NO. E-181,199

JOHN THOMPSON AND WIFE, CAROL THOMPSON,	)	IN THE DISTRICT COURT
Plaintiffs,	)	
VS.	)	JEFFERSON COUNTY, TEXAS
CHEVRON U.S.A., INC., et al.,	)	
Defendants.	)	172ND JUDICIAL DISTRICT

ORAL AND VIDEOTAPED DEPOSITION OF

DENNIS PAUSTENBACH, Ph.D., DABT, CIH

FEBRUARY 23, 2010

ORAL AND VIDEOTAPED DEPOSITION of DENNIS PAUSTENBACH, Ph.D., DABT, CIH, produced as a witness at the instance of the Plaintiffs, and duly sworn, was taken in the above-styled and -numbered cause on the 23rd of February, 2010, from 8:02 a.m. to 2:43 p.m., before Therese J. Casterline, CSR in and for the State of Texas, reported by machine shorthand, at the Hotel Boulderado, 2115 13th Street, Spruce Room, in the City of Boulder, County of Boulder, State of Colorado, pursuant to the Texas Rules of Civil Procedure and the provisions stated on the record.

A P P E A R A N C E S

FOR THE PLAINTIFFS:

Mr. Darren L. Brown
PROVOST UMPHREY, LLP
490 Park Street
Beaumont, Texas 77704

FOR THE DEFENDANT UNIVAR USA INC.:

Mr. Robert Scott
ABRAMS SCOTT & BICKLEY, LLP
700 Louisiana
Suite 4000
Houston, Texas 77002

ALSO PRESENT:

Ms. Mary Vaughn Tompkins, Videographer
Mr. Dallas Cowan
Ms. Sherilyn Gross
Mr. Tyler Ferracini
Ms. Jennifer Sahmel

I N D E X

EXHIBITS

EXHIBITS

EXHIBITS

P R O C E E D I N G S

THE VIDEOGRAPHER: We are on the record at 8:02. Today is February 23rd, 2010. This begins the videotaped deposition of Dennis Paustenbach, Ph.D., taken by the plaintiff in the matter of John Thompson and wife, Carol Thompson, versus Univar USA, formerly Van Waters & Rogers, et al.

We are located at 2115 13th Street in Boulder, Colorado. The court reporter is Therese Casterline. The videographer is Mary Vaughn Tompkins.

The attorneys will introduce themselves, starting with the attorney on my left and the deponent's right.

MR. SCOTT: My name is Bob Scott. I represent Univar USA.

MR. BROWN: I'm Darren Brown. I represent Carol Thompson individually and as the widow of her deceased husband, John Thompson.

THE VIDEOGRAPHER: The court reporter will now swear in the deponent.

DENNIS PAUSTENBACH, Ph.D., DABT, CIH, having been first duly sworn, testified as follows:

MR. BROWN: Bob, before we get started, pursuant to Texas Rules of Civil Procedure?

MR. SCOTT: Yes.

MR. BROWN: Do you want to read?

MR. SCOTT: And the Rules that we -- with regard to document production, the Rules that we've been -- the agreements that we've been abiding by, specifically, to my knowledge, and I think to Dr. Paustenbach's knowledge, all of the materials that have been requested by the subpoena duces tecum attached to his deposition notice are here with us today, with the exception of books and large documents that the witnesses -- expert witnesses have not been bringing.

MR. BROWN: All right. Do you want to read and sign your deposition?

THE WITNESS: Yes, sir.

MR. BROWN: All right.

EXAMINATION

BY MR. BROWN:

Q. Would you please state your name.

A. Dennis Paustenbach.

Q. What is your address, sir?

A. 25 Jessie Street, San Francisco, California.

Q. That's your business address?

A. Yes, sir.

Q. What's your home -- excuse me. What's a daytime phone where you can be reached?

A. (415) 618-3201.
Q. You're employed by ChemRisk?
A. Yes, sir.
Q. From 2003 to the present?
A. Yes, sir.
Q. You're the president of that company?
A. Yes, sir.
Q. You were formerly employed by Exponent?
A. Yes.
Q. You were the vice president of that company?
A. Yes.
Q. For how many years?
A. Almost five.
Q. All right. And who were -- who were you employed by prior to Exponent?
A. McLaren/Hart-ChemRisk.
Q. Okay. ChemRisk has been around for longer than 2003 to the present, correct?
A. True.
Q. When did it start?
A. 1985, I believe, out of my home. And in 1987, I entered -- entered into a joint venture with Mr. McLaren, and that lasted approximately 10 years. And then the company went silent for five years.
Q. What was the name of the joint venture that

you had with Mr. McLaren?

A. McLaren/Hart-ChemRisk.

Q. You've been retained by Mr. Bob Scott to act as an expert on his client's behalf in this case, correct?

A. True.

Q. When did Mr. Scott first hire you in the Thompson case?

A. He contacted me, I think, on December 1st, 2009.

Q. Prior to December 1st, 2009, you had no contact with Mr. Scott nor anyone else regarding John Thompson's case; is that correct?

A. True.

Q. What did Mr. Scott hire you to do in this case?

A. He told me that he may need me to serve as an expert in the fields of industrial hygiene, toxicology, risk assessment, state of the art on benzene, and related matters, including possibly causation.

Q. All right. Anything else?

A. If -- if needed, then I -- and if it was in my area, I could deal with warnings and -- and what I'd call risk communication.

Q. All right. Have you seen your designation as

an expert witness in this case, sir?

A. I have.

Q. It doesn't say anything about warnings or communications or anything like that that you just addressed, correct?

A. Unless it was -- unless it would be under the topic of occupational health or industrial hygiene, and I'm not sure if that's what he meant.

Q. Okay. Well, it doesn't say anything about warnings or human factors, does it?

MR. SCOTT: Object to the form.

Q. Correct?

A. No, it doesn't.

Q. And that's Exhibit 1 to your deposition.

(Exhibit Number 1 marked.)

Q. Who are your clients in this case that you're acting as an expert for?

A. Univar is the only firm that I'm aware of that's retained me.

Q. And you realize Univar was formerly known as Van Waters & Rogers?

A. I didn't know if that was the only entity Univar was comprised of. There may have been other firms, in other words.

Q. Well, let me ask you this: Did you know that

Van Waters & Rogers subsequently became Univar?

A. Yes.

Q. All right. And did you know that there were other companies, including McKesson Chemical Company, that subsequently merged in with Van Waters & Rogers, who became Univar?

A. I didn't know that.

Q. All right.

A. I -- I could have inferred that, but I wasn't certain of it.

Q. Do you have an understanding that you're acting as an expert with regard to issues relating to McKesson Chemical, who was a supplier of chemicals in the Southeast Texas area during the late '60s and early '70s?

MR. SCOTT: Object to the form.

A. To the extent that it's a question of -- within the areas that I've described, I can deal with it. I'm not familiar with McKesson's corporate history, so I -- I can't serve as a fact witness with respect to McKesson.

Q. Okay. You have McKesson Corporation as one of your clients that you've done work for in the past, correct?

A. Right.

MR. SCOTT: Object to the form.

A. I did -- I -- I think it would be -- well, I don't really know what -- at what point they -- they -- it sounds like they merged with Van Waters.

Q. I'll represent to you McKesson Chemical merged with Van Waters & Rogers in 1986.

A. Oh, in '86.

MR. SCOTT: Object to the -- object to the form.

A. Okay. That's fine. I didn't know that. Because I knew my contract was with McKesson. That's why I'm kind of surprised.

Q. Okay.

MR. SCOTT: Darren had --

MR. BROWN: I just want to make sure --

MR. SCOTT: Right. The representation's not exactly accurate. There was an asset acquisition. None of that matters for the purposes we're here for today. But they didn't merge. There was no merger. So -- but it's just -- I just --

MR. BROWN: Well, I've got the document that says they adopted all liabilities. That's my only concern.

MR. SCOTT: That's -- it was an asset acquisition document is what it says on the top of it.

And I just -- the representation that they merged is not accurate legally, and I just want to be clear.

Q. Any other companies or corporations who you've been hired to represent as an expert in the Thompson case that you know of?

A. No, sir.

Q. In what areas do you intend to offer expert testimony? Would that be the areas that you were hired for that you've previously told me?

A. Yes, sir.

Q. You're not an epidemiologist, are you, sir?

A. True.

Q. Mr. Scott has hired Dr. Irons to act as an epidemiologist in this case. You're aware of that?

MR. SCOTT: Object to the form.

A. I didn't think he hired Dr. Irons to do that, but he may have.

Q. You're -- you were not aware of that; is that right?

A. He's here as a toxicologist. I didn't know that he was also serving as an epidemiologist.

Q. All right. Do you understand Dr. Irons to be an epidemiologist or an expert in epidemiology?

MR. SCOTT: Object to form.

A. With respect to benzene, he may well be.

Q. Is that your understanding?

MR. SCOTT: Object to the form.

A. I would -- I don't have an understanding on that. I just know he knows benzene very, very well and would expect he knows the epidemiology of benzene.

MR. BROWN: All right. Let me object to responsiveness.

Q. You're not a medical director or a hematologist, are you, sir?

A. True.

Q. Dr. Natelson has been hired by Mr. Scott for that area, correct?

A. That's my understanding.

Q. You're not a professional engineer?

A. Not yet, no.

Q. You're not a human factors engineer, are you?

A. No. I've just had some training in that area.

Q. All right. And you're not a warnings expert, as you told us yesterday, correct?

A. I'm very familiar with it. I wouldn't hold myself out as a warnings expert, as I defined it yesterday.

Q. Do you intend to offer any opinions with regard to warnings or sufficiency or adequacy of warnings in this case?

A. If asked, I would -- I would have views about it, sir.

Q. All right. But have you -- have you been asked to do that so far in your preparation for your deposition here today?

A. I've been given documents that have warnings on them, and I've looked at the MSDSes and have been asked to be prepared to deal with that since I believe both Parker and Nicas have dealt with it. That's why I think it's -- Mr. Scott probably included me under that rubric of industrial hygiene, since they have claimed to cover warnings both as industrial hygienists.

MR. BROWN: Let me object to the nonresponsive portions.

Q. Your CV we marked yesterday as Exhibit 11, correct?

A. I don't remember what the exhibit number is.

Q. I'll represent to you it was Exhibit 11.

A. I'll trust you. That's fine.

Q. Okay.

A. And we can use it in this case.

Q. All right. Thank you very much. That's what I was trying to do is avoid having to duplicate and remark it.

That CV is accurate and up to date?

A. Yes, sir, except for what I mentioned yesterday.

Q. Who else at ChemRisk has done work on the Thompson case with you?

A. Jen Sahmel -- actually, the same people I mentioned yesterday.

Q. Could you give me the list --

A. Sure.

Q. -- today? I didn't write that down yesterday.

A. Jen Sahmel, Tyler Ferracini, Dallas Cowan, Amanda Phelka, maybe Kay Devlin, maybe Kara Franke, our librarian, Carrie Kahn. And I think the administrative work was done by Kimberly.

Q. All right. Jen Sahmel, what is her title?

A. I don't know the titles of these people. I can tell you about their educations, but I don't remember everybody's titles.

Q. All right. What --

A. She's -- she's the office manager in Boulder, and she's a senior health scientist.

Q. She's a certified industrial hygienist?

A. She is.

Q. Is she a toxicologist?

A. No.

Q. All right. Tyler Ferracini -- is that -- am I

pronouncing that correctly?

A. I'm -- I'm probably mispronouncing it, but Tyler could straighten me out right now if he wanted to.

Q. All right. Well, we'll go based on what -- how you know him.

What's his title; do you know?

A. No.

Q. What's his education or qualifications?

A. Environmental science.

Q. Is he an industrial hygienist?

A. No.

Q. Toxicologist?

A. I don't -- he wouldn't hold himself out as a toxicologist. He may have some training in that area.

Q. Engineer?

A. No, sir.

Q. Certified safety professional?

A. Not yet. He's too young.

Q. And -- okay. How about Dallas? And I didn't get Dallas' last name.

A. C-O-W-A-N. Ph.D. toxicologist, MS industrial hygiene. Too young to be certified in either. And he would be a mid-level scientist.

Q. All right. How about Amanda?

A. Phelka. She's a Ph.D. toxicologist.
Q. Industrial hygienist?
A. No.
Q. Kate?
A. Devlin. Environmental science.
Q. Toxicologist?
A. No.
Q. Industrial hygienist?
A. No.
Q. Safety professional?
A. No.
Q. Kara?
A. Franke.
Q. What's her title or --
A. I don't know what the title is. Education would be a master's in public health, specialty in -- probably environmental science and epidemiology.
Q. All right. Do you have your invoices for this case?
A. Yes, sir.
Q. Could I see those, please.
Do you mind if we just mark the folder as Exhibit 2?
A. Oh, it's -- you probably just want to mark the exhibit, but there's several copies in there. There

you go.

MR. BROWN: Thank you.

(Exhibit Number 2 marked.)

Q. Can you identify Exhibit 2, sir.

A. Sure. This is the December 31st, 2009 invoice for work performed in December. It was probably received sometime in early February. That's -- yeah, that would probably be about right.

Q. All right. Is it -- the invoice current and up-to-date as of December 31st for the charges that you have, on behalf of yourself and your company, billed Mr. Scott --

A. Yes.

Q. -- for your work in this case?

A. Yes, sir.

Q. All right. And you do that -- on a monthly basis, you send out invoices?

A. Yes, sir.

Q. All right. So do you know when you sent out the December invoice?

A. Yeah. I'm going to guess it was sent January 22nd, thereabouts.

Q. All right. So your January invoice will be going out shortly; is that right?

A. Right.

Q. Do you know how much work you've done in January?

A. I'd have to guess -- or estimate.

Q. What's your best estimate?

A. I'm going to guess it's approaching probably 30,000, 35,000.

Q. In January alone?

A. I'm guessing that, yes.

Q. How about February?

A. Not so much. After the report was issued, I wouldn't expect it's that significant, other than to prepare for -- Ms. Sahmel and I for -- for this day. And I guess she was pretty much restricted to Nolen, not so much Thompson. I don't -- I don't know. I'm going to -- I could say 5 to 15,000.

Q. Is that -- I mean --

A. That's my best estimate for February.

Q. Your -- your accounting would have the -- the accurate figure?

A. Sure.

Q. For December, what's your total there?

A. 26,000.

Q. You said not so much in February because after the report was issued, it wasn't --

A. It's not really a -- a report, but assembling

our thoughts on -- on the matter and examining the testimony of the various experts, including Dr. Nicas.

Q. Have you prepared a formal report in this case?

A. No.

Q. Okay. What is -- are the hourly rates of each of these individuals -- can I find those from Exhibit 2?

A. Yes, sir.

Q. All right. Have you relied upon the work -- excuse me.

Have you reviewed work done by Jen Sahmel in this case, in the Thompson case?

A. Sure.

Q. Have you relied upon her work in this case?

A. Sure.

Q. What work has she done in this case?

A. Well, it -- between her -- I didn't mention Ken Unice. I should have mentioned Ken Unice. Ken -- he's in our Pittsburgh office, and he focuses on mathematics and modeling, and he has an MS in chemical engineering.

Jen worked on the odor component and the dermal component of the analysis as well as overall project management.

Ken worked on the modeling.

I may -- go ahead.

Q. I didn't mean to interrupt you.

A. That's fine. If you were going to ask me about the others, it's --

Q. No, I wasn't. I was --

A. Okay.

Q. Ken worked on the modeling?

A. Yes, or at least attempts to reconstruct what Dr. Nicas did.

Q. All right. So you've reviewed Ken Unice's work in this case?

A. Yes, sir.

Q. And you've relied upon his work, correct?

A. Yes.

Q. And you -- you said he's a mathematical modeler. Is he a statistician?

A. Chemical engineer, MS chemical engineer. He's capable in statistics, but his specialty is modeling.

Q. Is Ken's hourly rate on Exhibit 2?

A. Yeah. And you have to back-calculate it just by dividing the total from the hours.

Q. Can you -- let me do this: Can you tell me what Jen Sahmel's hourly rate is?

A. Sure.

225.

Q. All right. How about Ken Unice's hourly rate?

A. 210.

Q. And Tyler Ferracini?

A. He's not in this invoice.

Q. Do you know what his hourly rate is?

A. I'm going to guess about 125.

Q. How about Dallas Cowan?

A. I'm going to need to think about -- well, let's see if he's in here.

He looks to be very close to 200.

Q. How about Amanda Phelka?

A. Very close to 200.

Q. Kate --

A. Devlin.

Q. -- Devlin, sorry.

A. I'm going to guess 160. She's not on here.

Q. Kara Franke?

A. I'm going to guess 150. She's -- she's not on here -- oh, she is. Hold on. Pretty good guess. Looks like about 160, 165.

Q. Okay. And you've reviewed each of these employees of yours' work and relied upon their work that they've done in this case, right?

A. That's right.

Q. What is your hourly rate for testifying, sir?

A. 575.

Q. And that's the same rate whether it's testifying in deposition or trial or working for ChemRisk for a nonlitigation matter?

A. Right. It's always 575. And I don't charge for travel time.

Q. You've stated before that while it varies from month to month, as much as 80 percent of your company's income is derived from working and testifying for corporations in litigation, correct?

MR. SCOTT: Object -- object to form.

A. That's not true. You --

Q. That's not correct?

A. The question yesterday was about me, and I said it varied from 30 to 80, with a best average of around 50 to 60. But it was me; it was not the company.

Q. All right.

A. The company is a different matter.

Q. All right. Fair enough.

With regard to your income, is it fair to say that as much as 80 percent of your income is derived from testifying on behalf of corporations in litigation?

A. No.

MR. SCOTT: Object to form.

A. Because that was a month-to-month value. That's why I gave you the 50 to 60 percent range. So of my billings, I'd say 50 to 60 percent.

