A study of heightened cancer surveillance of member -- for members of the public with a history of TCE exposure is warranted." I mean, they're essentially saying that more exposure -- additional study would be helpful, but they -- they also -- and that conclusion, I would say, I would argue, is not consistent with their discussion about the limitations in this study.

03:47:50 Q. So you disagree with the author, true?
03:47:51 A. I disagree with their conclusions, based on the available
03:47:54 information in the study, yes.
03:47:56 Q. Right. And what you did in this case was you attempted,
03:48:00 through looking at Dr. Goodman's reports, to analyze the
03:48:05 epidemiology in this case; is that fair?
03:48:09 A. No, I didn't analyze the epidemiology. Dr. Goodman looked
03:48:13 at all of the epidemiology. What I did was I looked for the
03:48:17 epidemiology studies that were considered the most reliable and
03:48:20 also had exposure information that I could then compare to
03:48:24 exposure for Mr. Fancher.
03:48:26 Q. So you looked at the epidemiology and tried to compare
03:48:29 what you thought to Mr. Fancher's exposure, right?
03:48:32 A. I looked at the epidemi- -- the exposure information in
03:48:35 the epidemiology, yes, to compare it to Mr. Fancher.
03:48:38 Q. Right. And what you and Dr. Goodman came up with for
03:48:40 approximately $9 million was that of all the studies that
03:48:44 exist, you felt it appropriate to analyze Mr. Fancher's
03:48:47 exposure to literally one study, true, Charbotel, that you
03:48:50 talked about; is that fair?
03:48:52 A. So it was after -- I mean, this -- EPA does the same
03:48:54 thing. They look at lots of information and they determine
03:48:57 which is the most reliable study, and Charbotel was the most
03:49:00 reliable study. They determined that in 2011. They determined
03:49:03 that in 2020. Dr. Goodman talked about it in her report. I've

looked at those -- both of EPA's evaluations. Dr. Shields talks -- talks about how that was a reliable study.

So it's one study, but it's not just plucked out of nowhere. It's plucked out of -- it's chosen out of looking at a lot of information and determining that that's the most reliable study.

Q. Right. And we're not questioning Charbotel is a reliable study, but you looked at all of the studies that were in Dr. Goodman's report, and you chose to analyze Mr. Fancher's exposure to one study, true, Charbotel?

A. It's the most reliable study.

Q. So the answer is yes?

A. Yes, because that's the study that EPA uses for risk evaluation. EPA --

Q. How do you --

A. EPA is ultimately using one study when they do risk evaluations for TCE at superfund sites.

Q. Right. And you're not allowed to do risk assessments in this case, true?

A. I'm not talking about the risk assessment.

Q. Right. So you're doing a separate analysis; is that fair?

A. I'm talking about Charbotel, yeah.

Q. I understand that, but you're doing a separate analysis, true?

MR. TUBIN: Objection, Your Honor.

03:50:00 A. I'm not sure what you mean --
03:50:01 MR. TUBIN: The order in this case is about toxicity
03:50:03 criteria and points of departure. Those are two elements of a
03:50:07 broader category called risk assessment. The order does not
03:50:11 prohibit her from talking about risk assessment. It's not a
03:50:14 gag order on risk assessment. It's these two concepts,
03:50:17 toxicity criteria and points of departure.
03:50:21 THE COURT: Overruled.
03:50:23 Q. My question is you gave a direct examination; you didn't
03:50:27 give any results from any risk assessment, right?
03:50:31 A. I did not give the results from my risk assessment, no.
03:50:34 Q. Right. You're doing a separate analysis of the
03:50:36 epidemiology. That's what you testified to on direct; is that
03:50:38 fair?
03:50:40 A. But I'm doing that analysis based on what I think is the
03:50:44 most reliable epidemiology study because it's the study that
03:50:47 EPA thinks is the most reliable EPA --
03:50:48 Q. And you relied --
03:50:48 A. -- epidemiologic study.
03:50:51 Q. -- on one study; is that true? That's what you did the
03:50:53 analysis of?
03:50:55 A. I relied on the most reliable study that EPA also relies
03:50:58 on in its evaluation of health effects, health risk, however
03:51:03 you want to talk about it, in -- at a superfund site.
03:51:06 Ultimately, they are relying on one study when they do their

risk estimates for TCE at superfund sites.
Q. Okay. So I get -- strike that.
How many total studies did Dr. Goodman look at for you and her to choose one?
A. I would have to look to see the number of studies, but there were many studies.
Q. Okay. Does the number 172 sound about right to you in the body of her report?
A. That could be right. I would have to count. I don't know. But there were many studies --
Q. Any reason --
A. -- and EPA looked at many studies as well.
Q. Any reason to disagree with that?
A. If you counted and that's what you counted. I don't know.
Q. Okay.
A. I don't have a reason to disagree with it if you think you counted correctly.
Q. So your testimony, though, is that out of 172, 1 study reliable, 171 not reliable enough to do an assessment; is that fair?
A. No, because many of those studies -- so a lot of epidemiology studies will do evaluations but not look -- not collect exposure information in addition to looking at whether there's a health effect for -- they might know that there's exposure to a chemical, but they don't know the actual exposure

information.

So what I was looking for within all of those studies was also studies that were -- that were reliable epidemiology studies, but also had good exposure information. Not all of them have good exposure information. So of the ones that have exposure information -- and I don't -- I can't remember how many of those were that EPA also looked at -- Charbotel is the most reliable.