MR. SCOTT: And the question was income, so be careful here. He didn't ask you about billing. So just -- just --

A. Well, it actually has changed here in the last question, so --

MR. SCOTT: I know. That's --

A. Well, which one do you want to answer? One was billings; one was income.

Q. All right. Let's talk about --

A. And one was company versus me, I think, so I just --

Q. All right. Let's talk about with regard to your billings. How much of your --

A. Me, personally?

Q. Yes, sir. How much of your billings is for testifying for corporations in litigation?

A. That's another different question. Did you mean testifying?

Q. Yes, sir.

A. Not very much. Maybe 10, 20 percent of my

billings.

Q. How much of your total billings is working for corporations in litigation, on litigation matters?

A. On average or other -- during the year?

Q. Yes.

A. I think -- I'll stick with 50 to 60 percent, maybe 70.

Q. Okay. How much of your income is from working for corporations involved in litigation?

A. I wouldn't -- I don't think I -- I would be able to answer that because my income is based on the company's performance, and it -- I don't have a way to back-calculate how that would break out with respect to litigation-related issues.

Q. How much of your company, ChemRisk's, billings are for working for corporations in litigation?

A. I think I went through that yesterday. I'm going to say 50 to 60 percent, and that includes the research component.

Q. Do you know what your company's gross income was, ChemRisk's gross income, for the year 2009?

A. I do.

Q. What is it?

A. I -- I'm going to -- I believe it's protected under privacy. It's a privately held firm.

Q. All right. So you won't answer the question on what your company's gross income was for 2009; is that right?

A. I just think I'm privileged not to have to share that.

Q. And that's why you're not answering is just you think it's privileged?

A. That's right.

Q. Have you talked with counsel about that?

A. I have not talked with counsel about that.

Q. Is there any problem with the jury knowing how much of your company's income comes from litigation where you've been retained as an expert to testify on behalf of corporations?

MR. SCOTT: Object to the form.

A. I've already answered that question.

Q. I'm just saying, is there any problem with the jury knowing that?

A. Oh.

MR. SCOTT: Object to the form.

A. No, I --

MR. SCOTT: Are you willing to give me tax returns for all your experts?

Q. Sir, is there any problem with the jury knowing how much of your company's income comes from --

or how much of your -- well, strike that.

Is there any problem with the jury in this case knowing how much of your company's income on an annual basis comes from being involved in litigation representing corporate clients?

MR. SCOTT: Object to the form.

A. I've just answered that question to you and on television.

Q. My question was, is there any problem with the jury knowing --

A. Oh, I don't mind if they know that. That's why I shared it.

Q. Well, you didn't share what your company's income was.

MR. SCOTT: You just asked him how much of; you didn't ask him how many dollars.

MR. BROWN: Bob -- Bob, I'm -- my -- please don't interrupt.

MR. SCOTT: Well, this is ridiculous.

MR. BROWN: Just make -- just object to the form --

MR. SCOTT: Object to the form.

MR. BROWN: -- like we agreed.

MR. SCOTT: Object to the form. It's a legal conclusion also. You know, is there any problem?

Do you mean a legal problem? The judge would decide that.

Q. You said you answered my question about your company's income, and to be honest and fair, you didn't answer that question. You thought it was private, correct?

MR. SCOTT: Let's stop right now. Would you read back the question he asked. He asked -- he answered exactly the question you asked.

MR. BROWN: Don't interrupt me or I'll stop the deposition and I'll --

MR. SCOTT: Well --

MR. BROWN: -- because you're violating our agreement. Now, I don't want to do this, Bob. It's a simple question.

MR. SCOTT: Listen to your own questions. He answered -- you're not hearing your own questions. He precisely answered what you asked him. You didn't hear it that way, but that's what he did, and the record will reflect it. So -- just don't represent that he didn't answer the question you asked. He did.

Q. I'm going to go back and see if we can clear this up.

What was your company's income for -- during the year 2009?

A. That, I didn't answer.

Q. That's private?

A. Yes, sir.

Q. And because we don't know that, we can't go back and apply the percentage that you gave to us to determine how much of your company's income from 2009 came from representing corporations in litigation, correct?

MR. SCOTT: Object to the form.

A. You wouldn't know the absolute dollars invoiced. You wouldn't know that. You would be able to talk about claims, about bias, or anything else you would like to talk about based on the percent that I've offered you.

Q. All right.

A. And that's what I've done in many, many other depositions and cases.

Q. All right. You know what the 2009 income for ChemRisk was?

A. Sure.

Q. And you've said that 50 to 60 percent of that has come from representing corporations in litigation.

A. I would expect that. And it could even be as high as 70, yes.

Q. Can you tell me what that 70 percent figure

would be?

MR. SCOTT: Object to the form.

A. I could tell you that.

Q. But you're not because you think it's private?

A. Yes, sir.

Q. Okay. All right. You testified as an expert back in the McCarty case in 2006 when Mr. Scott hired you to testify on behalf of Van Waters & Rogers and Univar in that case, correct?

MR. SCOTT: Object to the form.

A. I don't recall. Is that the deposition you and I had previously?

Q. Yes, sir. That would be the McCarty case, September 8, 2006.

A. Seems like yesterday.

Q. Time does get by you; I agree.

But you recall that deposition --

A. I do.

Q. -- correct?

You recall Mr. --

A. I actually recall you more than the deposition.

Q. Yeah, well, we won't go into that.

You will recall that Mr. McCarty was a Van Waters & Rogers employee who had filled 55-gallon drums

of benzene and had developed AML, correct?

MR. SCOTT: Object to the form.

A. I don't remember specifically if that's the facts of the case. If you say it is, I trust you.

Q. Right. No reason to dispute that.

Do you remember Mr. McCarty had AML?

A. I do remember that.

Q. Do you remember that he worked for Van Waters & Rogers and what he alleged in his pleadings is that he filled 55-gallon drums with benzene?

A. If you stipulate that's what it was. It sounds familiar.

Q. All right. Do you recall he had a coworker named Joseph Beverly who worked side by side with him doing that job?

MR. SCOTT: Objection, form.

A. I do remember that. I don't know if it was the same job, but I do remember Mr. Beverly.

Q. Did you know Mr. Beverly developed AML?

MR. SCOTT: Object to the form.

A. Yes, sir.

Q. How did you first learn that?

MR. SCOTT: Object to the form.

Go ahead.

A. I don't recall.

Q. Did you learn it before your work in this case beginning in December of 2009?

A. Yes, sir.

Q. All right. As a toxicologist and an industrial hygienist, does it concern you that two side-by-side coworkers for a company doing the same job, filling up 55-gallon drums of benzene, have both developed AML?

MR. SCOTT: Object to the form.

A. Well, you would have to know their complete work histories to -- before you would be able to link together any cause, occupation and effect relationship.

Q. It would concern you, wouldn't it, sir?

MR. SCOTT: Object to the form.

A. It would certainly make me look at the matter and examine their work histories.

Q. And you do have -- you do have the information -- or their work histories, or at least you had it, correct?

MR. SCOTT: Object to the form.

A. I don't recall that I had Mr. Beverly's work history in its entirety. I just don't remember now.

Q. Well, assume with me that two coworkers worked side by side filling up 55-gallon drums of benzene out in a parking lot of their business in Beaumont where

they would drum out of a tank truck directly into the 55-gallon drums and they did that for several years during the late '60s and they both developed AML. Would that concern you that there's a cause-and-effect relationship between their work and the benzene and their disease?

MR. SCOTT: Object to the form.

A. Again, I'd have to look at the facts of the matter and their whole work history. It's possible they worked each 10 years in different occupations that also had exposure to benzene. And I'd also like to look at -- at their own medical records with respect to latency and a number of other factors you have to look at.

Q. All right. As a professional toxicologist and industrial hygienist, would that type of result from people who worked side by side -- would that raise suspicions in your mind that what they were exposed to in their workplace could have caused what they ended up with?

MR. SCOTT: Object to the form.

A. Yes.

Q. AML?

A. Mr. Brown, every so often can I ask Mr. Scott what the -- the form is so can I try to figure that

out?

MR. SCOTT: It's got nothing to do with this case, just to start out with.

THE WITNESS: Thanks. I just wanted to know a little bit about that.

Q. Well, we'll talk a little bit more about it here in a minute.

A. Okay.

Q. Did you recall that Mr. McCarty, from his case, had myelodysplastic syndrome with 5q minus syndrome that transformed into AML?

MR. SCOTT: Object to the form.

A. Mr. Beverly did?

Q. No. I said Mr. McCarty.

A. Oh, Mr. McCarty.

MR. SCOTT: Object to the form.

A. I don't remember the subtype.

Q. You know Mr. Nolen has myelodysplastic syndrome, 5q minus syndrome, correct?

MR. SCOTT: Object to the form.

A. That's my recollection.

THE WITNESS: I think we need to take a break for a second.

MR. BROWN: Why don't we do that.

THE VIDEOGRAPHER: The time is 8:31. We

are going off the record.

(Recess 8:31-8:37 a.m.)

THE VIDEOGRAPHER: The time is 8:37. We are back on the record.

Q. All right, sir. Since your deposition in the McCarty case, have you testified on behalf of Van Waters & Rogers?

A. Not that I recall.

Q. How about for McKesson Chemical?

A. No, sir.

Q. How about for Univar?

A. Not that I recall.

Q. The last time you told us you had testified between 100 and 150 times on behalf of corporate defendants. I think yesterday you produced your testimony list that showed an additional approximately 100 times. Is that correct?

A. I know what you mean, but the question's not precise. I think the first time you deposed me I said up to 150, and then yesterday we said -- we estimated that there had been another 150. But we all agreed that the federal disclosure would speak for itself. I don't know what the total is. We're just guessing.

Q. I understand. But those are -- those are approximate, good as you can guess ballpark figures,

correct?

A. Well, frankly, I probably should have had somebody count them up. And maybe we'll do that at the break, just since it's in the disclosure.

Q. Well, the disclosure statement, is it all your testimony or is it just federal testimony?

A. I think it's called a federal disclosure, but it's all my testimony.

Q. Okay.

A. For five years, which I think is the requirement.

Q. All right. Would it be unrealistic to say that you've testified between 250 and 300 times in your life on behalf of corporate defendants involved in litigation?

A. If we -- if we include depositions, that's about right.

Q. Okay.

A. That would be my -- that's a good guess.

Q. How many times have you testified within the last year on a benzene-related issue?

A. Do you want a precise answer?

Q. Ballpark would be good.

A. I would guess less than 10.

Q. Would it be more than five?

A. Maybe not. It could even be as few as two or three times.

Q. Okay. Several times. You -- you have testified within the last year on benzene cases?

A. We should look.

Q. Okay. Go ahead. Feel free.

THE WITNESS: Mr. Cowan, would you -- I don't have the federal disclosure here.

Q. I think we marked that as an exhibit yesterday.

A. We did. But I have an extra one.

Q. Why don't we do this, as you suggested --

A. Do you want to do it at the break?

Q. Let's do it at the break.

A. Okay.

Q. He can maybe help you out, and then we'll do that, and then we'll move on.

A. All right. We're ready. I will do the -- we'll answer the benzene question now.

Q. Okay.

A. The last year was the question, right?

Q. Yes, sir.

A. No.

Q. You have not testified on a benzene case within the last year?

A. It doesn't look like it.

Q. Can you tell me, from looking at your list, what was the last benzene case you testified in?

A. Sure. August 8th -- no, I'm sorry. August 21st, 2008, Stevenson case.

Q. Who was the plaintiffs' attorney in that case; do you know?

A. I don't.

Q. Thank you very much, sir.

Have you ever testified on behalf of a person who claimed that exposure to benzene caused him or her to develop a disease?

A. For the plaintiffs, you mean?

Q. Yes, sir.

A. No, sir.

Q. Have you ever testified under oath in any case where you were hired by --

A. Well, excuse me. I was a fact witness for the plaintiffs in a benzene case quite a few years ago.

Q. When was that?

A. It was Meyers versus Exxon or Eli Lilly.

Q. Is that on your testimony list?

A. No. It wouldn't go back that far, but it's at least 10 years ago.

Q. All right. Remember when I asked you McCarty

and you hadn't -- you informed me you had never testified on behalf of any plaintiff who claimed that exposure to chemicals caused them --

A. Yes.

Q. -- to develop a disease?

A. Yes. And I --

MR. SCOTT: Object to the form.

A. The way I heard the question then, and even this morning is -- is as an expert. But for sake of completeness -- because I gave no expert testimony; it was a fact witness. And I don't know if that entered under your rubric or not.

Q. All right. When you testified in this -- what is it, Meyers case, you testified as a fact witness?

A. Yes, sir.

Q. Did you -- you said you provided no opinions, correct?

A. I think that's right, yeah.

Q. So you did not testify that exposure to any chemical caused the person's disease?

A. Right.

Q. All right. So you've never testified that exposure to benzene --

A. Yeah.

Q. -- ever caused anybody to develop a disease?

A. Yeah. I was just trying to give you as complete an answer as possible.

Q. All right. So in all the 250 to 300 times that you've testified as an expert, you've never testified that anyone's alleged exposure to any chemical caused their disease; is that correct?

MR. SCOTT: Object to form.

A. You've now moved from benzene to any chemical?

Q. Any chemical, yes, sir.

A. Well, I've never been retained by the plaintiffs. If I'd have been retained by the plaintiffs, then I would have testified to that, right? I mean, you don't get -- if you're testifying for the defendants -- if they -- they would have settled the case, they wouldn't use you as an expert to testify that -- that it caused a disease; they'd settle the case before they'd do that.

MR. BROWN: Well, let me object to the responsiveness.

Q. Is the answer to my question, you have never testified?

A. I've never been asked to testify by a plaintiff in a case. I would consider it if I was asked.

Q. All right. And just so we can be clear, in --

in any case where you have testified as an expert, you have never testified that a plaintiff's exposure to any chemical has caused his alleged disease; is that a fair statement?

MR. SCOTT: Object -- object to the form.

A. It's the same answer. I've not been retained by the plaintiffs and been offered an opportunity to give testimony that the chemical caused the disease.

Q. All right.

MR. BROWN: Let me object to responsiveness.

Q. You can't answer my question yes or no?

MR. SCOTT: Object to the form.

A. I think it would be misleading if I gave a yes-or-no answer.

Q. All right. You've -- you've told me earlier you have not prepared any report in this case, correct?

A. True.

Q. Do you have any form- -- formal opinions in this case?

A. Yeah, I've formed some opinions.

Q. What are your opinions?

THE WITNESS: Thank you.

A. Would you like me to read them, or do you want to read them?

Q. Well, why don't we do this: Have you got an extra copy there?

A. Sure.

Q. May we mark one as a -- as a --

A. You bet.

Q. -- deposition exhibit? All right.

MR. BROWN: Are we up to Number 4? Oh, 3.

THE WITNESS: 3, I think.

(Exhibit Number 3 marked.)

Q. All right. I want to -- maybe we can look on one of your copies there.

A. Sure.

Q. There we go.

Can you identify Exhibit 3, sir?

A. Yes. This is an overview of my three opinions in this case.

Q. All right. Does Exhibit Number 3 accurately state each of your opinions that you've formed in this case?

A. I believe so.

Q. Are there any other opinions that you intend to offer in this case, other than what's stated here on Exhibit 3?

A. It would depend on what you asked me. I'm happy to answer those questions, and they might produce

other opinions, but these are the three central opinions.

Q. All right. You knew you were coming to give a deposition in the case as an expert on the issues that Mr. Scott hired you for, correct?

A. Yes, sir.

Q. You took the time to prepare an exhibit that contained the opinions you thought were significant in this case, correct?

A. True.

Q. Can we rely upon Exhibit 3 as what your best understanding of what your opinions are going to be in this case when we're down there in front of a jury?

MR. SCOTT: Object to the form.

A. I don't understand. If you ask me something about, let's say, Dr. Nicas on some matter that I haven't addressed here or Dr. Parker or whoever, I think they call that an opinion if I answer your question. That's -- so that -- I'll be happy to answer those, and I think they're considered opinions.

If you were to limit your -- your questions to only these topics, these would be my opinions.

Q. Well, you -- you've reviewed a lot of information in this case, haven't you, sir?

A. I have, indeed.

Q. All right. And of all the information that you reviewed -- and you -- you've spoken with counsel about what your role was in this case, correct?

A. Yes.

Q. And of all those, today you show me Exhibit 3, and these three opinions are what you thought was significant and what you wanted to convey in this case as an expert, correct?

A. True.

Q. All right. Fair enough.

Do you intend or plan to offer any opinions on causation of Mr. Thompson's disease in this case?

A. I don't believe so.

Q. In your designation as an expert, which we've marked as Exhibit 1, it said that you might well do that?

A. Yes, sir.

Q. Has there been a decision made that you would not do that for some reason?

A. I guess Mr. Scott, I'm assuming, is supposed to answer that.

Q. I'm talking about to your knowledge.

A. My understanding is I'm not going to, but I'm

prepared to, if asked.

Q. All right. Tell me what work that you did do in preparation of your opinions that we've got marked here as Exhibit 3.

Let's start out by saying, what testimony did you review?

A. Oh ...

THE WITNESS: No, I need the real -- the items reviewed list. Oh, we've already made it an exhibit? No, I don't think so.

Thanks.

Q. Let's go ahead and do the same thing with that list --

A. Sure.

Q. -- if that's okay.

A. Sure.

Q. Thank you, sir.

A. Do you want one for yourself?

Q. Well, you know what? If I can -- whichever one. I can mark this one, and you can have one. It doesn't matter.

A. Okay.

(Exhibit Number 4 marked.)

A. Okay. So I looked at the Thompson deposition, the Jimerson deposition, the Nicas deposition, the

Parker deposition. There was a couple of them, I guess. The Gardner deposition. I looked at the summary on Wes Clayton.

Q. On Wes Clayton?

A. Yes, sir.

I think that's all the depositions I looked at.

Q. Who is Wes Clayton?

A. He was a professor who once worked at DuPont Haskell Labs.

Q. When did you -- when do your records indicate that you received a summary on Wes Clayton?

A. We received the deposition on February 2nd. I would have read the summary after that. The deposition was -- appears to have been taken in another matter.

Q. Any other testimony, other than John Thompson's deposition, the deposition of Mr. Jimerson, the deposition of Mark Nicas, Frank Parker, Frank Gardner, and a summary of the deposition of Wes Clayton?

MR. SCOTT: Object to the form.

A. That I read specific to this case?

Q. Yes, sir.

A. Well, I looked at a couple depositions by Wellen. And there may be a couple others that we could

look at the materials received. Those are the ones that come to mind.

Oh, I've read Rich Irons' deposition. I -- that's fairly complete.

Q. Okay. You said you reviewed a summary of Wes Clayton's deposition. Do you have that summary?

A. Yes, sir.

Q. May I have a -- may -- may we mark a copy of that summary?

A. Of course.

(Exhibit Number 5 marked.)

MR. BROWN: All right. Let's mark that as Exhibit Number 5.

Q. Is this the summary of the deposition of John Wesley Clayton that you said you reviewed?

A. Yes, sir.

Q. Did you prepare this summary or somebody that worked for you?

A. Someone that worked for me prepared it, after having looked at the deposition.

Q. Who prepared it; do you know?

A. I don't.

Q. It's somebody from ChemRisk?

A. Yes, sir.

Q. And other than the summary, did you review any

other testimony or the actual deposition of Mr. Clayton?

A. I only looked at this summary. And I don't think Irons is listed in the items received because it came late.

Q. We just did him early February --

A. Yeah.

Q. -- so it may not be on your list.

A. I can add it, if you'd like, here at the bottom.

Q. We'll just note it -- for the record, it's noted.

All right. You, personally, reviewed and read John Thompson's deposition, correct?

A. Yes.

Q. What is your understanding of John Thompson's work history as it relates to your opinions that are -- that is significant in this case?

A. He seemed to have worked as a -- what I'd call a laborer or possible -- some -- some unions would put him in the carpenters union. Primarily, he -- his exposures that are relevant in this case appeared to be in his work in the oil fields and in cleaning scaffolding and tools. And there's miscellaneous other exposures to benzene that might -- would be relevant in

this case.

Q. All right. Tell me about those. Tell me about all the exposures -- first, I -- I was going to ask you about what his work history was, and then I was going to go back and say what exposures in each of those jobs. Can we do it that way?

A. Sure.

Q. What was your understanding of his work history?

A. To make this even easier, I have a case summary that I can share with you.

Q. All right.

A. And you and I together can go through it.

THE WITNESS: Thank you.

MR. BROWN: Let's mark that as Exhibit 6.

THE WITNESS: Could I have another one, please. I'll have Mr. Brown work off this.

(Exhibit Number 6 marked.)

A. Okay.

Q. What is Exhibit 6?

A. It's -- it's what I call a case summary, which is a summary of the case-specific information, particularly on the plaintiff's work history. At the end, I also include a summary of Mark Nicas' work.

So at the beginning, this is a general

summary as to Mr. Thompson's disease in -- in his discussion of his perceived exposures.

And then after that, we go into a summary of his deposition and his Social Security records reflecting his work history.

And then -- and then -- and then each of those is discussed individually.

Q. Okay. What I would like to do is, for each job that he had which you believe was significant and his exposure history that would be pertinent to your opinions in this case, can you tell me or list those from looking at Exhibit 6 or any other way?

A. Sure. Okay. So with the Bill McFarland drilling company, where we worked approximately 1955 to 1960, he said that he worked for companies like Gulf, Texaco, Texas Crude, Exxon, and Mobil. In that job, he was a laborer for the drilling company.

He said that he was exposed to the -- the muds, which I don't expect contained benzene, and that he was exposed to the condensate, which as we discussed yesterday, there's some people who believe there's small concentrations of benzene.

Q. What do you say?

A. I think it can vary. They would be very low concentrations.

Q. Do you think that his work in the oil field while he was working as a roustabout or a roughneck and getting exposed to condensates or drilling muds or any of the other chemicals he identified in his deposition were a substantial factor in the development of his disease?

MR. SCOTT: Object to form.

A. I haven't done that analysis yet.

And then, of course, in that job, he said that he had exposure to some cleaners, including gasoline distillate, benzene, soap and water. So you'd have to consider that in any analysis.

Q. All right. Let me ask you this before we go any further: Are you aware of any peer-reviewed publications that you find reliable where workers in the oil field have an increased risk of developing AML?

MR. SCOTT: Object to the form.

A. I haven't looked into that matter.

Q. All right. So you haven't looked into that for your opinions in this case, correct?

MR. SCOTT: Object to the form.

A. Because I'm not giving a causation opinion. Okay. At least I -- so far, I have not been asked to.

Q. In addition, his work in the oil fields was -- for Mr. McFarland was in the 1950s, correct?

A. Yes, sir.

Q. Do you have an opinion as to whether those exposures in the 1950s in terms of latency would have been a substantial factor in his development of his disease?

MR. SCOTT: Objection, form.

A. You wouldn't expect so.

Q. All right. So you could rule out his exposure in the oil fields as a contributing factor of his disease? You would, correct?

MR. SCOTT: Object to the form.

A. I'd have to look more carefully at it. As you know, it's an area of debate, and clearly the -- all the experts, even in this case, seem to have a disagreement. I have my own views about latency as to where the -- the grand mean is and where the weight of evidence lies. But it's so controversial in this case, I would consider it in calculating the lifetime dose and then let -- let the -- the experts that have been designated on that topic argue it out.

Q. Well, you recall what you testified to in the McCarty case, that his exposures in the late '60s and early '70s -- you said there's no way, based on that latency, those exposures could have caused his illness. Do you remember saying that?

MR. SCOTT: Object to the form.

A. I don't remember if I said that, but I wouldn't be surprised. If I was to be asked my opinion on this matter in a case -- you know my opinions.

Q. All right. Let me ask it this way, then, and let's move on.

A. But, you know, if we do this, you're going to be opening the door for me to talk about causation. I don't know if you want to do that.

Q. If you -- would you rule out his exposures in the '50s as a cause of his illness --

MR. SCOTT: Object to the form.

Q. -- his AML? Let me strike that. Let me reask the question.

Would you rule out John Thompson's exposures in the oil field in the 1950s as a factor in the development of his AML?

MR. SCOTT: Object to the form.

THE WITNESS: Can I hear it?

(Record read.)

A. If I was --

MR. SCOTT: The same objection.

A. If I was asked to give an opinion about that, I -- I normally would not consider it as a factor in his causation.

Q. Thank you.

All right. Let's move on to his next job where he worked that you felt was significant in your opinions on benzene exposure in this case.

A. Okay. The next setting was Chesser Sutton Drilling Company. He said he worked, again, as a general floor hand or motorman. I'm not familiar with that term until this case.

Q. That's the early '60s, correct?

A. Yes, sir. In fact, it might be just 1960.

Q. And that's similar oil field work as what we just got through discussing, correct?

A. It appears it's very similar.

Q. The same question there: Would you rule out his exposures in the oil field for Chesser Sutton as a contributing factor of John Thompson's AML?

MR. SCOTT: Object to the form.

You can answer it.

THE WITNESS: Can I ask what the form objection is?

MR. SCOTT: It's comical, but -- no, I'm just kidding. Yeah. You're not designated as a causation expert in this case, and there's not enough information provided.

THE WITNESS: And -- and because it's

Texas, you have to stick with form?

MR. SCOTT: There are 20 reasons.

THE WITNESS: Okay.

MR. SCOTT: And my -- technically, I'm not allowed to answer -- answer your requests for --

THE WITNESS: I understand that. That's fine. I know that, but --

MR. SCOTT: -- what my form objection is.

THE WITNESS: And I appreciate Mr. Brown letting you answer.

MR. SCOTT: Mr. Brown's been accommodating.

MR. BROWN: Well, I wasn't -- I mean, what can I do? I can't go over there and tell him he can't talk. But that's against the Rules, but --

MR. SCOTT: I probably wouldn't listen.

MR. BROWN: It's against the Rules.

THE WITNESS: All right. Well, I'm trying to be helpful to you, so that's why I'm trying to figure out the form issue, so I don't mis- -- I don't want to misunderstand your question, you know, and give an answer that's not applicable. That's all.

MR. SCOTT: Instead of asking me, ask him to make his question more clear.

THE WITNESS: Well, I can do that.

MR. SCOTT: That may be --

THE WITNESS: It was clear to me, but I didn't -- it was clear to me.

Q. All right.

A. I would normally not consider that 1960 exposure as being pertinent to his disease.

Q. Okay. Let's go to his next job where you consider he had benzene exposures that are pertinent to this case and -- and are critical to your evaluation of his exposure history in this case, however you would care to characterize it.

A. Okay. Do you want, then, to -- you want me to not go over his whole history?

Q. No, sir, I'm not asking that. I'm just saying, let's look at his work history. I mean, he had some work history where he built houses.

A. Right.

Q. I wouldn't think you would think that building houses -- but if they -- if they do -- I'm not speaking for you. Let's talk about the ones you think --

A. Okay.

Q. -- are critical to your evaluation of his benzene exposure.

A. That's -- okay. Good. Good. So, in other words, what I would consider if I was to do a dose

calculation?

Q. However you want to characterize it.

A. Sure. I like that.

Okay. The Texas -- at the Texaco gas station, I would expect that the exposures aren't worth considering.

Q. All right. You don't believe somebody who works at a gas station gets exposed to benzene -- that those exposures would -- at least in terms of Mr. Thompson's exposures doing the work that he described and you're familiar with and read would have been a substantial factor in the development of his disease; is that correct?

MR. SCOTT: Object -- object to the form.

A. I would consider it mathematically if I -- if someone asked me to do a cumulative dose. But I -- I don't think they're significant, if -- if one's trying to assess whether or not his disease was caused by benzene.

Q. Okay.

A. The next thing is -- is he then went on to a Shell service station from 1965 to '66. Of course, there's a potential for exposure to benzene because of the content in gasoline. I would not expect that to be appreciable. I'd consider it in the calculation, but I

don't expect it to be appreciable.

The next job, the B&B Engineering and Supply Company job, 1966 to '67, as you know, that gets more complicated. In that job, he says he worked at the DuPont Sabine River Works off and on, and he says that he was exposed -- he thinks he was exposed to benzene.

Q. All right. Let me -- let me stop you there. Two things you said. You said he thinks he worked at that facility off and on during the period of '66 through '67?

A. '68 -- or '66 to '67 and --

Q. Your --

A. -- a little bit on '68.

Q. All right. But your summary said '67, is that right, or does it say '68?

A. It says both, actually.

Q. Okay. Okay. I'll represent to you that his testimony was from '66 to '68, as best he recalled. Correct?

A. Yes, that's what he said.

Q. Now --

A. But I don't know what -- you know, if it's not much into '68, then that's why I said '66-'67. But you're right, '66 to '68.

Q. But the -- the main issue I wanted to focus on there is you said off and on. Where did you get that information? Did you get that out of his deposition?

A. I thought so.

Q. All right. It's -- I'll represent to you, sir, that it's my understanding he did not work there off and on during the period he was working for B&B as --

A. You think it's only that site?

Q. I think during that period he worked at that site.

A. Okay.

Q. Do you have information that you could show me that would say otherwise? Because I don't want to dispute you. This is my recollection of the man's testimony.

A. That's what he said. I just -- the reason I said off and on is when you're a contractor like this, it's unusual to stay at one site for -- exclusively for two years. But I -- I'll -- I'm going to accept his testimony as presented. I haven't considered it any other way.

Q. I will represent to you, in all fairness, that he did say when he worked for Sabine Insulators at the Texas US Chemical and at the B.F. Goodrich facility, he

did work there off and on.

A. Okay.

Q. All right. So we're up -- from '67 to --

A. We're -- I think we're on -- I think we're -- we're talking the same thing.

THE WITNESS: We're done, aren't we?

MR. BROWN: We're at two minutes, so why don't we change the tape and take another break. Is that okay?

THE WITNESS: Okay. Sure.

THE VIDEOGRAPHER: The time is 9:05. We are going off the record. This is the end of tape 1.

(Recess 9:05-9:13 a.m.)

THE VIDEOGRAPHER: The time is 9:13. We are back on the record. This is the beginning of tape 2.

Q. All right. We were talking about his pertinent work history that were critical or pertinent to your evaluation of his benzene exposure history.

A. Yes.

Q. We were through his work at DuPont Sabine River Works for B&B Insulation, and we were going to go to the next workplace that you thought was significant.

A. Right. He then, around 1970, worked through Sabine Insulators at Texas US Chemical, where he

describes exposures that he thinks he had to benzene as well as B.F. Goodrich.

I did -- I did not think it was likely that his construction work, where he was exposed to paints, was likely to expose him to much benzene. He -- he doesn't talk about it there.

I can go back -- I would consider it in the analysis, but I don't expect that there's much benzene exposure there.

Q. All right. You talked about his exposures at the Texas US Chemical Company, which is a rubber plant down at -- in Port Neches Texas, and B.F. Goodrich.

Did you see his testimony where he said he could not recall having any exposures to benzene at the B.F. Goodrich facility?

A. I do remember that.

Q. All right.

A. Whereas he said he did when he was at Texas US Chemical, which I understand to be a combination Texaco and US Rubber Enterprise.

Q. All right. Have -- we went over the work history that you felt was pertinent to your assessment of his benzene exposure history?

A. Yes.

Q. All right. Have you ever visited the Texas

US Chemical rubber plant in Port Neches?

A. I don't believe I have.

Q. Have you ever visited the DuPont Sabine River Works in Orange, Texas?

A. I don't believe I have.

Q. Have you seen any actual benzene monitoring data specific for John Thompson?

A. No, sir.

Q. Have you seen any actual benzene monitoring data specific for B&B Insulator workers?

A. No, sir.

Q. How about Sabine Insulation workers?

A. Not industrial hygiene data, no.

Q. All right. Have you seen any actual industry hygiene monitoring data for anybody who worked at the DuPont Sabine River Works which you feel is appropriate or representative to discussing this case?

A. Not yet.

Q. Do you expect that you will?

A. It's possible.

Q. Do you have -- have you been advised that those -- that data exists and could be forthcoming?

A. I haven't been told they exist, but I can't rule out that they won't be forthcoming.

Q. All right. You have not seen any to date

DuPont Sabine River Works benzene monitoring data which you have used in the formulations of your opinions in this case, correct?

A. Not yet.

Q. All right. And you have not seen any benzene monitoring data for the Texas US Chemical Company that you have used in the formulation of your opinions in this case; is that correct?

A. True. Wait.

THE WITNESS: Can I hear that back again?

Q. I'll just reask it.

A. Okay.

Q. Have you seen any actual benzene monitoring data for any workers or air monitoring for benzene at the Texas US Chemical Company?

A. No.

Q. Have you seen any actual air monitoring data for benzene -- of workers who were using benzene as a cleaning solvent to clean their hands, tools, and equipment?

MR. SCOTT: Object to the form.

A. Ever in my life?

Q. That you feel is important to your opinions in this case.

A. I -- I have -- I've seen such data over time.

I haven't looked at it because -- lately, since I haven't been asked to do an exposure calculation specific to this person.

Q. All right. In all these documents that you have here, you don't have any actual benzene monitoring data where workers had their breathing zones monitored while they were cleaning their hands and tools with benzene; is that correct?

MR. SCOTT: Object to form.

A. I didn't bring such information.

Q. All right.

A. That doesn't mean I don't have it; it just means I haven't thought about it in this case. That's why I didn't bring it.

Q. All right. You don't have it here today with all your documents, and you haven't utilized it in your opinions, correct?

A. True.

Q. Is it your testimony that there have been instances where industrial hygienists have monitored breathing zones of workers -- I'm sorry.

Is it your testimony, sir, that there have been industrial hygienists who have actually done industrial hygiene monitoring of the breathing zones of workers while they were using benzene as a cleaning

solvent to clean their hands and tools?

A. Counsel said yesterday that he believed that it's reported in Patty's 1963. I haven't checked to see if he's right, but I do recall it having been studied in one or two reports over the years. I don't remember if they were published or unpublished, but it's been looked at.

Q. Now, would cleaning your hands and tools with benzene --

A. No, they -- be careful. It's -- they weren't cleaning their hands. The tools don't have to involve the hands. That's a misperception in this case.

You can imagine quite easily how you put a pipe wrench in mineral spirits and use a brush on it and never get your hands in it. It's not necessary. It's one of the flaws, I think, in the testimony.

MR. BROWN: Well, let me object to responsiveness.

Q. Using benzene as a cleaning solvent during the 1950s, 1960s, or 1970s would have been an unsafe practice; do you agree with that, sir?

MR. SCOTT: Object to the form.

A. Well, as I said yesterday, it's too -- it's too global a statement to say it's an unsafe practice. If it's done outside and it's done in a -- in a proper

manner and you know that the risks -- or the airborne concentrations are not going to be significant, it's -- it's okay. It's not advised; it's not a good idea. It's a practice that's been discouraged for 50 or more years.

Q. You would discourage it, wouldn't you, sir?

A. Sure.

Q. It's a potentially unsafe practice, isn't it?

A. You bet.

Q. And because of the gravity of the harm that could result from it, it should never be done, correct?

A. Certainly not in the modern era.

Q. It shouldn't have been done back in the 1950s when Exxon was saying never use benzene as a cleaning solvent, correct?

MR. SCOTT: Object to the form.

A. Well, I -- I can't say never have been done or shouldn't have been done because it was done, but it brings with it some hazards if you -- if you don't do it pretty well.

Q. It shouldn't have been --

A. It -- as I said, it -- shouldn't is a bit strong, but it -- it certainly was ill-advised.

MR. SCOTT: Object to the form of the last question.

Q. All right. There were always substitutes available for -- used as a cleaning solvent besides benzene that were safer, correct?

MR. SCOTT: Object to the form.