Q. Right. And just to put it simply, Dr. Bailey, did you analyze Mr. Fancher's exposure to any epidemiology study other than Charbotel?

A. No, because Charbotel is the most reliable study.

Q. Right. So 171 unreliable, 1 reliable, true?

A. No, that's not how I would talk about it.

Q. Okay. So you put up some slides and I --

MR. MANDELL: Your Honor, can I approach the easel?

THE COURT: What's that?

MR. MANDELL: Can I approach the easel?

THE COURT: Yeah.

MR. MANDELL: Okay, thanks.

Q. You have put up some slides, and I want to just ask about the last one first. Do you remember talking about this slide, Dr. Bailey?

A. Yes.

Q. Okay. And in the bottom right-hand corner, you say,

"Mr. Fancher's TCE dose is 2,800 times lower than the Charbotel, et al., 2006, 335 part per million year TCE threshold," true?

A. That's what's written there, yes.

Q. All right. Do you remember asked -- being asked at your deposition what the TCE threshold was for kidney cancer and TCE?

A. I remember the discussion in my deposition, yes.

Q. And was the question not:

"So what is the threshold dose for TCE and kidney cancer?"

Answer: "I don't know."

A. So that discussion was not this threshold. So this -- an epidemiology threshold or exposure level in an epidemiology study, you don't have to call it a threshold. We're calling it that here because -- we're calling it -- it's a concentration above which health effects are reported in an epidemiology study.

The threshold that you're talking about from my deposition is not the same threshold as an epidemiology -- it's a regulatory threshold. It's much -- it's a concentration much lower than where you're seeing health effects, and that's sort of the -- it's a regulatory threshold where EPA, they would like to know what that threshold is, but because it's so low and it's very difficult to determine, they don't know what it is, so they draw this straight line between the epidemiology, a

03:54:45 significant effect level, which is what I'm showing there, down
03:54:48 to zero, and the threshold that I'm talking about in my
03:54:53 deposition is somewhere much lower than that threshold, so --
03:54:55 Q. They were --
03:54:55 A. -- it's two different thresholds.
03:54:57 Q. They were the words on the page in your deposition --
03:54:59 A. Two different --
03:54:59 Q. -- in that case, true?
03:55:00 A. -- thresholds. Two different thresholds.
03:55:01 Q. They were the words on the page?
03:55:04 A. They may be the words on the page, but there are two
03:55:06 different thresholds that I'm talking about.
03:55:07 Q. All right. Well, I wanted to ask you about a second slide
03:55:10 that you put up, and you had cited a bunch of -- in your first
03:55:15 three or four slides, you were citing it as EPA documents,
03:55:18 fair?
03:55:18 A. Yes.
03:55:20 Q. Okay. And in this document, there is a -- at the very top
03:55:24 of the page, there is a cutoff of a sentence; is that true?
03:55:31 A. Yes.
03:55:32 Q. Can you see it?
03:55:33 A. I think so.
03:55:34 Q. Okay.
03:55:34 A. It might be --
03:55:35 Q. Well, why don't I do this, Dr. Goodman. [sic] I can --

03:55:37 A. I think I have it here.
03:55:39 Q. -- do this. I'm going to give you just a select few pages
03:55:44 from what I believe is the same document.
03:55:46 MR. MANDELL: I'm sorry, Judge. Can I approach?
03:55:46 THE COURT: Yeah.
03:55:49 Q. And you tell me if that's the same document.
03:55:52 A. I think I did find it in the slides here, so...
03:55:56 Q. Okay. Well, if -- whatever --
03:55:57 A. If this is --
03:55:58 Q. Really what --
03:55:58 A. -- what you --
03:55:58 Q. -- I'm asking you about is --
03:56:00 THE COURT REPORTER: One at a time, please.
03:56:00 MR. MANDELL: Oh, I'm so sorry.
03:56:01 THE COURT REPORTER: It's okay.
03:56:04 MR. MANDELL: No, I apologize.
03:56:04 A. Yes, I see it in both.
03:56:06 Q. Okay. And what I'm asking you about is does the first
03:56:09 sent- -- does the first part of the sentence that's cut off
03:56:12 here, say, "A linear nonthreshold assumption was applied to TCE
03:56:18 cancer -- to the TCE cancer," and then it goes, "dose response
03:56:23 analysis because there is sufficient evidence that TCE-induced
03:56:26 kidney cancer operates primarily through a mutagenic mode of
03:56:29 action, while it cannot be ruled out for the other two cancer
03:56:32 types"?

03:56:33 A. So, yes, it's talking about this linear, no threshold
03:56:38 evaluation of risk, and that's -- that's not the same as the
03:56:41 threshold that I was just pointing to in the Charbotel study.
03:56:44 So it's -- the linear -- the linear approach is a -- is a
03:56:47 public policy decision that EPA makes about how they
03:56:50 extrapolate from concentrations in the epidemiology study down
03:56:53 to lower exposure concentrations.
03:56:55 Q. Right. And they use a linear nonthreshold assumption,
03:56:57 true?
03:56:58 A. They do for their extrapolation from high doses to low
03:57:00 doses.
03:57:01 Q. Right. So I want to ask you about another topic,
03:57:12 Dr. Bailey. You testified that, at your deposition in that
03:57:17 last trial, despite working at the same business and relying on
03:57:21 Dr. Goodman's opinions, your testimony was you've never talked
03:57:24 to Goodman -- Dr. Goodman once about this case; is that true?
03:57:27 A. That's true.
03:57:28 Q. And you testified at deposition that your teams weren't
03:57:30 allowed to talk, true?
03:57:31 A. That's correct.
03:57:32 Q. All right. And you've testified that you have ethical
03:57:36 laws at your company where experts are not allowed to speak; is
03:57:38 that fair?
03:57:39 A. Ethical walls.
03:57:40 Q. Ethical walls?

03:57:41 A. Yes.
03:57:41 Q. Okay, ethical --
03:57:41 A. So we have a block between projects. Our projects are
03:57:45 locked, so you are -- you have to be given permission to look
03:57:47 at someone else's project.
03:57:50 Q. Okay. So is the purpose of those walls to ensure
03:57:53 independence of opinions?
03:57:56 A. It's when you have two experts on the same case, and
03:57:59 they're not supposed to be talking to each other.
03:58:01 Q. Is the purpose to ensure independence of opinion?
03:58:03 A. Yes. Yes.
03:58:04 Q. Okay. How many people billed for work on your reports?
03:58:11 A. I would have to look at the invoices. I don't remember
03:58:14 exactly how many.
03:58:15 Q. Approximately 34?
03:58:17 A. I don't think that there were that many, but we had a lot
03:58:19 of -- so I had -- the key technical people, I didn't have that
03:58:24 many. I had one, two, three, four, five -- maybe six technical
03:58:28 people, but there were many library people and copy editors
03:58:32 toward the end working on the reports who had no -- they
03:58:35 weren't involved at all in the technical evaluation.
03:58:37 Q. Yeah. Well, isn't it a fact that approximately 29 of the
03:58:41 people that billed work -- billed for work on your reports,
03:58:44 also billed to work on Dr. Goodman's reports?
03:58:47 A. They were probably the copy editors and the IRC people.

Those -- they were allowed to overlap because they were not technical people.

Q. Okay.

MR. MANDELL: May I approach, Judge?

THE COURT: Yes.

Q. And I don't want to go through this in incredible detail, but we created a chart of the different individuals that have billed under both your reports and Dr. Goodman's reports. Do you see that?

A. Is this the first page of the chart? Okay.

Q. Correct. Do you see that, and then it has the Bates numbers next to it?

A. Yes.

Q. All right. Well, let's take a look at the first one. Who's Kyle Colonna?

A. Kyle Colonna, he is a junior epidemiologist at Gradient.

Q. Okay. So not a copy editor, right?

A. He is not, and I don't recall him working on my project.

Q. Well, if you look at the third page, there's an invoice entitled "Bailey USA Subpoena 53," right?

A. Let's see. Where is it?

Q. It's the third page.

A. The third page in, okay. Hold on.

Q. Did you find it?

A. Yes.

04:00:11 Q. About halfway down the page, "Associate Kyle Colonna"?
04:00:12 A. Uh-huh.
04:00:12 Q. And he billed 11 hours in May of 2024; is that true?
04:00:22 A. Yes, it looks like he did.
04:00:23 Q. So he billed for Dr. Goodman's report and he billed for your report. You're not suggesting, are you, Dr. Bailey, that he wasn't able to talk to himself about the case, the different cases, right?
04:00:26 04:00:29 04:00:32
04:00:33 A. So it's possible that he mistakenly worked on my project and should not have worked on it.
04:00:36
04:00:37 Q. Okay. Well --
04:00:37 A. It was only a few hours, and I think we told him to not do that because there is not supposed to be overlap. The majority of the people that you're showing here are copy editors and nontechnical people.
04:00:42 04:00:44 04:00:49
04:00:50 Q. Okay. Well, we created another chart.
04:00:57 THE COURT: Let's take a recess at this point. I thought we'd get rid of -- get finished with this witness --
04:01:00
04:01:02 MR. MANDELL: Sure.
04:01:02 THE COURT: -- but we're not going to. We'll be in recess for ten minutes.
04:01:05
04:01:08 (A recess is taken from 4:01 p.m. to 4:17 p.m.)
04:17:12 THE COURT: You had more cross?
04:17:15 MR. MANDELL: Just, like, one more --
04:17:15 THE COURT: That's fine.

04:17:16 MR. MANDELL: Okay.
04:17:19 Q. (By Mr. Mandell) Dr. Bailey, you were -- as we were just
04:17:23 taking a break, you had said that you believed Kyle Colonna
04:17:27 didn't work for very much time, and that you told him not to
04:17:29 work on the report anymore, right, something to that effect?
04:17:31 A. Yes, I believe it's -- they're -- most of the people on
04:17:34 this list are nontechnical, but the few technical people who
04:17:37 are on here may have done a little bit of work at one point
04:17:40 when we thought that some of the more junior people would
04:17:44 overlap, and then we decided that there really needs to be an
04:17:46 ethical wall for all technical people. So I think this was
04:17:49 earlier on in -- in the project.
04:17:51 Q. Okay. Well, would it sound about accurate if Kyle Colonna
04:17:56 had worked over a hundred hours on your reports?
04:18:01 A. No.
04:18:02 Q. That wouldn't sound accurate to you?
04:18:03 A. If he worked over a hundred hours on my reports?
04:18:05 Q. Correct?
04:18:05 A. I don't think so.
04:18:16 Q. Okay.
04:18:16 MR. MANDELL: May I approach, Judge? I'm --
04:18:16 THE COURT: That's all right.
04:18:16 Q. We created a chart of Kyle Colonna billing for you, for
04:18:21 your billing, Dr. Bailey, and if you look at the numbers, does
04:18:27 that appear to add up to 101? And in the bottom right-hand