A. Always is too strong, but certainly there -- for almost everything that I can imagine being on a tool, there should have been an alternative that would have been equally -- nearly equally as good and safer.

Q. And more -- and just as readily available, if not more?

A. I would expect.

Q. Have you seen any actual air monitoring data for benzene at either of the facilities, DuPont Sabine River Works or Texas US Chemical, which you feel is relevant to John Thompson's benzene exposure at those facilities?

A. I haven't seen it yet.

Q. Do you have any reason to believe that it would be forthcoming?

A. I believe that Mr. Scott has -- has made a request to DuPont for additional information, but I don't believe he's received it.

Q. So you don't know if there's any or not, correct?

A. Right, I don't know.

Q. Okay. Have you seen any sworn testimony from any workers at the DuPont Sabine River Works regarding work conditions at that facility, other than the testimony that you've described from your items reviewed list?

A. Not yet, no.

Q. All right. Do you expect that it -- or do you have any indications that such testimony would be forthcoming?

A. I think there's an affidavit I haven't seen.

Q. What's --

A. I think there's an affidavit I haven't seen.

Q. All right. Why is it that you think there's an affidavit for DuPont Sabine River Works that you have not --

A. I'm not sure it's Sabine River, but there's an affidavit I haven't seen. Mr. Scott would have to fill in the details on that.

MR. SCOTT: It's the Gene Thompson affidavit. I realized this morning apparently we hadn't sent him that. So it's -- that's just whatever it is.

MR. BROWN: Yeah. It's --

MR. SCOTT: I mean, I think you may now have a copy, but --

THE WITNESS: You --

MR. BROWN: All right.

THE WITNESS: I'd have to -- I'd have to read it.

MR. SCOTT: But that's what he's talking about.

THE WITNESS: That's what I'm talking about.

Q. All right.

A. Do you -- should we just pass on that?

Q. Well, I mean, I'll represent to you Gene Thompson worked with his brother John Thompson at the DuPont Sabine River Works and what you're telling me is, you don't recall having seen that before today?

A. Yes.

Q. Fair enough. I appreciate it, and --

A. All right. Okay.

Q. You've seen Mr. Jimerson's testimony who testified that Van Waters & Rogers supplied 55-gallon drums to that DuPont Sabine River Works facility during the time period that Mr. Thompson was working out there, correct?

MR. SCOTT: Object to the form.

A. I don't know if it was drums or drum. I'd have to go look at -- to be sure.

Q. Have you -- have you read Mr. Jimerson's testimony?

A. Yes, sir.

Q. It is what it is, correct?

A. Yes, sir.

Q. Okay. Have you seen --

A. That's well said, by the way.

Q. Have you seen Lee Fry's affidavit for Texas US Chemical? He was a lab chemist who said that both McKesson and Van Waters & Rogers supplied 55-gallon drums of benzene to that facility.

MR. SCOTT: Object to the form.

A. I don't think I've seen that.

Q. Have you seen the Paul Strother affidavit where -- who identified McKesson and Van Waters & Rogers as suppliers of benzene to that facility?

MR. SCOTT: Object to the form.

A. I don't believe I have.

Q. Have you seen any documentation that shows the locations in the DuPont Sabine River Works facility where benzene would have been present either in process streams or wastewater, process flow diagrams, anything like that?

A. I haven't attempted to look at that.

Q. All right. The same thing for Texas

US Chemical?

A. True.

Q. Other than Mr. Thompson's exposures as he described in his deposition to benzene and -- at DuPont Sabine River Works and as described by his brother Gene in his affidavit, which you have not seen, do you know of any other benzene exposures that Mr. Thompson would have had at DuPont Sabine River Works which you feel contributed to his -- or would have been significant in his exposure assessment?

MR. SCOTT: Object to the form.

A. No. I only have the information that's provided.

Q. All right. Same thing for Texas US Chemical: Other than what Mr. Thompson describes as his benzene exposure at that facility, do you have any other evidence that he had benzene exposures at the Texas US Chemical facility that are significant in your opinions on his benzene assessment or benzene dose?

MR. SCOTT: Object to the form.

A. No.

Q. Have you spoken to Dr. Irons about this case?

A. No. I've just read his testimony.

Q. All right. How about Dr. Natelson or Dr. Weed?

A. No.

Q. You understand that Mr. Thompson was diagnosed with AML, correct?

A. Yes, sir.

Q. You understand that his death certificate says that he died as a result of complications from AML, correct?

MR. SCOTT: Object to form.

A. I don't recall, but I assume that that's -- I think that's true.

Q. All right. Do you have any basis to dispute Mr. Thompson's diagnosis of AML?

MR. SCOTT: Object to the form.

A. The only thing that's in dispute is the relationship with benzene as expressed in Dr. Irons' deposition. And given that I -- I think Dr. Irons is probably as authoritative as anybody in the world on that issue, then I would defer to him with respect to his beliefs that his -- that Mr. Thompson's disease was related to benzene.

Q. Okay.

MR. BROWN: And just -- I need to object to responsiveness.

Q. What I was asking -- maybe I wasn't clear -- do you have any basis to dispute that Mr. Thompson did

not have AML -- or strike that.

Do you have any basis to dispute that Mr. Thompson had AML?

MR. SCOTT: Object to the form.

A. No.

Q. All right. You would agree that benzene is a carcinogen, correct?

A. At sufficient dose and duration --

Q. All right.

A. -- it has the potential to be.

Q. OSHA, NIOSH, IARC, National Toxicology Program, EPA, you're familiar with all those organizations?

A. Yes, sir.

Q. They have all found that benzene is capable of causing cancer in humans, correct?

A. Right. And I don't deny that that's true.

Q. And the specific type of cancer that each of these organizations have found that is caused by benzene is what?

A. AML, a form of AML.

MR. SCOTT: Objection, form.

Q. All right. Well, they -- they've just found AML; they haven't deciphered or distinguished between any subtypes, correct?

MR. SCOTT: Object to the form.

A. I don't think they've taken it under that close of an examination, any of them.

Q. And that's the disease Mr. Thompson has, AML, correct?

MR. SCOTT: Object to the form.

A. Well, again, I'd defer to Natelson and Irons as -- as to precisely what form of AML he had and why.

Q. All right.

MR. BROWN: Let me object to responsiveness.

Q. You agree yourself that benzene can cause AML, correct?

A. Yes, sir.

Q. You have published that benzene can cause AML on numerous occasions, correct?

A. I have.

Q. The epidemiological evidence strongly supports the association between benzene and AML, correct?

MR. SCOTT: Object to the form.

A. With the provisos I've given, yes, sir.

Q. All right. There have been numerous epidemiological studies that have reproduced and replicated the results of the original studies by Infante and Rinsky confirming that benzene can cause

AML, correct?

MR. SCOTT: Object to the form.

A. Yes, sir.

Q. There is a dose-response relationship between benzene and exposure and the development of AML, correct?

A. I believe there is.

Q. The position that benzene can cause fatal blood disease, including AML, has been reported over the last century in the historical scientific and medical literature, correct?

MR. SCOTT: Object to the form.

A. Following certain appropriate doses and duration, yes, sir.

Q. All right. But -- but I guess the point of the question is, that's been long known for -- for almost a century, correct?

MR. SCOTT: Object to the form.

A. Almost a century.

MR. SCOTT: Would you repeat that question back.

(Record read.)

A. I misanswered. I didn't hear the including AML part. Blood dyscrasias but not AML.

Q. Well --

A. Not for a century.

Q. -- you've testified that since 1928, there have been reports that benzene causes leukemia, correct?

MR. SCOTT: Object to the form.

A. No -- or reports that it might be causing leukemia, not --

Q. All right.

A. It wasn't definitive.

Q. All right. And you have read the API toxicological review for benzene of 1948. We've gone over that several times, you and I?

A. You and I have, yeah, sure.

Q. And probably with others, too, correct?

A. Yep. And let's both agree the document speaks for itself.

Q. Well, just one thing I wanted to mention out of it. That document written by Professor Drinker, a renowned professor of --

A. Hygiene.

Q. -- hygiene -- did you know Dr. Drinker?

A. No. He passed away. I think he was Dr. Korn's -- Dr. Korn may have known him.

Q. Did you know his reputation?

A. Oh, sure.

Q. He -- he was well thought of, correct?

A. Oh, for sure.

Q. He reported in the 1948 API document that in 1948, there were reasonably well-documented instances of the development of leukemia among workers chronically exposed to benzene. Do you recall that?

MR. SCOTT: Object to the form.

A. We ought to try to look at the document to be sure what it says.

Again, specifically, it says, abnormal forms or young cells may abound and reasonably well-documented instances of the development of leukemia as a result of chronic benzene exposure have been cited.

Q. Now, if Dr. --

A. And then the next sentence says, it is generally believed that various individuals differ in their bone marrow response to benzene, some showing no essential change, some showing decreased cellularity and others increased cellularity, and even incidences of malignant changes.

Q. Since we're reading out of it, may I mark that as Exhibit 7?

A. Sure.

(Exhibit Number 7 marked.)

Q. And just so that we're clear, what I'll do is --

A. If you want, we'll use a pen so it gets copied.

Q. I've highlighted it, and hopefully -- now what we can do is maybe mark along the side of it, like you said, so if it copies and it's not in color, you'll see it bracketed.

Dr. Drinker reported in 1948 there were reasonably well-documented instances of the development of leukemia as a result of chronic benzene exposure that had been cited, correct?

A. Right.

Q. If somebody of his stature is saying reasonably well-documented, that's not something that you would consider to be isolated case reports, correct?

MR. SCOTT: Object to the form.

A. Well, it's -- I think it's based on isolated case reports, but if you get enough of them, you get very suspicious.

Q. Yeah. And in 1948, they're saying it's reasonably well documented?

MR. SCOTT: Object to form.

Q. What do -- what do you consider reasonably

well-documented to mean, sir?

A. A number of case reports that seem to point toward a particular cause.

Q. Okay. All right. Do we --

MR. BROWN: Here's Exhibit 6, too. I didn't know if you're keeping those in your stack down there, but for the court reporter -- there you go.

Q. You would agree that the fact that benzene could cause acute myelogenous leukemia is something that is not seriously challenged by health professionals today, correct?

A. True.

Q. And it is generally accepted among the relevant medical/industrial hygiene/toxicology/health professionals that benzene can cause AML, correct?

A. Is that different than the prior question?

Q. It's just a word -- it's -- let me reask it and see if you can answer it.

A. I'm trying to see if -- what the difference is.

Q. In the law --

A. In the law?

Q. -- general acceptance has a -- a particular meaning.

A. Okay.

Q. Let me ask you this.

A. Sure.

Q. Is it generally accepted among toxicologists, medical doctors, industrial hygienists, and epidemiologists that benzene is associated with causing AML?

MR. SCOTT: Object to the form.

A. Following sufficient dose and duration, there's an increased risk of AML.

Q. All right. Do you have any reason to believe that benzene is not capable of causing the type of AML that Mr. Thompson had?

A. Yes. As I said before, Dr. Irons -- I don't know what Natelson believes, but Dr. Irons believes there's a good reason to question it.

Q. All right. You're not the expert on that area, as you told us, correct?

A. True.

Q. And you would defer to Dr. Irons, correct?

A. True.

Q. And you would defer to Dr. Irons' opinions as to whether benzene could cause AML with an M4 variant, correct?

A. Yes, sir.

Q. And that's the type of -- subtype of AML that

John Thompson had, as you understand it, correct?

MR. SCOTT: Object to the form.

A. I'd have to go back and check, but that's my recollection.

Q. All right. And if -- if Dr. Irons had published in the past that benzene is capable and known to cause AML of the M4 variant, you wouldn't have any reason to dispute or differ with that, correct?

MR. SCOTT: Object to the form.

A. Well, it would -- it would depend when the timing of that paper was because he just completed several years of research, and I believe he's more firmly crystallized his views over the last year or two. So whatever his current views are based on that body -- complete body of research, then I would defer to whatever his current views are.

Q. You read his deposition where he said that the reason why his opinions have changed with regard to some of the diseases that can be caused by benzene is based on the Shanghai study, correct?

MR. SCOTT: Object to form.

A. Yes, sir, that's -- that's my understanding.

Q. And you -- and you saw where he said that was the only thing that changed his mind. Did you see that in his deposition?

MR. SCOTT: Object to the form.

A. I don't know if he said only.

Q. Okay.

A. Do you want me to look?

Q. Well, his deposition will speak for itself. So I'm just asking you if you recall that in his deposition.

And you were aware that the Shanghai study was funded by the petroleum industry to the tune of $35 million, correct?

A. I'm not aware of the figure, and I don't know if they are the only funder of that study.

Q. Well, did you see what Dr. Irons has said who funded the study and how much they received from it?

A. I did read that.

Q. And it was $35 million?

A. I -- I don't remember it being that large, but if you say it is, that's fine.

Q. Well, that's what Dr. Irons said.

A. If that's what he said, that's fine.

Q. And I'm --

MR. SCOTT: Object to the form.

Q. Let me -- let me be fair with you. Do you recall Dr. Irons testifying to that?

A. Let's take a look. He -- he did select a

number, for sure. I don't remember if it was 35 or 30. But if I can take a look, then we'll be -- we'll make the record clear.

Q. If you don't remember, as you sit here, that's fine. I'm not going to -- I'll represent to you that's what it was, and --

A. If you represent that, then I don't have any reason to question you.

Q. Okay. You also know that benzene can cause myelodysplastic syndrome, correct?

MR. SCOTT: Object to form.

A. Some forms.

Q. Well, you've testified in the past that benzene is known to cause myelodysplastic syndrome; do you recall your testimony?

MR. SCOTT: Object to form.

A. As a nonspecialist in that area, like most hygienists and toxicologists that don't specialize in this, we -- we use that term.

For a specialist, they -- they look more carefully, just like there's hundreds of forms of cancer, and we generally just say it's known to cause an increased risk of cancer. As times pass, as we get to know cancers more -- more thoroughly, then epidemiologically and medically we refine our

statements.

Q. Okay.

MR. BROWN: Let me object to the nonresponsive portions.

Q. You recognize that Dr. Irons, who you consider to be an authority on benzene disease causation, has also testified in the past and testified in his last deposition, benzene can cause myelodysplastic syndrome, correct?

MR. SCOTT: Object to the form.

A. I think he would say some forms, with his refined understanding.

Q. Do you recall in the McCarty case, we talked about the letter that Shell's epidemiologist and medical doctor, Sally Cowles, had written to the API concerning a draft of a document called Benzene-Induced Leukemia: An Examination of Disease Endpoints? Do you recall that from our last deposition?

A. I believe so.

Q. Have you reviewed that in preparation for your deposition here today?

A. No.

Q. ChemRisk, apparently, had made a draft of a document called Benzene-Induced Leukemia: An Examination of Disease Endpoints. Do you recall that?

A. Not right now.

Q. I looked on --

A. I mean, if you show it to me, I'll take a look.

Q. Well, I -- I do not have a copy of it.

A. Okay.

Q. I looked on your publications list, published/nonpublished articles, and I didn't see a copy of Benzene-Induced Leukemia: An Examination of Disease Endpoints.

Do you -- is there --

A. I don't think I -- unless Dr. Pyatt wrote it. Wait, wait. Can you read back the title, please.

Q. Yes, sir. It's Benzene-Induced Leukemia: An Examination of Disease Endpoints.

A. Oh, yeah. I think that's Dr. -- oh, that's 1990.

Q. Yes, sir.

A. Wow.

Q. Reviewed by ChemRisk. Do you see that?

A. Yeah. This is 20 years ago.

Q. Well, I understand it's a long time. But that's your company, ChemRisk, correct?

A. Yes.

Q. That's 1990. And your company was doing --

for the API work and titled the work as -- I guess you titled it was Benzene-Induced Leukemia -- and what was the rest?

A. Benzene-Induced Leukemia: An Examination of Disease Endpoints.

Q. Who -- excuse me. Go ahead.

A. I'm not surprised that we would have offered to do such -- write such a paper, but I had forgotten -- if -- if we did, I'd forgotten about it.

Q. Who did you work on that with?

A. Well, this would have been through the API benzene committee, which has been around for a long time, and it's -- Ralph Gingell was either the chairman at that time or on the committee.

Q. And occasionally they would ask consultants -- and I guess ChemRisk would be one of them -- to do work for them, correct?

A. True.

Q. When you would do work for API, whether ChemRisk or yourself, how were you paid?

A. I'm -- let's just make sure the record's clear. I don't think we ever did this work. I think it was a proposal.

Q. All right.

A. Now, to answer your question, how were we

paid?

Q. Yes, sir.

A. I think we got a check from API.

Q. Did you get it from the API or from the API's attorneys?

A. I don't know.

Q. You don't remember?

A. No.

Q. Okay.

A. I wouldn't have even touched the check anyway. It's something I wouldn't even have seen.

Q. In any event, with regard -- she's -- this letter -- and we've discussed it before -- Sally Cowles is commenting at the API's request on ChemRisk's article, correct?

A. Okay.

Q. All right. Let me mark -- mark the Sally Cowles letter as Exhibit Number 8 to this deposition.

(Exhibit Number 8 marked.)

A. Most -- most of that paragraph looks to be Dr. Cowles' views, not -- not our views.

Q. I -- I agree with you. And I'll represent -- this is my understanding, and you tell me if you understand any different.

You wrote a paper for ChemRisk, you

provided that to API, and API sent it around to various people to comment on it, and Sally Cowles was one of the ones they sent it to. Is that accurate?

A. That's not my recollection, because I don't -- I think I would have seen or read this work product. It's either -- it's -- my expectation is it was a proposal to write such a paper, and we would have -- in such a proposal would have given some bullet points as to what we thought the paper would address and likely conclude. And she's now giving her views about whether or not such a paper is warranted.

Q. All right. Do you still have a copy of the proposal bullet point document that you would have provided to the API?

A. I think it's highly unlikely.

Q. Okay. Let's look at what she said. She says, it is not clear to me just what is hoped to be gained from emphasizing the potential role of myelodysplastic syndrome as a leukemia precursor in a chemically-induced condition.