corner of each page, it says, "Bailey USA Subpoena," does it not?
A. It does. I would have to look at the 47 hours in July 2024. I really don't think he worked that much on my report.
Q. Okay. Well, could you turn to page 1, 2, 3, 4, 5, 6 -- 7, and it's "Bailey USA Subpoena 103." Do you see that?
A. Yes.
Q. And it looks like the first, July 8th is 5 hours; July 9th, 7.4; July 10th, 6.9; July 12th, 4.3, right?
A. Yeah, this was about a year before depositions and before reports were due. I mean, it's possible this was before we decided that we needed to have an ethical wall for all technical staff. But I -- I did not think that he worked on my project for that many hours.
Q. Okay. These are your bills, right?
A. These are my invoices, yes, that are reviewed by my project manager.
Q. Okay. The last topic I want to cover, Dr. Bailey, is, is it fair to say that your business, Gradient, has been criticized publicly on a pretty regular basis?
A. I would say that I have heard of criticisms. I wouldn't say on a pretty regular basis, but I have heard of -- I am aware of criticisms.
Q. All right. Well, I think at the last trial you were asked

some questions about an entity called the International Network for Epidemiology In Policy, right?
A. Perhaps, yes, that was brought up.
Q. All right. Had you heard of that one before?
A. I'm not sure I've heard of that one, actually.
Q. All right. Well, at the last trial, I think you were asked these questions, but I just wanted to ask a couple of them, which is this organization said, "Gradient has been associated with a number of scientists employed to manufacture doubt and foment uncertainty about scientific evidence"; is that right?
A. I mean, those are the -- those are the types of discussions I have heard that I don't agree with.
Q. Okay. Well, have you -- you've heard them from other people, too, right?
A. There have been criticisms, as you just indicated, yes. Not on a fairly regular basis, but there have been criticisms.
Q. All right. Have you heard the title, "Meet the Rented White Coats Who Defend Toxic Chemicals"?
A. I have heard of that.
Q. All right. And you've read that one?
A. I don't believe I -- I'm aware of it. I may have looked at it. I haven't read it completely.
Q. Okay. Well, did you read the sentence that says, "Gradient belongs to a breed of scientific consulting firms

that defends the products of its corporate clients beyond credulity, evenly [sic] exhaustively studied substances who -- substances whose dangers are not in doubt, such as asbestos, lead and arsenic." Did you read that?

A. Oh, that's what the words say. I don't agree with it.

Q. Well, you said that you don't agree with it several times today, but isn't it true that we asked Dr. Goodman at her deposition whether she has done anything to correct the record as to all of the criticisms that have been lodged at Gradient, and her answer was she's never done one thing to correct that record; are you aware of that?

A. I'm not aware of the words that she said, but the criticisms are not valid because our work is always based on the science. Just because they're criticizing her work, it may be because they don't like the results; it doesn't necessarily mean that the science is not correct.

Q. All right.

A. Our work is based on science.

Q. The last question I have for you is in her deposition, the question was:

"So let me ask a more precise question. You have done nothing to address any of the topics we have covered in terms of other individuals questioning your scientific objectivity, true?"

Answer: "That is true."

Have you read that before?
A. I'm not aware of what -- how Dr. Goodman is talking about these criticisms. All I can tell you is that our work is based on the science.
MR. MANDELL: Judge, I have no more questions. Thank you.
MR. TUBIN: Very brief.
THE COURT: Yeah, go ahead.
MR. TUBIN: Thank you.
REDIRECT EXAMINATION BY MR. TUBIN:
Q. Dr. Bailey, does how many hours a junior epidemiologist works at your company change the scientific literature?
A. No.
Q. Does it impact your evaluation of the scientific literature?
A. No, it does not.
Q. Does Dr. Julie Goodman's deposition testimony change what the science says?
A. No.
Q. Does it impact your evaluation of the science?
A. No.
Q. If the evidence does not show causation, would any reputable toxicologist say that it does?
A. Any reputable toxicologist would look at all of the information, and if the evidence doesn't suggest that it

supports causation, that's what a reputable toxicologist would conclude.

MR. TUBIN: Thank you, Your Honor. No further questions.

THE COURT: Thank you.

(The witness exits the witness stand at 4:23 p.m.)

MR. BAIN: Your Honor, the United States calls economist Tricia Yount.

MR. ROBERTS: Your Honor, may I briefly be heard about Mrs. Yount? She filed a supplemental report last week on Wednesday, November the 4th, where she reduced her original calculation by about $182,000. Last night at the hotel, around 7:30, I got a second supplemental report where she reduced it another $80,000. She's now down on the offset to $107,000.

Your Honor, I don't have a clue what she's done. It seems a little unfair to allow them to call Mrs. Yount to the stand to talk about offsets under these conditions, so I want to bring that to Court's attention.

THE COURT: Yeah, I'll take it under advisement. I'll allow you to put the evidence on.

MS. KONSTANTOPOULOS: Thank you, Your Honor.

THE CLERK: Place your left hand on the Bible and raise your right hand, and state and spell your name for the record.

THE WITNESS: Tricia Yount, T-R-I-C-I-A Y-O-U-N-T.

TRICIA M. YOUNT, CPA, MAFF,

was sworn at 4:25 p.m., and testified as follows:

MS. KONSTANTOPOULOS: Your Honor, may I please approach to distribute exhibits and provide Ms. Yount a copy with the laser pointer?

THE COURT: Yes.

MS. KONSTANTOPOULOS: Thank you.

THE COURT: What's your last name?

THE WITNESS: Yount, Y-O-U-N-T.

THE COURT: And you're Tricia Yount?

THE WITNESS: Yes, sir.

THE COURT: Okay.

MS. KONSTANTOPOULOS: Melanie Konstantopoulos on behalf of the United States.

DIRECT EXAMINATION BY MS. KONSTANTOPOULOS:

Q. Ms. Yount, can you please state your full name for the record?

A. Tricia Morris Yount.

Q. And what is your occupation, and what kind of work do you do?

A. I am a forensic economist. I help attorneys with the economic and financial aspects of their cases.

Q. How long have you performed this type of work for litigation?

A. A little over 22 years.

04:26:47 Q. Can you tell the Court about your educational background?
04:26:51 A. I have a bachelor's degree in financial management from
04:26:55 Clemson University. I am a licensed CPA, certified public
04:26:59 accountant, and I have a certification as a master analyst in
04:27:04 financial forensics.
04:27:06 Q. Can you tell the Court about any additional associations
04:27:10 that you have related to your occupation?
04:27:13 A. I am a member of the National Association of Forensic
04:27:16 Economists. I'm on their board. I just got off the board of
04:27:20 the American Academy of Economic and Financial Experts. I'm a
04:27:25 member of the AICPA, American Institute of Certified Public
04:27:30 Accountants, and the National Association of Certified
04:27:34 Evaluators and Analysts.
04:27:37 Q. Can you summarize your professional experience?
04:27:40 A. I am -- I'm currently employed, Yount Forensics, my own
04:27:43 company, for the last two years, and I'm also an independent
04:27:47 contractor for Forvis Mazars, a full-service accounting firm,
04:27:51 who I was previously fully employed for 20 years.
04:27:56 Q. Have you been retained to provide expert testimony in the
04:27:59 past?
04:27:59 A. Yes.
04:28:00 Q. How many times?
04:28:02 A. I have testified about 50 times.
04:28:05 Q. And what types of cases are you retained in?
04:28:08 A. I primarily work on personal injury, wrongful death and

wrongful termination cases.
Q. And are you retained primarily by plaintiffs or defendants?
A. Plaintiffs mostly. I work on both sides. My caseload is about 80 percent plaintiff's work.
Q. Have you been qualified as an expert in the field of economic and financial damages before?
A. Yes.
Q. Approximately how many times have you been admitted as an expert?
A. I've testified about 50 times, so all of those.
MS. KONSTANTOPOULOS: The United States tenders Tricia Yount as an expert in the field of economic and financial damages.
THE COURT: The Court will accept the witness as an expert in that field and allow her to express her opinions.
Q. Do you have any opinions concerning whether the plaintiff's alleged exposure to contaminated water at Camp Lejeune caused Mr. Fancher's injuries?
A. No.
Q. Did you assume that for purposes of your opinions, that plaintiff has met their burden of proof for this case?
A. Yes.
Q. And, Ms. Yount, what were you asked to do in this case?
A. I was asked to evaluate the plaintiff's expert damages

report by Mr. Chad Staller. I was also asked to calculate the present value of offsets to a potential award in this case.

Q. What documents and information did you reasonably rely upon to form your opinions?

A. I've got expert report from the plaintiff, some more -- another expert -- a couple of expert reports I have for the defense. I've got deposition testimony, economic, statistic data, a lot of VA documents.

Q. Did you prepare an expert report that documents your opinions in this case?

A. Yes.

Q. Pointing your attention to the first document in your folder in front of you, which is marked as United States Exhibit 406, is this a copy of your expert report dated November 8th, 2026?

A. Yes.

Q. Does Exhibit 406 also include tables explaining your calculations along with your CV?

A. Yes.

MS. KONSTANTOPOULOS: The United States moves Tricia Yount's expert report dated November 8th, 2026, into evidence.

THE COURT: It'll be received.

(Defendant's Exhibit Number 406 received.)

Q. Ms. Yount, you heard counsel's argument earlier about your supplemental reports. Can you please explain to the Court why

did you make these supplemental reports?
A. The first report I issued was a year ago, so we needed to update it for the current trial date and current economic data, growth rates and discount rates that are -- that are current.
But there was also a math error in the first table. There was -- one of the cells was -- the present value was calculating off the wrong column, so I corrected that, and that was the first report.
The report I issued last night, it was updated because it was brought to my attention that because Mr. Fancher has a disability to both sides of his body, a bilateral condition, he gets a bump in one of his ratings, and I was not aware of that before last night. So it actually increases his non-Camp Lejeune-related ratings, so it makes his offsets lower. So I wanted to make sure it was accurate, and so we updated it to account for that.
Q. And did the changes that you made in any way affect the methodology that you used in this case?
A. No.
Q. Now, before we get into the details of each category of damages that you opined on, I'd like to give the Court a high-level summary of your opinions in this case. Have you prepared any demonstratives that we can share with the Court?
A. Yes.
Q. And is that in the folder in front of you as well?

A. Yes, they are.

MS. KONSTANTOPOULOS: And if my colleague, which he is already doing, could please place a blow-up of page 1 of Ms. Yount's demonstrative exhibit.

Q. Using this demonstrative exhibit, can you please summarize your opinions regarding Mr. Fancher for the Court?

A. Yes. This is a summary of the offsets that I have prepared. The first item is the value of medical care that the Government has already provided on behalf of Mr. Fancher. There's no future medical costs in this analysis.