Did I read that correctly?

A. I believe so.

Q. Then she says, I don't have any great disagreement with the discussion ...

So it sounds like it's more than just a

bullet point. It sounds like there's a discussion that she's referring to. Do you agree with that?

A. Sounds like it.

Q. ... but think that the point can be made that there are differences between the different leukemias without admitting that benzene may cause myelodysplastic syndrome as well.

Did I read that correctly?

MR. SCOTT: Object to form.

A. Yes, sir.

Q. It sounds like she doesn't want to have a publication out there from the API or an API-funded study that admits benzene can cause MDS, even though she agrees it can; do you agree with that?

MR. SCOTT: Object to form.

A. I don't know that I'd read it -- read into it that way. I think she's saying that there's -- there's so many different potential causes of MDS that it -- one need not focus anymore on benzene as one of the causes. I think that's what she's saying.

Q. All right. So you --

A. I don't think she's trying to hide anything from anybody. It's -- it's all over the literature at that point that it may cause MDS.

Q. All right. But she doesn't want to admit,

apparently. That's --

MR. SCOTT: Object --

Q. Am I reading that wrong?

MR. SCOTT: Object to the form of the question.

A. I think -- I think she's still alive, and you can just ask her. I don't know what she meant. It would be wrong for either of us to try to guess what she meant. If she's still alive, and I believe she is --

MR. SCOTT: She is.

A. -- I'd -- I'd just ask her, is what I'd suggest.

Q. She says also that since MDS cases often show similar chromosomal changes to AML cases and a certain percentage go on to become AML, that, therefore, MDS is just another entity in the benzene-induced disease continuum. She said there would appear to be other ample arguments to make besides that one, which was apparently stated in your proposal she's commenting on, correct?

MR. SCOTT: Object to the form.

A. I think she's saying -- we should ask her, but I think she's saying a document like this would have to be more complicated than what we propose because of the

complexities of the disease evolution.

Q. Apparently your document said benzene could cause MDS and your document said that there were chromosomal changes that were similar between myelodysplastic syndrome and acute myelogenous leukemia, correct?

MR. SCOTT: Object to form.

A. It may have said that.

Q. All right. And your suggestion that I ask Sally Cowles about what she says and what she meant, I can tell you, I took her deposition on July 9th, 2002, and -- and I did ask her some of those things.

MR. BROWN: I'll mark this deposition excerpt --

THE WITNESS: So do you want to make this 8 (sic)?

MR. BROWN: Yes, sir.

(Exhibit Number 9 marked.)

Q. In particular, I asked her about did she think that myelodysplastic syndrome could be caused by benzene, and she told me that she thought it could. But what I wanted to emphasize here is I also asked her about her comments about your paper where it talked about the chromosomal changes.

And this is what I asked her, where you

talk about chromosomal changes, AML; do you see that?

She says, uh-huh.

And this is referring to the same letter.

What are you referring to there?

Her answer was, presumably some of the chromosomal breaks that have been seen in the chromosomal changes that are seen in some cases of AML and myelodysplastic syndrome.

And I asked her, what are the chromosomal changes you're familiar with?

And what does she say is the first one right there?

MR. SCOTT: Can you give us page and line on this?

THE WITNESS: This is page 128, line 9.

A. Her answer was, 5q minus, 5-7 deletion.

Q. That's the same disease Mr. Nolen has, correct?

MR. SCOTT: Object to the form.

A. That's my understanding.

Q. That's the same disease Mr. McCarty had, correct?

MR. SCOTT: Object to the form.

A. I -- I don't recall.

Q. All right.

MR. BROWN: Do you have a stapler or paper clip? Here's one right here. It's broken.

THE WITNESS: Do you want to grab one from the front desk, if there isn't one here.

Q. Could I ask you to see if you do have a copy of your draft.

A. Sure.

Q. I mean, you could look and see, and if we can, you can supplement that to us. Would that be any problem?

A. It would be a significant undertaking. I would have to talk to counsel about it.

Q. What counsel?

A. Mr. Scott.

Q. Oh, okay. All right. Well, I would appreciate it, if it -- if it's possible.

MR. SCOTT: Do you know what case the Sally Cowles deposition was taken in?

MR. BROWN: That was in the Page case.

MR. SCOTT: Page.

THE WITNESS: Do you want a copy of this made today? Okay. Thanks.

A. This is the deposition of July 9th, 2002.

MR. SCOTT: May I see that real quick?

Q. Sir, would it surprise you that when I took

Dr. Irons' deposition in the McCarty case and we talked about Mr. McCarty's 5q minus syndrome that back in 2006 it was Dr. Irons' opinion that that was strong evidence that benzene could be associated with causing that illness?

MR. SCOTT: Object to form.

A. I would just say what -- whatever he believed and he said at the time must have been representative of his views at the time.

Q. Okay.

A. From what -- from reading his current deposition, it looked like his thoughts have evolved based on his recent research.

Q. I will agree, he -- he did say his opinions changed, and the basis of that change was his Shanghai study, which he had been working on and had been funded by the --

A. I sure wouldn't infer his views are affected by the funding agency.

Q. Well, you could see how somebody sitting on a jury would want to know the source of his funding, correct?

MR. SCOTT: Object to the form of the question.

A. Sure.

Q. All right. You would agree, sir, that Mr. Thompson had exposures to benzene during his work at the DuPont Sabine River Works facility and at the Texas US Chemical rubber plant in Port Neches?

MR. SCOTT: Object to the form.

A. Based on his testimony.

Q. All right. Do you have any reason to dispute that Mr. Thompson would have had benzene exposure while he worked at those facilities?

MR. SCOTT: Object to the form.

A. I -- I have reason to dispute the description of how he claims to have interacted with the benzene, but I wouldn't be surprised if he didn't have some level of exposure to benzene.

Q. All right. Do you have any testimony from any person that says Mr. Thompson was not exposed to benzene as he described while he worked out at the DuPont Sabine River Works facility or at the Texas US Chemical facility?

A. I don't think I have any testimony that puts that into question.

Q. You saw his testimony where he said --

A. Well, I mean, there's -- there's some testimony about whether or not Univar supplied benzene, but there's nothing to that facility and -- and for

very long. But I -- I can't dispute that the benzene wasn't provided by somebody in -- present there.

Q. All right.

MR. BROWN: Let me object to the nonresponsive portions.

Q. You don't have any testimony from any person who you've read or seen that says, I know Mr. Thompson worked out here, and he says he was exposed to benzene, but he was not exposed to benzene like he said he was, correct?

MR. SCOTT: Object to form.

A. I haven't seen that kind of testimony.

Q. You did see Mr. Thompson's testimony where he said he used benzene twice a day to wash and clean tools and equipment and even clothes, correct?

A. Yes, sir.

Q. Do you have any testimony that you've looked at that disputes that?

A. I haven't seen such.

Q. I know you haven't seen Gene Thompson's testimony from the time period that he worked with his brother out at the DuPont Sabine River Works facility --

MR. SCOTT: Object to form.

Q. -- but I'll represent to you that testimony

confirms his exposures to benzene as described by Mr. Thompson.

Do you have any reason to dispute that?

MR. SCOTT: Object to the form. I mean, disputes your representation about what somebody's affidavit, not testimony says, without reading either?

Q. I'm just saying, do you have any -- if Gene Thompson testified that his brother -- he and his brother used benzene as described by John, and their testimony says we used benzene as a cleaner at the DuPont Sabine River Works facility out of 55-gallon drums, do you have any reason to dispute his testimony --

MR. SCOTT: Object to the form.

Q. -- based on something that you've read from another person, either sworn or unsworn statement?

MR. SCOTT: Object to the form.

A. If he says what you said or whatever else he said, I don't have any reason to dispute it, but -- other than my professional experiences. I don't have any other sworn testimony that -- that refutes it.

Q. You saw Mr. Thompson's testimony where he would get benzene out of a 55-gallon drum and put it into five-gallon buckets and use it as a cleaner while on the site of their contractors' shack, and some days

when it was good weather, he would use it to clean up outside, and some days when it was bad weather, he would actually use it on the inside. Do you recall that testimony?

MR. SCOTT: Object to the form.

A. I think it's a -- it's a fairly close representation of what he said.

Q. All right. Any testimony from anybody that you've seen that would say, no, that's not true?

MR. SCOTT: Object to the form.

A. I haven't seen testimony that clearly disputes what he said.

Q. You saw where he testified that when he would use benzene as a cleaner like this, it would turn his hands white and dry?

A. I remember that testimony.

Q. That's consistent with benzene exposure on the skin, correct?

MR. SCOTT: Object to form.

A. It's consistent with exposure to virtually all of the solvents.

Q. But if somebody was using benzene as a solvent and using it on a regular basis, you know that it's consistent with the literature that it can turn the hands white or chalky, dry, and make them crack,

correct?

MR. SCOTT: Object to form.

A. If they used it on a regular basis, it would be beyond that probably with respect to the skin response.

MR. BROWN: Well, let me object to responsiveness.

Q. Have you seen literature that has described people's use of benzene, getting it on their hands, where it would turn their skin white and chalky?

MR. SCOTT: Object to form.

A. Sure.

Q. What is the process involved with that?

A. It's called defatting of the skin.

And the -- and the difference in the questions was the routinely repeated.

MR. BROWN: Again, let me object to the nonresponsive portions.

Q. You saw where he testified that on occasions he would get lightheaded or dizzy because of the benzene vapors that he would come into contact while doing this activity, correct?

MR. SCOTT: Object to form.

A. I don't think that was his testimony. I think his testimony was nonspecific with respect to what

caused that lightheadedness.

Q. Do -- do you recall his testimony that while he was using benzene as a cleaner, he would get lightheaded?

MR. SCOTT: Object to form.

A. That's a different question.

At times he says he doesn't know what -- what the solvent was that caused the lightheadedness, and at other times, he infers that it was the benzene. That's my recollection.

Q. Let me ask you this: If somebody was using benzene to clean hands and tools for 15 minutes at a time, would the vapors be such that somebody could experience lightheaded or dizziness from that type of activity?

MR. SCOTT: Object to the form.

A. So your question is, is it possible that someone did what he says he did? On a hot day in Texas, could that cause a sufficient vapor concentration to produce dizziness if he did it for 15 to 30 minutes?

Q. I said 15 minutes.

A. It's possible.

Q. All right. And you've told me before that, from your experience, lightheadedness and dizziness can

be -- can result from 500 parts per million of exposure to benzene, correct?

MR. SCOTT: Object to the form.

A. That's not the minimum dose, but, yes, certainly it's possible --

Q. All right. Well --

A. -- at 500.

Q. What is the minimum dose that you would tell me today?

A. Well, it varies from person to person. I think it's -- 500's not a bad number. I -- I could look. I think it may even be as low as 200 to 250. It depends on the time of exposure. But for 15 minutes, that's not a bad figure.

Q. Do you agree that if a worker is feeling lightheaded or dizzy from exposure to benzene, that he's being overexposed to benzene?

MR. SCOTT: Object to the form.

A. If he knows it's exposure to benzene and during his time with it he's getting dizzy or lightheaded, he's overexposed.

Q. All right. Do you agree that if a worker is smelling benzene, that he is overexposed to it?

MR. SCOTT: Object to form.

A. If he's only working with benzene, it's more

likely than not that he's overexposed compared to the current PEL.

Q. All right. Do you have any opinion, sir, of what would be a threshold or minimum level of benzene exposure for someone to -- someone like John Thompson to develop AML?

MR. SCOTT: Object to the form.

A. What lifetime cumulative dose would be required?

Q. Or whatever metric you would use.

A. Remembering that I -- based on Irons' testimony, he didn't think there was a causal relationship between his disease and benzene, acknowledging that, but it -- for those that are known to be associated with exposure to benzene, it's generally thought that the threshold, which varies based on the person, is somewhere between 450 ppm-years and 250 to 400 ppm-years.

MR. SCOTT: Would you repeat the answer back just ...

THE WITNESS: I think I may have misspoke.

MR. SCOTT: I just want to be sure I have it right.

THE WITNESS: Yeah.

(Record read.)

THE WITNESS: No, no. It's 45 ppm-years, is what I said, to 250 ppm-years, and some up to 400 ppm-years.

MR. SCOTT: I think you did say that, but -- I think Therese took it down correctly what you said, but I --

THE WITNESS: Oh, is that right?

MR. SCOTT: -- I just wanted to be sure I heard what you said.

THE WITNESS: I'm sorry. It's 45 to 250, and some people would say 45 to 400 ppm-years.

MR. BROWN: Let me object to the nonresponsive portions of the answer.

Q. When the calculations of ppm-years and threshold levels that you've described have been made, they have been -- that has been done for AML, correct? That hasn't been done for any specific subcategory of AML; I'm correct about that?

A. Yes.

Q. And that's -- that's because, in general, epidemiological studies do not differentiate between AML subtypes, do they?

MR. SCOTT: Object to the form.

A. Well, at the time they were done, the information wasn't available.

Q. All right. Do you know of any AML subtype that is not associated with benzene exposure?

MR. SCOTT: Object to the form.

A. Well, I -- I can't give you an expert opinion on that.

Q. Okay. All right. So -- so that we're clear, the minimum or threshold limit that you are familiar with in terms of AML causation is a range of 45 ppm-years to 250 ppm-years, correct?

A. 45 ppm-years to 400.

Q. Right.

A. Paxton, I think, in one of her analyses arrives at 400, or maybe Schnatter. But if you -- if you look at the body of evidence, it's always between 45 and 400.

Q. All right. Earlier, you said 45 to 250, and then some believe it's up as high as 400?

A. That's right. That's right.

Q. What do you believe, sir?

A. I believe it's somewhere in that range.

Q. All right. It could be 45 ppm-years or it could be 400 ppm-years; you can't be more specific?

A. I think it -- what happens is because there's clear, significant differences in individual susceptibility and -- and maybe even how that 45 to 400

ppm-year dose was accumulated will influence the probability of the disease.

Q. All right. Going back to my question, can you be any more specific in your personal opinion as to what threshold limit there is that's required than saying it's in the range of 45 to 250 or 400?

A. Not as we sit here. I haven't seen a more sophisticated analysis. There may be -- there may be one that I'm not aware of, but that's -- that's what I'm aware of and still believe to be true.

Q. And this --

A. And I think Dr. Irons, interestingly, came up with the same numbers without us talking about it.

Q. All right. With regard to this range, this is an average, correct? This is an average range of numerous people put in together to come up with these numbers, correct?

MR. SCOTT: Object to form.

Q. Whatever the study was.

MR. SCOTT: Same objection.

A. I'm trying to understand your question on average range. Because it's -- it's a non sequitur. Can you give me another question?

Q. Yeah. You said yourself the differences -- there are differences in individual susceptibility?

A. Right.

Q. In other words, not every person in this world who gets a benzene disease is going to fall within this particular range, correct?

MR. SCOTT: Object to form.

Q. In the case of some individual susceptibility.

A. Oh, I would -- I would expect that -- I think -- I would -- I would like to believe, based on what I've read, that you would -- that the vast majority of people would fit in that range. It may require 400 in some people; it may require 45 in others, but it doesn't open the door to doses less than 45.

Q. Well, you said vast majority, leaving the possibilities that there's some smaller portion that might not fit into this range, correct?

MR. SCOTT: Object to form.

A. I -- of course. But there would be maybe other predisposing factors.

Q. Okay. Have you seen peer-reviewed published studies that find benzene causes AML at levels below the 45 parts per million-years level that you've described?

MR. SCOTT: Object to the form.

A. I don't think the database is strong enough

for -- for one to know that -- the dose. You'd have to have a number of cases with strong documentation that the dose was less than 45 ppm-years. I don't think such a body of evidence is there.

I don't know what the Shanghai study database provides, and it probably -- it's probably the most powerful one available today to answer that question.

Q. Okay.

MR. BROWN: Well, let me object to --

A. And I'm not trying to be evasive. I -- if you want to pitch another question, I'll try.

Q. Well, it's -- what I'm asking you, in your experience as a toxicologist --

A. Right.

Q. -- and trying to assess benzene causation on diseases, have you seen peer-reviewed published epidemiological studies that find benzene causes leukemia at levels lower than 45 parts per million-years?

MR. SCOTT: Object to the form.

A. Well, I wouldn't -- I -- I don't recall, but I wouldn't be surprised if people made that claim. I'm just saying that I believe there's not a sufficiently strong number of cases at the low doses to be able to

say with certainty that we believe the threshold's much below 45.

Q. You said you don't recall studies. Do you recall the Australian Health Watch study?

A. Sure.

Q. You know they found benzene-induced --

A. Are you talking about Glass?

Q. Glass or any of them.

A. Well, the last Glass report doesn't see any increased AML.

Q. Well, any of the -- any of the variations of the Australian --

A. Well, I mean, the -- the current -- her current view is that it -- it doesn't cause -- those doses don't cause AML, so -- and those doses aren't above -- well, less than 45 she doesn't think it's causing the disease.

Q. Have you seen any publications under the Australian Health Watch study that shows benzene causing AML at lower than 45 parts per million?

MR. SCOTT: Object to the form.

A. I believe she had an interim report where she thought that there was an increased risk.

Q. All right. Have you seen the National Cancer Institute Chinese studies by Hayes?

A. The Hayes study?

Q. Yes, sir.

THE WITNESS: H-A-Y-E-S, I believe.

A. Yes, I've seen it.

Q. It -- it finds benzene AMLs at levels below 45 parts per million, correct?

MR. SCOTT: Object to form.

A. The number of shortcomings in that claim are so well known that nobody -- not many people give it much credence.

Q. All right. Are you familiar with the Kirkleit study?

A. Nancy Kirkleit?

Q. Kirkleit.

A. How do you spell it?

Q. I believe it's K-I-R-K-L-E-I-T. Maybe there's an E in there --

A. Is it Nancy Kirkleit, the immunotoxicologist? I don't -- I don't know. I'd have to look at it.

Q. It's a study of oil field production workers who had excess AMLs at levels far below 45 parts per million. Are you familiar with that?