And then the last two items are disability benefits. Past would be the benefits that he has received that are related to Camp Lejeune, and future would be what he's expected to receive for the rest of his life expectancy that are related to Camp Lejeune.

Q. Thank you. And to be clear for the Court, you're not offering an opinion on how the Court should ultimately deduct offsets in this case; is that correct?

A. Correct.

Q. And rather, you're calculating offsets based on standard methodology used in your field, correct?

A. Yes.

MS. KONSTANTOPOULOS: Your Honor, we offer what has been identified as United States Exhibit 4006 for illustrative purposes.

04:33:13 THE COURT: It's received.
04:33:14 (Defendant's Exhibit Number 4006 received.)
04:33:17 Q. I believe earlier you stated that you were asked to rebut
04:33:25 plaintiff's forensic economist, Chad Staller's report; is that
04:33:28 correct?
04:33:28 A. I reviewed it, yes.
04:33:31 Q. Okay. And what was your assessment of his report?
04:33:33 A. He provided in his report -- it was an illustrative
04:33:38 calculation for the medical care that Mr. Fancher's wife has
04:33:43 provided, or he provided a number, some -- some -- a one hour
04:33:48 per week illustrative calculation. He just didn't provide an
04:33:51 opinion.
04:33:51 Q. Did he also -- did he include an opinion regarding past
04:33:57 medical expenses?
04:33:58 A. No.
04:33:59 Q. Did he include an opinion regarding loss of earnings?
04:34:03 A. No.
04:34:04 Q. How about loss of earning capacity?
04:34:05 A. No, it was just --
04:34:08 Q. Did he provide an opinion regarding future medical
04:34:11 expenses?
04:34:11 A. No. He just provided this one item of medical care that
04:34:17 his -- Mr. Fancher's spouse provided.
04:34:19 Q. And that you don't consider an opinion?
04:34:22 A. He did not provide an opinion. He just gave a

04:34:26 calculation, an illustrative calculation, he called it.
04:34:29 Q. Now, going back to your offsets that you calculated
04:34:34 specific to past VHA costs, first of all, VHA stands for
04:34:38 Veterans Health Administration; is that correct?
04:34:41 A. Yes.
04:34:41 Q. What is the total cost of past medical care that has been
04:34:46 provided to the Government -- by the Government to Mr. Fancher?
04:34:50 A. That is the first item right there, the $4,542, and that
04:34:58 is based on expert report by Dr. Wang Ji.
04:35:02 Q. Thank you.
04:35:04 MS. KONSTANTOPOULOS: And, Your Honor, this amount
04:35:06 has also been stipulated to by the parties.
04:35:08 Q. All right. Earlier, you also indicated that you
04:35:13 calculated Mr. Fancher's past -- past and future VBA disability
04:35:19 benefits. VBA stands for Veterans Benefits Administration; is
04:35:22 that correct?
04:35:24 A. Yes.
04:35:25 MS. KONSTANTOPOULOS: Your Honor, I would like to
04:35:26 show what is a blown-up version of Table 1 of Ms. Yount's
04:35:29 expert report that has already been admitted into evidence.
04:35:39 And, Your Honor, I'd like to ask permission for Ms. Yount to
04:35:43 approach the demonstrative to answer these questions.
04:35:45 THE COURT: Sure.
04:35:45 MS. KONSTANTOPOULOS: Thank you.
04:36:00 Q. Now, Ms. Yount, what is Table 1 that you're showing the

Court right now?
A. So this is a summary of my calculation of the offsets. So I've got the amount of benefits that he is currently receiving right here, and this includes all of his diagnoses and the ones that are related to Camp Lejeune. And then here I have calculated what his VA benefits, his disability benefits would be without any of the Camp Lejeune-related diagnoses. And the variance, that would be the excess, what he is receiving that are related to Camp Lejeune.
Q. And generally, how did you come up with your opinions regarding the VA offsets?
A. Well, I've got the -- all of his different VA disability ratings from all the VA documents. And Dr. Ji, in his report, he told me which diagnoses were considered related. And I have a table that sort of summarizes that.
Q. I'm now going to show a blown-up version of Table 3 of your expert report that I believe you're referring to that has already been admitted into evidence. Ms. Yount, can you tell the Court what Table 3 shows?
A. So this is the summary of his diagnoses. This bottom portion are all of his diagnoses that he's received and his disability ratings. This top one, the residual scar and this kidney cancer, these are the two that are -- that are related to Camp Lejeune. And then these up here are just his monthly disability payments that he's received historically, based on

all of his combined disability ratings.
Q. Where did these monthly payment amounts come from?
A. These came straight from the VA documents, and they're also listed on the VA website. They list all their compensation rates.
Q. And what are the total disability benefits that Mr. Fancher is receiving per month?
A. Right now he is currently receiving $1,961.45 per month in benefits.
Q. And using all of this information, did you then calculate the amount of VBA benefits specifically related to Camp Lejeune?
A. Yes.
MS. KONSTANTOPOULOS: Your Honor, I'm now going to show a blown-up version of Table 2 of Ms. Yount's expert report, which has already been admitted into evidence.
Q. Ms. Yount, can you please explain to the Court what Table 2 shows?
A. So this is a calculation of the difference. Right here, these are the CLJA rate. That would be all disability ratings. So everything that he has, he is currently at a 70 percent disability rating, and this is what his monthly benefits have been each month.
This is where I have calculated had he not had those two Camp Lejeune-related diagnoses, what would his disability

rating be, and these are the monthly benefits that he would have received if he didn't have those two extra diagnoses.