A. I don't think I am. What year is it?

Q. I believe it's within the last two years.

A. I haven't -- I haven't looked at it.

Q. Do you think it's --

A. I mean, I haven't looked at it, you know -- to answer your questions, I may have read it, but I haven't looked at it very carefully.

Q. What -- what studies do you rely upon to come up with your threshold requirement of 45 parts per million-years to up to 250 parts per million-years?

A. The 45 comes from OSHA's evaluation, when they set the guideline.

The 400 -- Schnatter and Paxton looked at my exposure estimate, the old one, and Kenny Crump's exposure estimate, and the one by Rinsky, and I think everyone that's -- including EPA that's looked at the three exposure analyses bracket the -- and the incidence of disease last reported by Rinsky, and they conclude that that's the range where these diseases occur.

Even if you look at my updated dose estimates, I believe that the -- the disease was seen in -- in my highest exposed group, even with the revised estimates down, and it's -- and it's well over 45 ppm-years.

It's -- in fact, I think virtually all those AMLs in the Pliofilm workers were significantly over 250 ppm-years. I haven't looked at it in a while,

but that's my recollection.

THE WITNESS: And what we mean is ppm, dash, years throughout the text.

Q. And just out of fairness for the jury, your studies of the Plio- -- reevaluations, they were funded by the API, correct?

A. As I said yesterday, the first one was virtually completely funded by the API. They asked for some financial relief, I think, on the final bill.

And then most of the second study, I -- my firm paid for.

Q. Did you get reimbursed on the second study?

A. I think I said yesterday we may have received 50 to 100,000 in support, but the study cost several fold that.

MR. BROWN: All right. Let's change our tape.

THE VIDEOGRAPHER: The time is 10:15. We are going off the record. This is the end of tape 2.

(Recess 10:15-10:26 a.m.)

THE VIDEOGRAPHER: The time is 10:26. We are back on the record. This is the beginning of tape 3.

Q. Okay. We're back on the record after a pretty decent break.

Sir, have you done any exposure -- strike that.

Have you done any quantitative exposure estimate of the lifetime benzene exposure for John Thompson?

A. I have not done that.

Q. You have not put any pencil to paper and tried to calculate what you would estimate his lifetime exposure to benzene was; is that correct?

A. Right.

Q. Have you done any quantitative exposure assessment for Mr. Thompson's exposure to benzene at any location where he would have worked or at any time in his working career?

A. I haven't -- I haven't tried to do a quantitative estimate for any segment of his career.

Q. You mentioned earlier that Ms. Sahmel -- am I pronouncing that correctly?

A. Yes.

Q. -- had prepared an exposure estimate. Am I getting that correct?

A. No. I think what I said is, she worked with Ken Unice to look at Dr. Nicas' analysis.

Q. All right. Do you have that work --

A. And as you know, I referred to that yesterday

for my estimate of what I believe the likely exposure was of Mr. Nolen, and I did the same thing for Mr. Thompson.

Q. All right. Can you show me the exposure assessment -- the -- the data that you relied upon in coming up with your critique of Dr. Nicas' exposure assessment?

A. Sure. You -- if I understand the question, you want to know the -- the numbers supporting our critique?

Q. Right.

A. Sure.

Q. In other words, in Nolen you had a report.

A. Right.

Q. We didn't have a report in this case and --

A. I have a binder of information.

Q. Okay.

A. It's -- it's right here. It's kind of big.

Q. Okay.

A. It's got all the supporting references with it. Do you want to look at it?

Q. Yes, sir. Would it be okay if we just mark that as an exhibit?

A. Wouldn't bother me at al.

Q. All right.

MR. BROWN: What are we on, 11?

THE REPORTER: 10.

MR. BROWN: Let's mark the whole notebook as Exhibit 10.

Q. Would that be how you would want to talk about it?

A. As Exhibit 10?

Q. Yeah.

A. Sure.

Q. All right. Let's do that.

(Exhibit Number 10 marked.)

THE WITNESS: If this got lost, we can reproduce it, true? Okay. Thank you.

Q. All right. What was your critique of Dr. Nicas, his numbers? What numbers did you and your staff come up with as a permissible expos- -- as a cumulative level of benzene exposure that Mr. Thompson would have had while he worked at the DuPont Sabine River Works facility and the Texas US facility?

A. As I said, we didn't come up with such a number.

Q. All right.

A. All we did is critique Nicas.

Q. All right. So --

A. We didn't -- we weren't asked to do a lifetime

cumulative dose for him.

Q. You didn't -- you didn't prepare your own numbers to determine what Mr. Thompson's exposure to benzene was during the years he worked at Sabine River Works using benzene out of 55-gallon drums, as he's described, to come up within an inhalation exposure figure?

A. True.

Q. You didn't come up with a dermal absorption figure?

A. No -- no cumulative dose due to dermal was estimated for his career.

Q. You and your staff have the ability to do that, don't you, sir?

A. Yes, sir.

Q. You've done it before, correct?

A. Sure.

Q. Do you have any understanding of why you were not asked to do that in this case?

A. No.

Q. Would it have made sense to you to do that type of work in this case?

A. Only if I was going to be offering that opinion in the affirmative.

Q. All right. So what were you asked to do with

regard to Dr. Nicas' work?

A. I was asked to comment on the validity -- the scientific validity of the methodology and the reasonableness of his conclusions.

Q. All right. Well, let's take them -- how do you have them organized there? I haven't seen your book.

A. Yeah, basically, the critique is very similar to Nolen and the -- the analyses are very similar. He made -- Dr. Nicas made a couple of differences in assumptions, which I shared in the summary sheet yesterday. And, in fact, I'll just include that here, if you'll give me a copy of that.

So I'll put that here at the beginning.

Q. All right.

A. And -- so the -- so the critique is very similar for both because he used the same methodology with very small exceptions. His number with Thompson, of course, is significantly larger with respect to total dose. He -- he predicted that the doses were -- were -- were bigger.

Q. For Mr. Thompson, Dr. Nicas' numbers were, I think, 131 parts per million inhalation; is that right?

A. Right.

Q. And was it 92 parts per million dermal?

A. Right.

Q. Do you criticize those numbers?

A. Yes, sir.

Q. And what should those numbers be, in your opinion, as an expert for the defendant in this case?

A. Well, I --

MR. SCOTT: Object to the form.

A. -- I haven't done a point-by-point analysis. My conclusions wouldn't be much different than Nolen's with respect to -- I think if you did a careful analysis, I would expect that it would come in somewhere between 1 and 10 ppm-years. That's a good broad range. I expect that's where it would come in if you did what -- an analysis that I think more likely represents what his exposures were.

Q. All right. That's your opinion is that Mr. Thompson's exposures would have been between 1 part per million-years and 10 parts per million-years?

A. Well, I haven't done the math. That's just an estimate that based on Nicas' approach and what we found to be, for lack of a better term, the ultra conservatism of his -- his approach -- and that's -- it's not even fair to say ultra conservatism. I would just say there was a lack of reasonableness in a number of his assumptions. So using our -- our gross

estimates of the overestimate of exposure, that's my best estimate as to where it would come in.

Q. And -- and your estimate is just that, an estimate based upon your subjective interpretation of what he did?

A. No. We did a quantitative overestimate -- we did a quantitative analysis of each of the key factors, and since I knew roughly what the overestimate was, based on our analysis, you can backdoor into what my estimate would likely be if I was to go ahead and go through his whole work history.

Keep in mind, Dr. Nicas didn't look at his whole history either; he focused on the -- on the plaintiff's companies -- the defendant companies in this case. He never did a lifetime analysis, which kind of surprised me.

But if I were to do it, I would do a career analysis --

Q. All right.

A. -- if I was asked to do that.

MR. BROWN: Let me object to the responsiveness.

Q. So you testified that you have done a quantitative analysis of Mr. Nicas' figures?

A. Yes.

Q. And you have criticisms of Mr. -- Dr. Nicas' figures, correct?

A. I do.

Q. Let's talk about each one of your criticisms in -- in the order that you would care to talk about them.

A. Okay.

THE WITNESS: Maybe the best thing -- could I have the Nolen report? That might be a good way to do it.

Thanks.

A. All right.

Q. Now, you're looking at your report from the Richard Nolen case?

A. Actually, I've got a separate critique of -- of Thompson as well. That might be the fastest way to do it.

Q. Whatever way, I just want to make sure we're talking about Thompson and not Nolen.

A. Yeah, let's talk about Thompson. You know, for sake -- do you want it read into the record? Because it's kind of clear from here.

Q. Well, what I would like to do -- is this the --

A. Do you want a summary critique, maybe, to

begin?

Q. Well, let's do this: Let's mark -- what is that right there that you've got?

A. This is a review of the exposure estimates of Dr. Nicas for Mr. Thompson.

Q. Okay. Let's mark that as Exhibit 11.

Is that in your notebook, Number 10?

A. No.

Q. All right.

A. I don't think it is.

(Exhibit Number 11 marked.)

A. These are more the in-depth backup for the comments.

Q. So 11 would be a summary of the stuff in 10?

A. I think so.

Q. Is it -- and is it an accurate summary? Have you compared it to what you've got there?

A. I'm pretty sure. I haven't done a real, real careful comparison, but conceptually, it's very close.

Q. All right. And let's just start the first point, and let's talk about on the record why it is you think is -- Dr. Nicas has made some type of error in his calculation.

And before we start, what methodology did Dr. Nicas use in coming up with his estimates? Is

there a title that you can put on it?

A. I think he'd probably call it an analysis of likely near-field concentrations.

Q. All right. Is that an accepted methodology for evaluating worker exposures to benzene while cleaning tools?

A. If done correctly, I think it would yield reasonable estimates.

Q. You -- you, yourself, and your company uses that same model to -- or would you use that same model to come up with a dose estimate for Mr. Thompson?

A. We'd probably use that model with different assumptions and probably compare it against one or two other models as well. We've done that in the past.

Q. All right. The method -- or the model that Dr. Nicas has used, is it a scientifically valid and accepted model of modeling, the only difference you have is the input data that he's put into the -- the various variables of the equation; is that right?

MR. SCOTT: Object to form.

A. Yeah, in -- in large measure, I'd agree with that, uh-huh.

Q. Okay. Let's go over where you say, as an expert for the defendant, Dr. Nicas has made an error in the use of this accepted model.

A. Yeah. I would like to look at the Nolen report as well. It -- I'm trying to think about how the easiest way to do this is.

THE WITNESS: Thanks.

A. I'm going to refer to the Nolen report because I think it's the easiest way to answer your question, looking at page 26.

Q. All right.

MR. BROWN: Let's mark the Nolen report as Exhibit 12 so that we can --

(Exhibit Number 12 marked.)

Q. And just for the benefit of me and the jury, why is it you're using the Nolen report? Is it the -- the same outline or --

A. It's the same out- -- it's --

Q. They were different --

A. -- it covers the same issues.

Q. Okay.

A. And it's such -- it's such a technically -- you can make it a technically complicated topic, and I want to make it such that it's very clear to you and the jury as to what my beliefs are about the shortcomings in his approach.

Q. Okay. So -- but the numbers are different in Nolen, so -- than they were in Thompson?

A. But the methods --

Q. Okay.

A. -- that he used --

Q. I gotcha.

A. -- and the input parameters are -- that are problematic are different.

Q. And you've got those --

A. Are the same, rather.

Q. You've got the methodology already put into a -- a format that you would want to discuss from the Nolen case, and there would be no difference in the methodologies?

A. Yeah, pretty much.

Q. Okay. That -- that explains why --

A. Yeah. And I would just tell you, the differences -- the -- the size of the near-field radius is different, for instance, between Nolen and Thompson. He used 2.5 in Nolen and 3.25 in Thompson.

Q. All right. What do you say should have been used as --

A. And then the -- the length -- the average length of the exposure event is 22.5 minutes in Nolen it's 17.5 in Thompson. The number of events is 976 in Nolen and 1189 in Thompson.

And the generation rate is quite a bit

different. The range in Nolen is 17 -- 17,000 to 30,000 milligrams per minute, whereas in Thompson it's 118,000 milligrams per minute. His dermal dose is quite a bit higher in Nolen. He has a dermal-to-inhalation ratio of 2.3 in Nolen and 0.7 in Thompson.

Q. All right. Let's talk about just Thompson. What near-field radius do you say should have been used?

A. I don't have a big problem with either 2.5 or 3.25.

Q. All right. So for Thompson, you say 3.25?

A. I don't -- I'm not going to take issue with him on that.

Q. All right.

A. It's not a big -- it's not a big deal to me. It -- 2.5 is probably more accurate, but I don't think it's -- it's not the swing vote here.

Q. All right. First of all, you -- that's not a basis of your criticism that he's at 3.25 for Thompson of his --

A. No. I just am making note of it. I --

Q. Why do you say that you think 2.5 for Thompson would be more accurate?

A. I'd -- I would have to look at the body of

evidence in the literature, but my recollection is that more scientists used 2.5 than 3.25. But, again, it's in the ballpark.

Q. Okay.

A. That's not going to make any difference compared to these other factors.

Q. All right. What's the next factor that we -- I couldn't write it down as fast as you were laying them out there, and I don't have it in front of me. What's the next factor you're --

A. Well, I don't know what the next one was, but the length of the event, one was 22.5 minutes -- would you like your own copy?

Q. Well, it might be helpful if we had -- that way we can go over -- because --

A. Yeah. Okay.

Q. All right.

A. There you go. Just take this one. Okay.

Q. All right.

A. Do you want to talk about length, maybe, of each event?

Q. Well, the near-field radius -- where was that on here?

A. It's down --

Q. It's down -- okay. You didn't talk about them

in order?

A. Right.

Q. I see.

Let's look at -- let's look at them in the order that you have them there for Mr. Thompson.

Airborne benzene concentration?

A. See, that's the end result.

Q. Okay. So --

A. Or the -- that comes from the other factors --

Q. Okay.

A. -- so I don't think it's -- that's not a good place to start.

The place to start would be the number of events --

Q. Number of --

A. -- because that's an input factor.

Q. Number of events.

And that's a number of different episodes where he would have had exposure to benzene as described from washing his tools; is that correct?

A. Based on his testimony.

Q. All right. And the number of events for Thompson is 1,189, and you're critical of that number?

A. I don't feel like being critical of these numbers.

Q. Well, what --

A. Because they're -- those are facts in the case, as -- as expressed in the deposition, so I can't say they're wrong. So they are what they are, as you would say.

Q. All right. So --

A. No -- no -- no issue there because that's -- that's -- that's the cards we're dealt.

Q. All right. And -- and your figures that say -- or your opinions that say Mr. Nicas overestimated Mr. Thompson's exposure have nothing to do with, then -- as I understand your testimony, with the number of events or the near-field radius; is that correct?

A. Well, he can claim he read it the way he did. I -- I -- I read it to be different, okay? If you want to know that specifically, it's at the bottom.

I think that Nolen probably had, based on his testimony, 732 days of tool cleaning with benzene, with 33 percent of the days having two cleaning events, based on his testimony, and then 1160 events of a tool cleaning with benzene, with 29 events of scaffold cleaning with benzene.

Q. All right. Do you know how for the Thompson -- and all I'm interested in today is

Thompson --

A. Yeah.

Q. -- for -- in terms of these exposure issues.

Thompson, 1160 plus 29, how did -- how did you -- how was that number derived; do you know?

A. It was based on the deposition.

Q. Do you -- and do you know, based on the deposition, how somebody said, okay, there's 1160 events?

A. Oh, yeah. Yeah. It's -- it's -- it's well described. It would take us a while to go through that. You mean you want to know exactly how Mark came up with that number?

Q. I'm just trying to figure out --

A. Yeah.

Q. -- how you came up --

A. Well, no, it's --

Q. -- why you're -- I'm just trying to figure out how -- how it is and why it is that you say Dr. Nicas' exposure estimates are different and overestimate Mr. Thompson's exposure.

A. Uh-huh. Nicas assumed Mr. Thompson worked for 24 months at DuPont. Based on his testimony and Social Security records, the actual duration of employment is more like nine to 10 months. So if you want to go

back, which I didn't do, and get that right, I would -- you'd have to go through that calculation.

Q. All right. So --

A. So his -- my criticism is he's got the duration of time at DuPont incorrectly --

Q. All right. And it's based on --

A. -- calculated.

Q. -- it's based on John Thompson's testimony and his Social Security records. Anything else?

A. That's all I have, I think, on his duration of time at the -- at the plant.

Q. You saw his testimony where he testified I worked -- he worked there from '66 through '68, correct?

A. I'm just telling you, by looking at his testimony carefully and his Social Security records, it looks like it's closer to nine to 10 months of actual contact.

Q. Did you see anywhere where John Thompson testified he only worked at the Sabine River Works facility for nine to 10 months?

MR. SCOTT: Object to the form.

A. You're asking me for the -- for the actual lines from his deposition?

Q. Sir, I'll represent to you I've read his

deposition. I took his deposition. I don't recall him saying that ever in his deposition. And I don't want you looking for something that I believe's not there. I'm just saying --

A. No, I'm telling you, I -- that during the journey of looking at Nicas' work, we believe that that's a -- that our estimated is more accurate, based on his own deposition and the Social Security records.

Q. All right. Did you also see in his Social Security records where it listed his employment from 1972 on as self-employed?

A. Yes.

Q. And you know that's not accurate, correct?

A. Are you putting into question the Social Security records?

Q. I'm just saying, you -- you said you relied upon the --

A. Well, you know, self-employment records are -- when you're talking about self-employment Social Security, they're historically known to be not accurate. When you're talking about getting a payroll, those are thought to be very accurate.

MR. BROWN: Well, let me object to responsiveness.

Q. Your basis for the difference between Nicas'

number and the number of events is Mr. Thompson's testimony --

A. And his Social Security --

Q. -- and his Social Security records?

A. That's right.

Q. I'll represent to you that nowhere did I see in his testimony that he said, I worked at DuPont Sabine River Works for nine to 10 months.

Do you -- do you have a specific recollection that he testified to that?

MR. SCOTT: Object to the form.

A. All I can tell you is in nearly 20 years of doing this work, people's testimonies frequently don't match the facts of the case, and the Social Security records rarely have a mistake in them, and, therefore, I have to believe the objective data from Social Security, based on my experience, is usually more dependable than a person's recollection.

Q. All right.

MR. BROWN: Let me object to responsiveness.

Q. You also know --

A. You and I can differ on that. That's my opinion.

Q. I agree.

A. There's no sense arguing about it.

Q. I'm not -- I don't want to argue with you.

You agree that Social Security records are inaccurate in many instances?

A. Especially in self-employment.

Q. Right.

A. Not so often when there's a paycheck.

Q. All right. When he was getting a paycheck from the Deweyville Independent School District from '72 on, you would expect that if they were accurate, they would have listed him like he was getting a paycheck in his prior history, but instead they reported it as self-employment. That's not accurate, is it, sir?

MR. SCOTT: Object to the form of the question.

A. I don't know. I haven't looked at that.

Q. All right. Any other basis for this number of events deal, other than what you've described?

A. Well, I could -- I could professionally question whether or not one would have been likely to do one or two tool cleanings a day on the number of days that he said he did it, but that would be my professional opinion.

Q. That would just be speculation because you

don't know, correct?

MR. SCOTT: Object to the form of the question.

A. I just said, it's -- it would be my opinion. That's all. I don't --

Q. Any facts that you have to say he did it -- he didn't do it two times a day?

A. I don't have any facts, no.

Q. Okay. Do you know what mastic tar is?

A. Mastic?

Q. Black mastic tar that was used --

A. Oh, black mastic tar. Yes, sir, I do know.

Q. Is that a sticky substance?

A. Oh, yes.

Q. Have you seen it applied in plants with insulation where they're building --

A. Absolutely.

Q. It gets all over everything, doesn't it?

A. Well, you try not to, but it -- depending on the applicator, it can get all over everything.

Q. Hard to get off without a solvent, correct?

A. He didn't do that.

MR. BROWN: Let me object to responsiveness.

Q. If you were trying to get black mastic tar off

of yourself or your tools or your clothes or your equipment, it would be hard to get off with soap and water, correct?

A. Oh, it doesn't come off with soap and water. I've done it, so --

Q. You need a solvent?

A. You do, indeed.

Q. Is there a solvent, to your knowledge, better for that process than benzene?

A. I've never tried it with benzene, so I can't tell you. But I -- there's a lot of solvents that work.

Q. Benzene was an excellent solvent, wasn't it?

MR. SCOTT: Object to form.

A. Depending on the -- on what you're solublizing, it can be very good.

Q. All right. Any more discussion about the number of events that you attribute to Mr. Thompson and your criticisms of Dr. Nicas on this issue, other than what we have described?

A. No.

Q. Okay.

A. I think if you -- if I was ever asked to do a workup, I can give you the specifics of the bases for that view beyond what I've said.

Q. But initially you told me no big problem with these numbers as they exist --

A. Based on -- based on him. It's a big problem -- it's not a big problem; it's a factor of two, okay? And they're so -- the other factors -- that's why I said it wasn't a big problem. We're only talking about a factor of two here. There are other times where the factor is much larger. You'll see it's a factor of two in my tab 7, okay, of Exhibit 10.

Q. All right.

A. That's page 17, for your benefit.

Q. Okay. And then what's the next issue that you say -- you take issue with with Dr. Nicas and his estimates of Mr. Thompson's exposures at the DuPont Sabine River Works facility or at the Texas US Chemical facility?

A. Okay. I'll take them in order of the tabs in Exhibit 10.

The first one is, we evaluated his calculations of the 99 percentile on wind speed, and --

Q. All right. That's one we didn't talk about yet.

A. No. It -- it's better, I think, to work off Exhibit 10.

So his wind speed is -- I would have to

say is very low.

Q. His wind speed is what?

A. Well, of course, it varies. It's a distribution. But he -- he has wind speeds varying from in the 50s -- feet per minute up to -- up to 176 feet per minute.

Q. And what is --

A. But his harmonic mean is 52 feet per minute. It's the best, probably, descriptor. You would expect that the wind speeds would be significantly greater than that.

Q. What did you, in your calculations --

A. What would I pick?

Q. -- come up with?

Yes.

A. Well, I like 5 miles per hour. That's the one the government seems to like, and -- let me tell you what page that's on.

On page 9 of Exhibit 10, which is -- we put in Table 4.1 -- like I said, his arithmetic mean, using a GSD of 3, was 176. And if you use 5 miles per hour with a geometric standard deviation of 2, it's 440 feet per minute. The harmonic mean is -- is markedly different, and that's -- at 5 miles per hour, harmonic mean is 82 -- well, that's probably not so helpful --

80 -- I'll just say 3.09 miles per hour. He's got 0.6 that he's using.

Q. All right.

A. So you're talking about a -- roughly a factor of at least five differences.

Q. Where did you --

A. And that's -- and that's a good. If I was going to say what my summary view is on wind speed, I would probably select a value that's five times greater than what he selected.

Q. You select 5 miles per hour for your calculations?

A. I haven't done the calculation. I'm telling you, if -- if I was to do it, I would certainly weigh in at something close to 5 miles per hour.

Q. And you said the government likes that. What is the source of --

A. It's in their -- their guidance, which is described here in Nolen. The title page is missing. It's in my tab -- it's under US EPA 2006 as well as --

THE WITNESS: Have you got that handy?

A. I think that's the right reference is EPA 2006.

Q. What particular page or anything can you point me to?

A. Oh.

Q. I mean --

A. Okay. Hold on. I didn't tab that particular page. Let's see here.

Q. What is it -- what is the calculation entitled under the EPA 2006?

A. Well, it's -- it's in the 2004 ASTM document, which is a little easier, probably, cite.

The default air speed for site risk-based corrective action is 5 miles per hour. I also believe it's cited in the EPA document. But maybe the easiest one to find is ASTM 2004.

Q. And 5 miles per hour, 10 meters above the ground; is that correct?

A. No. I'd have to go back and look, but I think that's their best estimate for ground level because that has to do with distribution of dust at the ground surface. So it's not 10 meters.

Q. Does it -- does it consider obstructions or buildings or anything like that?

A. No, I don't think it does. You'd have to correct -- make additional corrections for that.

Q. All right. Is that what -- when you were referencing the EPA section yesterday and you said if there were buildings or structures involved, that would

be obstructions that this wouldn't -- that model would not apply or that factor would not apply?

A. It was a different reference. I was referring to ISCLT model -- there's a -- there's an option in that model for accounting for buildings, and -- and then there's all kinds of variations on that model for accounting for buildings.

Q. All right. You saw -- you saw Mr. Thompson's testimony --

A. I mean, Nicas doesn't talk about that at all. He doesn't consider any of that.

Q. All right. You saw Mr. Thompson's testimony where he testified that when he would do these cleanings, he would do it adjacent to their contractors' shack or under vessels or even inside of his shack, correct?

A. Well, there's all kinds of discussions about where that happened, so -- I think it's a reasonable assumption that it's nowhere near what Dr. Nicas chose and that it's five -- at least five times higher, could even be 10.

Q. And it's based on this EPA factor of 5 miles per hour?

A. EPA and ASTM both. But it's -- it's a long discussion that you're welcome -- that I've provided

you. But that's a summary view.

Q. And that's on page 19 of your notebook?

A. Yeah. Yeah.

Q. All right. All right. Is there anything else about wind speed that you think's inaccurate about Dr. Nicas' opinion?

A. No. I'm telling you, it's -- it's probably five or tenfold too low. That's a -- just a good approximator.

Q. All right. And -- and so the higher the wind speed, the less ppms, correct --

A. Yes.

Q. -- that Mr. Thompson would be getting exposed to?

A. Well, there's another component to that. When you're outdoors, it's more than just being outdoors. The model falls apart, in large measure, because you don't have -- you don't have the opportunity for uniform distribution of the point source vapors when you're outdoors. It's there, but it's quickly minimized by the directionality of outdoor winds.

Q. And you've used this same model for a calculation of outdoor exposures, correct?

A. I did not -- I would not have used his model for doing that, not for outdoors.

Q. Have you ever --

A. I mean, you could if it's done right, but I -- I wouldn't -- I probably wouldn't do it. I would use another approach for outdoors.

Q. What -- what approach would you use for outdoors?

A. I would use EPA's approach for dealing with outdoor distribution of dust and vapors.

Q. What is that approach? Can you --

A. You mean, like what's the cite of it?

Q. Yes, sir.

A. Well, there's a number of places you can cite it. It's -- it's in their air pollution -- how you calculate the distribution of vapors and dust in the outdoor environment.

I think it's discussed in AP 42. I think it's discussed in their site corrective action document. I have it in here as well.

Q. But --

A. But it's a number of places that -- that you do it. But you -- it's a totally different -- he -- I think he took his -- his indoor near-field model, okay, basically an industrial hygiene model, and tried to -- to get it to work in the outdoor environment. He talks about it and how he mentions it in his paper.

And then he -- you know, it was a long discussion with Mr. Scott about how he thinks it's validated by comparing it against my Liquid Wrench study and the fact that I did some outdoor sampling and that they paired up. What he didn't mention is that was a -- a very rare day, and I intentionally selected a day where there was no perceptible wind in the outdoor environment.

At that point, then, the model could properly estimate the near-field environment because it's not that much different than outdoors -- or indoors when it's -- when there's no air movement, virtually still air.

But when you get real outdoor environment, that model comes apart. It's not meant for that.

Q. All right. But you said you would have used the air pollution model AP 42 used by the EPA?

A. I would just use one of the several outdoor models. There's a number to choose from.

Q. But that's the model that you said yesterday that if there were obstructions --

A. No, it's different, again.

Q. Let me -- let me just ask you, did you not say that yesterday, that AP 42 would not be applicable if --

A. Well, AP 42 is a big --

THE WITNESS: Sorry. What do you have?

(Record read.)

Q. -- if there were obstructions?

A. No, I didn't say that.

Q. All right.

A. What I said was, obstructions would -- would alter how you would estimate the velocities at ground level if there was a number of buildings.

Okay. So -- so you're not confused in any way, AP 42 is a big book, okay? ISCLT is a model that's used by EPA for point source. There's also things like the cow herd model, which is a nickname for a model for outdoor environment, air modeling. There's a number of models that are available, they're all very similar, for doing outdoor air exposure estimates.

I don't think Nicas' indoor air model, near-field model, is easily applicable to the outdoor environment. It's that simple. It could be modified to be, but it's not easily used. It's much more preferable, in my view, to use other approaches that are more traditional.

Q. All right.

MR. BROWN: Let me object to responsiveness.

Q. All right. Anything else about wind speed that you would criticize or have issue with with regard to Dr. Nicas' report?

A. Well, it's -- this is one you have, so -- this just adds more information. But on page 6 of the critique on Thompson, I talk about the -- the sources of information about how to find appropriate indoor air speeds, and they all are markedly less than the outdoor environment.

As I said, if you look at the -- that body of information, you're going to say that he underestimated out -- underestimated the velocities by a factor of five to 10. That's just the best thing to say.

And the ASTM risk-based corrective action document, as well as the EPA document, and I think the cow herd model as well, will all point you in the same direction for how to do it properly.

Q. All right. All of those models, you say, are properly used?

A. If they're properly used.

Q. And those would be proper and scientifically accepted as reliable to determine air speeds as it would apply to Mr. Thompson's use of benzene in a refinery -- or a chemical plant?

A. They talk about, actually, a model and air speeds, but mostly a methodological approach. They also cite some velocities.

Q. All right.

MR. BROWN: And let's mark that as --

A. I think -- I think we already have.

Q. What is that?

A. It's 11. It's Exhibit 11. Right here.

Q. All right.

A. All right. So let's go --

Q. What page were you referring to on Exhibit 11?

A. Page 6.

Q. Okay.

A. All right. So let's go on to the next one.

All right. The second tab also talks about the -- the probability -- cumulative probabilities that he used, that is the Monte Carlo technique and the statistical analysis of how to treat wind speed, and it's self-descriptive. That's -- that's all I can tell you.

We -- we would have done a different -- used a different probability weighting for trying to estimate the -- the distribution of wind speeds.

Q. What would you have done?

A. It's -- it's well described here.

Q. On page 4 of your notebook there?

A. Yeah, 4 and 5.

Q. All right.

A. And the supporting tabs.

All right. Let's go on to -- just to get you done in time, let's just go through each of them.

Q. Well, we've done near-field radius?

A. We've talked about near-field radius.

Q. Number of events?

A. Number of events.

Q. Wind speed --

A. Wind speed.

Q. -- and harmonic mean. There's nothing else we need to add -- or you need to add about your criticisms of Nicas' report on that issue; is that right?

A. I don't have anything else to say about that.

Q. All right. Length of event, have we talked about that one yet?

A. We should. I -- it's -- it's not something that I've quantitatively addressed, but I'll give -- I'll just tell you what the -- what I think the problem is on it.

I -- having witnessed many craftsmen cleaning tools over the years, including those that dealt with mastic-like materials, I'm not -- in my

experience, I think this is an excessively long amount of time to clean tools where you're physically engaged with the liquid. That's my professional opinion. And --

Q. So --

A. -- having cleaned tools myself many times, it doesn't take that long to -- to clean a reasonable number of tools off.

In fact, it's curious in the deposition, he never mentions what kind of tools he's cleaning. In his craft, there aren't many tools involved, and they certainly don't need to get very dirty, based on the way he -- he described his jobs.

MR. BROWN: Well, let me object to the nonresponsive portion.

Q. What you're saying is that you don't believe Mr. Thompson's testimony that he cleaned tools on average for 17.5 minutes. That's really what you're saying, correct?

MR. SCOTT: Object to the form.

A. I -- I found it long -- it didn't make sense to me professionally. That's all I'm telling you.

Q. All right.

A. Okay. And I've -- having looked at hundreds, if not thousands, of depositions and then compared it

against my simulation studies -- in other words, when I've done it myself, the -- the time is markedly different, usually. That's all I can tell you is -- is I differ with his recollection on the time it took him to clean the tools. I'm not going to make that a big issue in this case.

Q. You could clean your tools faster than Mr. Thompson could, apparently. Really, is that what -- that's really all you're saying?

MR. SCOTT: Object to form.

A. No. I'm really saying that there's other things in his recollection that make you wonder about the quality of his recollection. I'm just saying that it's unlikely that he -- he needed that much time, at least intimately interacting with solvent to clean those tools. That's all I can tell you.

Q. Let me just ask you --

A. With respect --

Q. Is he -- do you think Mr. Thompson's lying about the time he spent cleaning tools?

A. Absolutely not.

MR. SCOTT: Object to form.

A. Absolutely not.

Q. All right. Do you think that he just don't know what the heck he's talking about when he said, I

used them on average for --

A. Absolutely not.

Q. Okay. All right.

A. I'm -- I'm questioning his memory.

Q. Do you think that Mr. -- Dr. Nicas' use of this 17.5-minute length of event is inconsistent with the testimony provided by John Thompson?

A. No, sir.

Q. All right. What's the next subject that you differ with Dr. Nicas?

A. I -- I mention here, as I've mentioned before, in tab 3 the basis for the -- my belief that he's using indoor wind speeds, relying on them more than he is outdoor speeds.

Q. What --

A. That's in Exhibit 10.

Q. What parameter are you on?

A. I'm on indoor versus outdoor speed again.

Q. Wind speeds again. Okay.

A. Yeah. Okay?

That's all I have to say about that.

Q. All right. The next one I have on this parameter list that you provided me was generation rate.

A. Well, that's a good one. Let's talk about

that.

Q. Tell me what your criticisms are of Dr. Nicas' generation rate that he used for Mr. Thompson.

A. Well, he bases it on his best understanding of what was discussed in the testimony, okay?

Q. Is his estimate factually inconsistent with the testimony provided by Mr. Thompson?

A. I have to think about how to answer that. It's consistent with what -- how Dr. Nicas interpreted Thompson's testimony.

Q. All right.

A. Okay.

Q. It's consistent the way he interpreted it?

A. It's not inconsistent.

Q. Okay.

A. Okay. Now --

Q. What are your -- what are your criticisms, then, of Dr. Nicas?

A. The criticisms are that the volatility of that material is not nearly as great, based on the conditions of use, as he has described. In other words, it doesn't volatize out of the pail at the rate that he's predicting. I don't believe it did.

Q. What do you base that on?

A. Yeah. Well, I base it on not having carefully

evaluated the reasonableness of the -- of the loss rate as described by Thompson. You see, that's the difference. You have to really think about whether Thompson's claims are reasonable based on the characteristics of benzene.

Q. What I'm asking for, Dr. Paustenbach, is, tell me today, as clear as you're going to tell the jury, why it is that the generation rate used by Dr. Nicas for Mr. Thompson is inaccurate. Tell me all the reasons that you think it's not correct in terms of it overestimates the volatility of the benzene.

A. Well, if -- if -- if he would have gone back -- let's just say you go back and Dr. Nicas would have even gotten a half a pail of benzene at some reasonable temperature and measured the loss rate over 17 minutes due to volatilization, he would have readily seen that his model or his approach wouldn't be right. That's -- I believe that.

Q. All right. Have you done that?

A. Not yet.

Q. All right. Never in your history have you done that or anybody that works with you to measure --

A. Well, I've worked with benzene enough to know what the loss rate you'd expect roughly in 17 minutes, and it isn't 25 percent of a bucket.

Q. What is your estimate?

A. Oh, I don't know. I haven't -- I haven't done it, but it's not going to be anything like that. I mean, his estimate -- I can tell you this -- let's look at tab -- tab 6.