And this right here is just the difference between the two monthly rates. So this represents the variance, the amount of disability payment he's receiving that is related to Camp Lejeune. So it's been about $300 per month is the related portion.

And I'll go ahead and point out that this is what the difference was. This 60 percent disability rating without Camp Lejeune, I had originally counted -- calculated it at 50 percent, but with this extra bump in rating he gets for having two different sides of his body having a disability at the same time, it raised it to 60 percent. So that would be the update that I corrected to correct this.

Q. And that correction, was that the update that you recently -- most recently made?

A. Yes, last night.

Q. Okay. And when was the last time Mr. Fancher's disability rating changed?

A. That would be September 2017.

Q. Does your Table 2 feed back into your Table 1 that we had looked at previously?

A. Yes.

Q. I'm going to ask that we go back to Table 1 once more. Ms. Yount, after having gone through your tables, does Table 1

accurately summarize your calculations regarding Mr. Fancher's VBA disability offsets?
A. Yes.
Q. Using this table, now that we've gone through the other information, please describe how you calculate Mr. Fancher's past VBA disability benefits that he's already received related to Camp Lejeune.
A. So that would be this top portion. It would be from the date he started receiving Camp Lejeune-related disability benefits, which is April 2017 through today, and these are his total benefits that he has already received that include Camp Lejeune-related diagnoses and ratings.

And this is the calculation that I made that I showed on the prior table, that if he had no -- if he did not have those two extra diagnoses and he had that 60 percent disability rating, this is what his benefits would have been.

So I've taken the difference there, and that excess amount, about $3,000 or so per year, is his disability received payments, compensation he has received that is related to Camp Lejeune.
Q. And what is your opinion regarding the amount of VBA disability benefits that Mr. Fancher has already received related to Camp Lejeune?
A. $40,128.
Q. Moving on to future VBA offsets, please explain to the

Court how you calculated Mr. Fancher's future VBA disability benefits in this case.

A. So same methodology. I've calculated his expected benefits assuming no changes to any disability ratings. I have assumed the annual cost of living adjustment, as he receives each year, and I've calculated that all the way out until his life expectancy.

And I've done the same with the benefits had he not received those two additional ratings that are related to Camp Lejeune, how much he would have received each -- or will -- expected to receive under that scenario.

And then the difference right here, this is what is the amount of excess benefits that he will expect to receive related to Camp Lejeune, and then I've discounted it back to present-day value.

Q. And what is your opinion as to the present value of VBA disability benefits that Mr. Fancher will receive in the future related to Camp Lejeune?

A. $63,553.

Q. Thank you, Ms. Yount. I have no further questions regarding the demonstratives. You can have a seat back in the witness box. Just a few more questions.

Do your calculations assume any potential changes to Mr. Fancher's disability ratings?

A. No.

Q. And is that similar to the methodology you used when calculating future values in other cases as a forensic economist?
A. Yes, it's based on, you know, the facts and the information we have today, at this time.
Q. Is absolute certainty required in order to project future calculations in your field?
A. No.
Q. All right. To sum up your VBA benefits -- no. Excuse me.
Going back to your demonstrative, Exhibit 4006, can you please tell the Court what is your opinion as to the total amount of offsets in this case related to Camp Lejeune?
A. $108,216.
Q. Thank you. And just --
THE COURT: Is this going back from today to the past, or is it including -- is this the future?
THE WITNESS: This is total. So the two top numbers here are past. That would be for past medical.
THE COURT: Okay.
THE WITNESS: This would be for past disability benefits, and the future amount is the 63 --
THE COURT: And that takes into account his life expectancy?
THE WITNESS: Yes, sir.
THE COURT: Okay.

Q. Did plaintiff's forensic economist, Chad Staller, ever offer an opinion in any of his reports challenging any of your offset opinions or methodology?
A. No.
Q. Are all of the opinions that you provided in this case to a reasonable degree of economic certainty?
A. Yes.
Q. Thank you, Ms. Yount.
MS. KONSTANTOPOULOS: I pass the witness.
THE COURT: Go ahead.
MR. ROBERTS: Okay. Thank you, Your Honor.
CROSS-EXAMINATION BY MR. ROBERTS:
Q. Ms. Yount, I don't have a whole lot for you. Back when we took your deposition -- I believe it was in February -- you had calculated these offsets at $368,399, correct?
A. Yes, sir, and that included the error that I explained earlier.
Q. And then you testified under oath that that was an accurate number for Mr. Fancher, correct?
A. I'm sure I did.
Q. Okay. And then last Wednesday, you sent a supplemental report where you had reduced that offset down to $186,797, correct?
A. Correct.
Q. And that was because you had failed to reduce one of your

numbers to present value, fair?
A. No, it was a formula. It was just pulling from the wrong cell, so it was just -- it was incorrect. I had to correct it.
Q. About a 181,000-dollar error?
A. I believe, if that's the number.
Q. Okay. And last night we were served with, I guess, your -- a third report where the total offset is now at 107,074, and that's what you're testifying about today, correct?
A. I don't think that number you said was accurate, but it it's --
THE COURT: It's 108,216.
Q. 103,674 --
A. That is -- that would be the two VBA disability benefits, the 103.
Q. Right. I'm not talking about the medical, just the VBA. So it would be 103,674. Now, you talked about something -- I think you were talking about the bilateral factor, the fact that Mr. Fancher has problems that affect both of his legs; is that fair?
A. Yes.
Q. All right. When did you become aware of the bilateral factor?
A. Yesterday about 4 o'clock in the afternoon.
Q. And how did you become aware of that?

A. When I was reviewing with the attorneys, they brought that up.
Q. Okay. Now, you've made some assumptions, have you not, Ms. Yount, in coming up with your total offset number?
A. Yes.
Q. All right. And one of the assumptions is that Mr. Fancher has got these degenerative conditions, that they'll never get worse. The non-Camp Lejeune-related conditions that are generative [sic] are never going to get worse; that's one assumption you made, right?
A. Yes. I've assumed that he will continue at that 60 percent disability rating.
Q. Right. And if those conditions get worse, that would affect your calculation, correct?
A. Yes.
Q. All right. You also assumed that Ms. Fancher would outlive Mr. Fancher, correct? I'm sorry, I said that wrong.
You assumed that Mrs. Fancher would not die prior to Mr. Fancher, correct?
MS. KONSTANTOPOULOS: Objection. Mischaracterizes the witness's testimony. She never testified to that.
THE COURT: Overruled.
Q. Well, let me -- let me see if I can straighten out some of the confusion.
If Mrs. Fancher predeceases Mr. Fancher, that would affect

your calculations, correct, ma'am?
A. Correct. And I have checked that her statistical life expectancy is longer than his, so there was no adjustment made because, to explain, he -- his benefits are based on a veteran plus a spouse. So what he's getting at is if the spouse were to pass away, his benefits would be just veteran.
Q. Right. So he would not be getting the spousal bump if she passed away, right?
A. Correct.
Q. All right. Now, you would agree that programs like the VA funding could change, correct?
A. Sure.
Q. And the VA could reduce the funding for the particular disabilities that Mr. Fancher has, true?
A. Sure.
MR. ROBERTS: That's all I've got, Your Honor. Thank you.
THE COURT: All right. Thank you, ma'am. You're excused. You have any other witnesses?
MS. KONSTANTOPOULOS: Your Honor, one question.
THE COURT: Yeah, go ahead.
REDIRECT EXAMINATION BY MS. KONSTANTOPOULOS:
Q. Have you been here this entire trial?
A. Today, yes.
Q. Okay. And you've heard all of the testimony from all of

the witnesses in this case?
A. Most of them. I think I stepped out a little bit, but yes.
Q. Has the plaintiff presented any evidence that -- from any doctor or any expert stating that his disability will change in the future?
A. I do not recall hearing that.
Q. And has the plaintiff presented any evidence that funding to the VA will change?
A. I do not recall hearing that either.
Q. Thank you.
MS. KONSTANTOPOULOS: No further questions.
THE COURT: All right. Thank you.
(The witness exits the witness stand at 4:50 p.m.)
MR. BAIN: Your Honor, we don't have anymore live witnesses, but we do have some deposition testimony exhibits to enter.
Plaintiff's counsel mentioned the deposition of Dr. Frank Bove. That was actually part of the stipulated evidence from the *Mousser* trial the parties agreed to. The depositions of Dr. Savitz and Dan Waddill are also part of the stipulated exhibits from the *Mousser* trial that we've agreed can be entered in this case.
In addition to those depositions, the United States would like to submit its deposition designations for Bridget

Fancher, Richard Gray, Nicholas Tackaberry, Andrew McIlroy, and Andrea Hartwell, which have been submitted as part of the pretrial order into evidence.

And in conjunction with those particular depositions are United States Exhibits 316, 317, 355, 350, 312 and 313.

THE COURT: They'll be received.

(Defendant's Exhibit Numbers 312, 313, 316, 317, 350, 355, 3064 through 3067, 3071, and 4007 through 4011 received.)

MR. BAIN: In addition, Your Honor, we'd just like to note for the record that we have pending *Daubert* motions that are relevant to this particular case, which are docket numbers 35, 36, 43 and 46 that are still pending.

THE COURT: I'll rule on those in the future.

MR. BAIN: And with that -- let me check with my colleagues -- the defense rests.

THE COURT: Okay. Is there any rebuttal evidence?

MR. ROBERTS: No, Your Honor.

THE COURT: Okay. You guys did a great job here. I'll hear closing arguments and end this case today, if you -- if you're game for it.

MR. ROBERTS: Sure.

MR. GUYNN: Your Honor, I'm reminded of the quote from the brilliant French mathematician, Blaise Pascal. If I had more time, I would have written a shorter letter. Right

now, Your Honor, I think that there have been a lot of witnesses who have presented at the last trial. I think it would be very helpful for both sides that -- I haven't spoken to them, but I think it would be helpful if we could remind you about that testimony that's extremely relevant to this case, and I think that we could make a much tighter and a more helpful presentation, Your Honor, if we could come back tomorrow morning and do that.

MR. ROBERTS: Your Honor, we're ready to go tonight.

THE COURT: I'm sorry?

MR. ROBERTS: We're ready to go whenever.

THE COURT: I was trying to be nice, you know. That's fine. I got to come in anyway to go to work.

MR. GUYNN: It's a beautiful courtroom, Your Honor. I'd love to come here at least one more day.

THE COURT: Okay. Good. We'll start at 10 o'clock tomorrow morning.

MR. ROBERTS: Thank you, Your Honor.

THE COURT: Okay. We'll be in recess.

(An overnight recess is taken at 4:53 p.m.)