Nicas assumed that -- this is on page 14 -- he assumes 0.625 gallons -- gallons evaporated in 17 minutes of tool washing, okay?

Q. Evaporated or lost?

A. Evaporated.

Q. Okay.

A. And if -- if you were to look at -- and I'll just give you -- on page 6-1, known loss rates, this would be in the vicinity of -- not -- not even in the vicinity.

But if you were to manually brush with -- with something like benzene, you would -- you would not still get to the same loss rate that he assumed out of a bucket, which, as we talked about yesterday, has a limited ability to infinitely lose at a given rate the vapor, volatilize the benzene, because of the head space. You -- you have to account for the height of the head space to get a proper emanation rate. And his numbers are more akin to when you have no inhibition and you have open volatilization of the chemical.

I'm just telling you that -- and, therefore, that loss rate, I think, is overestimated by a factor of five or 10 easily.

Q. All right. Anything else that you would tell the jury in terms of criticism of what Dr. Nicas' generation rate was or his calculation or the number he comes up with?

A. Well, I'd just say I think it's unreasonably high, based on what I've said.

Q. And -- and I understand you're saying that. But what I'm asking is, are you going to tell the jury anything else about the basis for your opinion that it's unreasonably high?

A. You could mathematically derive it properly using -- considering the walls of the bucket and the velocities over the bucket. That's one approach. You could model it. You could measure it, as I said. I could actually just get a bucket of benzene and look at it that way. I could do it with a little bit of agitation and -- and also measure the loss. Or I can compare it to known studies where they use volatile solvents in a thin film, which is the maximum way to get volatilization, and look at that.

I also -- I realize -- I've read his response to Mr. Scott's questioning on that, and I'm --

I'm aware of how he -- he feels about its reasonableness. I just don't happen to agree with the way he looked at it.

Q. All right. When you're talking about agitating the surface of the benzene, does that increase the volatility of it?

A. It doesn't -- it doesn't increase the volatility; it increases the emanation rate, or the loss rate.

Q. All right.

A. I mean, in a volatility --

Q. I understand.

A. Vapor pressure is defined as something --

Q. It increases the loss rate?

A. It does increase the loss rate.

Q. And the models that you use and rely upon, does it consider an agitated surface area or a --

A. I would -- I would consider that. I mean, you can't -- you can't -- and I have considered it, since you can't create an environment that's more volatile, if you will, than -- than so-called brushing of a solvent.

Q. All right.

A. Okay?

All right. Let's -- do you want to --

THE WITNESS: How far are we into this? Is it a good time for taking five minutes?

THE VIDEOGRAPHER: We have six minutes on the tape, so --

THE WITNESS: Let's use up the last six minutes of the tape, then, and then we'll take a break at the end of the tape.

Q. All right.

A. Let's see.

Q. The next one I have on this list is ratio of dermal to inhalation. Is that --

A. That's not a bad one to talk about.

Q. What are your criticisms of Dr. Nicas' opinion as he calculated that for Mr. Thompson?

A. Well, the primary -- that's several layers of criticism. One is, I don't believe that one can keep their hands submerged in benzene for 17 minutes a day once or twice a day. So that's number 1. I mean, that's the number 1 driver.

Number 2, I don't think it was benzene. And the testimony, to me, cannot clearly show it was benzene. I mean, he's got a -- not -- not always clearly show it's benzene.

Q. Wait a minute. He says he got benzene out of a barrel that was marked benzene.

A. Right. And in certain cases, that's right, and other times, he -- he acknowledges he uses other cleaners as well.

Q. No. When he's talking at DuPont Sabine River Works, he says, I went to a barrel of benzene with -- and it was marked 55-gallon drum of benzene.

A. I got the wrong one.

He -- he did say that.

Q. Okay.

A. But he also said -- no, wait. I have to go back and look.

My recollection was he also talked about using other cleaning agents for the tools, other than benzene, in that location, but it's not in my summary. I'll have to go back and -- are you stipulating he doesn't say -- he doesn't refer to --

Q. I -- I recall him saying that about his work in the oil field.

A. Hm. I -- I can go back and look. I know he did say he did go to a drum and was told it was benzene and took the -- took the cleaner out.

Q. All right. Additionally, you said you don't think that a worker could wash his hands in --

A. Clear benzene.

Q. -- keep his hands in -- keep his hands

submerged in benzene for 17 minutes.

A. Straight 17 minutes once or twice a day, I think that's unlikely.

Q. Where did you get that he had his hands just set down in a bucket of benzene submerged for 17 minutes?

A. Well, that's virtually what Nicas assumes in his calculations.

Q. Well, he -- Mr. Thompson testified he used benzene at varying levels from as short as five minutes to up to 30 minutes, but on average, I would assume it would be a 17.5-minute average during these cleaning episodes and that he would be using it as a cleaner. He wouldn't be -- you didn't see any testimony that I just kept my hands stuck down in the bucket for -- for 17 minutes, did you, sir?

MR. SCOTT: Object to the form.

A. Actually, I would agree with you.

Q. All right. And do you criticize -- do you say that Dr. Nicas' calculations are based on that assumption?

A. He's got -- he's got time spent with his hands in the benzene, yes, sir.

Q. Or is the benzene on his hands?

A. I happen to agree with you, it's not

necessary. You could clean your tools for a considerable period of time and only be exposed to the vapors. That -- I won't differ with that.

Q. Well, there's a difference --

A. My -- my other problem with DuPont and the use of benzene is, in that facility, based on their knowledge of benzene, it's almost unfathomable for me in that time period for them to be allowing a contractor to use pure benzene in this way. It's unfathomable, based on the long history of safety programs at DuPont and the enforcement.

As you know, for decades, it was considered the model firm and, in fact, was the prototype by which all other programs were -- were compared.

So among -- A, I don't think it's physiologically like -- or from a compatibility with the skin standpoint, I think it's unlikely that he had the dermal contact that Dr. Nicas suggested. I don't think it's likely that he used benzene pure. I don't think he got the benzene at DuPont out of a drum and -- and used it in that manner with them being aware of it. I -- he would have to have done it without their knowledge, based on my knowledge of that company at that time and their knowledge of benzene.

MR. BROWN: All right. Let me object to responsiveness.

Q. So you're just saying Mr. -- Mr. Thompson is not telling the truth. That's all your testimony is, is you don't believe what he says, correct?

MR. SCOTT: Objection.

A. I think that it's possible his memory isn't -- isn't as strong -- it's just not consistent with what I know about benzene, DuPont, tool cleaning, and the toxicology of benzene from an inhalation standpoint or dermal contact. That's all I can tell you.

MR. BROWN: Let me object to responsiveness.

Let's change the tape and take a break.

THE VIDEOGRAPHER: The time is -- sir.

The time is 11:24. We are going off the record. This is the end of tape 3.

(Recess 11:24-11:45 a.m.)

THE VIDEOGRAPHER: The time is 11:45. We are back on the record. This is the beginning of tape 4.

Q. All right. We were talking about your criticism of Dr. Nicas' report. And we left off after our discussion about generation rate.

A. Is that where we ended?

Q. Well, I mean, that's what I recalled.

A. Okay. I thought we started to begin on dermal.

Q. Okay. Yeah, the -- the ratio of the dermal inhalation.

A. Yeah.

Q. We had begun that. Thank you.

A. Yeah. And to supplement what I said previously, when you and I had a difference of recollection of his deposition -- and it looks like we're both right -- it is true at times he said he got benzene from drums. The reason I questioned whether he knew it was benzene or not is he also says that he used benzene to clean tools during his entire employment at this location, but he never read the writing or labels on the barrels. That's on page 121 and 122 of his deposition. So that's why I said there was a lack of clarity whether he knew he was drawing from a benzene drum or not, because my impression was, he was basing it on what he was told was in the drums.

The record speaks for itself on that, but -- and another time, he makes it sound like he -- he knew it was benzene in the drums, so I -- it, I think, is a -- it's just unclear.

Q. All right.

MR. BROWN: Let me object to responsiveness.

A. Okay. So do you want to go back? It is what it is.

Q. Let's go to the --

A. But that's why I thought that he was not sure he was using benzene all the time.

MR. BROWN: The same objection.

A. Okay.

Q. Let's go to the ratio of dermal -- we have begun that --

A. Yes.

Q. -- how is Dr. Nicas inaccurate in his calculations of Mr. Thompson's dermal exposures?

A. Okay. So as you and I also discussed, Thompson does not say that he kept his hands in benzene for 20 minutes. I agree with -- I agree with you.

My understanding of Dr. Nicas' work is that he assumes that both hands are generally in the benzene, and -- and his calculations follow from that, and so, therefore, I would take issue with that, for -- for the reasons I mentioned previously.

Two hands aren't needed anyway because, as I said before, if it -- let's say a pipe wrench. Most people would hold the handle of the pipe wrench and

then take a brush and put it in the solvent and brush it a little bit and get it off, not needing to put either hand into the -- into the bucket, especially if it's a -- if it's a defatting agent, as he knew it was. And then you dry it off, and if you need to clean the handle, then you take the clean new end of the pipe wrench, put it in with a brush, again, not having to immerse either hand, and clean that and then lay it -- lay it down to be air dried.

So that's -- I take issue with the -- with the assumption of both hands being immersed, even one hand being immersed. I don't think it's necessary. And I believe it was unlikely to have occurred, certainly for -- for 20 or 30 minutes a day, once or twice a day, 20 days per month for a period of 29 months. I think -- I just don't think that's consistent with the record at DuPont.

Now, with respect to how do you estimate the dermal uptake rate --

Q. Before you do that --

A. Yes.

Q. I'll save that for a second.

MR. BROWN: Let me object to responsiveness.

Q. Is it your understanding that Dr. Nicas had

the impression that Mr. Thompson had his hands soaking in a bucket of benzene for 17 minutes, or was it, rather, he would use the benzene, and it would stay on his hands while cleaning these tools for the 17.5-minute average?

A. That's a good point. With re- -- hold on here.

In his deposition, he said that he believed that the benzene would evaporate very quickly off the skin once you expose it to air. He estimated the skin -- the benzene would remain on the skin for 30 seconds when it wasn't immersed, when it was not immersed, and he used the 140 square centimeters, which is the surface area of both hands.

In other calculations, he did have both hands immersed, and I don't remember the duration for that. They're -- they're separate calculations. I can look. So there's two -- there's two forms. One is the hands out and it's evaporating. The other one is it's going through the skin due to immersion. And we can go back and look at those specific calculations.

Yeah, that's -- that's all I need to say about that.

Q. Well, what are your -- what are your specific criticisms of either of those calculations, benzene out

with -- hands out of the bucket cleaning tools with benzene exposed to the air, what are your criticisms of that?

And, secondly, what are your criticisms of somebody putting their hands down into the bucket to immerse his tools or whatever he was doing, as he described that he did?

A. It's pretty much what I just said about immersing the hands in the bucket of benzene -- into the -- into the immersion. I don't think that was necessary, and if it was -- if he was doing that, as he described, I suspect it wasn't benzene. That's -- that's my criticism.

Now, Nicas has already said cleanly -- clearly that he just is using the data presented to him. He's not passing judgment on -- on its merits.

Q. All right.

A. Okay?

MR. BROWN: Responsiveness.

Q. Let's -- let's move on. We were going to get to the uptake of the dermal rate --

A. Yeah. Okay. Now we're talking about the dermal uptake. You -- there are a number of values available, and Nicas -- he could have done what I did in the -- in my revised Pliofilm paper, which was to

consider a distribution value, including a Monte Carlo approach, for estimating the dermal uptake.

The value he used is -- it's -- it's on the high side, but the biggest issue is really the whole technique. That's my -- that's my primary criticism --

Q. You're --

A. -- with respect to the contact time, the assumption it's pure benzene, immersing both hands for any significant period of time, and the need to have immersed the hands.

Q. Let me see if I understand.

A. And -- go ahead.

Q. His methodology is not what you criticize; it's the assumptions that he used in applying those assumptions to the methodology; is that correct?

A. Well, yeah, that's fine.

Q. You -- you are familiar with the methodology he used and recognize that as a scientific -- scientifically valid and accepted methodology for dermal absorption of benzene?

A. If you use the right parameters, he's generally correct. It's not much different than what I've done in the past.

Q. All right. But where --

A. But the assumptions are different.

Q. -- you are critical is the -- the assumptions he's made?

A. Yeah.

Q. Tell me the -- the assumptions that you think that he's made that are not supported by the facts or otherwise invalid.

A. I already have, but I can go over them again. It's -- it's basically that I doubt that it was pure benzene. I don't think both hands were immersed. There's no need to immerse both hands because it just doesn't make sense. The uptake rate he -- since there is some uncertainty about it, he could have used a distribution of uptake rates.

I think in support of not having immersed, the tox literature would -- would tell you it was unlikely that somebody could do that. I've already said it's unlikely to have been benzene due to the DuPont state of knowledge. I think that covers most of the criticisms.

Q. All right.

MR. BROWN: Objection, responsiveness.

Q. The -- applying both hands into a bucket of benzene, you're saying a worker would never have done that out at the DuPont Sabine River Works or the Texas

US Chemical facility, sir?

A. I can't say never, but I can -- I can tell you, it -- it wouldn't happen -- I can't believe it would happen once or twice a day for 20 minutes for 29 months or 24 months. I just -- it doesn't make any sense either -- either toxicologically -- it doesn't make sense practically, as a craftsman, and it doesn't make sense that it would happen -- that he would have access to pure benzene at his leisure to clean tools based on benzene DuPont bought. It just doesn't -- it doesn't hang together.

Q. You know he said, I went to a barrel of benzene -- he said it was stenciled benzene across the top of it. Now, if you got benzene out of a barrel stenciled benzene and you were familiar with what benzene looked like and smelled like, don't you think that you would be able to tell if it's pure benzene or not or -- or be reasonable in understanding that it is pure benzene?

MR. SCOTT: Objection, form.

THE WITNESS: Can I have Thompson's deposition, pages 121 and 22? It's not -- oh. Okay. I got it.

A. I think your description's reasonably accurate.

Q. If you went and got benzene -- or strike that.

If you went and got a substance out of a barrel marked benzene and what you got out of there was clear and looked like benzene, would you be correct in assuming and knowing that it was benzene that you were using?

MR. SCOTT: Object to the form.

A. I think that's a reasonable assumption.

Q. All right. There's nothing else to assume? I mean, you've got the thing marked on there. To assume anything else would be improper; you would agree with that?

MR. SCOTT: Object to form.

A. It wouldn't make sense.

Q. All right.

A. And -- and -- and you're right; he says -- he says it was painted on.

Q. Stenciled?

A. He used the word "paint." You're using --

Q. He also used the word "stencil" down at the next, I think, page down there, painted or stenciled on. I don't want to argue about it.

A. I don't know think -- I don't think it's important, other than I can tell you that's unusual in and of itself. Usually it's on the label. It's not

often sprayed on, but it can be. It can be.

Q. Did you see Mr. Beverly's testimony that they stenciled it on at Van Waters & Rogers?

A. It can. Yeah. It can.

MR. SCOTT: Object to form.

A. Okay. Back to --

THE WITNESS: Thanks.

A. Okay. Let's go back to where I was.

I guess we covered most of the -- I think we've covered all of the benzene criticisms --

Q. Any other criticisms --

A. -- on dermal.

Q. Any other criticisms of Dr. Nicas' assumptions with regard to his use of the accepted model on dermal uptake in terms of criticisms of the parameters or assumptions that he made?

MR. SCOTT: Object to form.

A. I think that's enough.

Q. All right. With regard to Dr. Nicas' report, at least for the list that you handed me, that looks like to be everything that you were intending on talking about.

Are there any other criticisms that you have of Dr. Nicas' report that we haven't discussed?

A. My criticisms about tool cleaning are

generally applicable to scaffold cleaning as well. I should have said that.

Yes, there is another criticism. It's mentioned on that page. The ratio of dermal to inhalation. Nowhere in all of my time ever have I seen a dermal intake that's greater than inhalation, and -- and there's good reason for that. It's because of what I've mentioned about what it would take to drive dermal to be the predominant player with respect to intake.

And as you well know, many people have not even liked my claim that at times it can represent, in the early years in an unsophisticated time, 10, 20 percent of the total dose.

He has 230 percent of the inhalation dose being due to dermal. That's highly unusual. That's for Nolen. And -- and -- almost 100 percent. It's 131 via inhalation, 131 ppm-years for Thompson. The inhalation dermal was 92.

So it's -- you know, it's 70 percent of -- of the inhaled dose he has through the dermal dose. It's very high, very high.

MR. BROWN: Well, let me object to the responsiveness.

I'm only interested in Thompson, and his calculations for the ratio between inhalation and

dermal were, as I recalled it, 131 parts per million for the inhalation and 92 parts --

A. That's correct.

Q. -- per million for the dermal.

A. Right.

Q. So the dermal was not higher for Mr. Thompson's case than his inhalation --

A. No, it wasn't higher, but it's -- even at -- at that ratio, it's way higher than what I've ever seen. Again, the math speaks for itself, and I think the criticism is -- the criticisms I've made explain why that's so.

Q. Is the methodology that he used in coming up with those two figures -- do you criticize the methodology or do you criticize the assumptions or the variables that he input into the methodology?

MR. SCOTT: Object to the form.

A. I criticize the assumptions.

Q. The input?

A. The input parameters.

Q. All right.

A. Well -- and on inhalation, I questioned the applicableness of his model. I don't think he should be -- his model is not ideal for outdoor situations at all.

Q. And you've told us why you thought those were --

A. Yeah, yeah. But in that case, it's a methodological problem. He shouldn't, in my view, be using that model without lots of alterations if he's going to use it in the outdoor environment.

Q. Have you used that same model for outdoor calculations ever?

A. No, no.

Q. Even in your Liquid Wrench study?

A. I don't think so, no. What I said -- Liquid Wrench study -- that outdoor data are not applicable to outdoor scenarios. It was only meant -- I had the ability to capture a so-called stagnant day, which seems to come up a lot in litigation, so I was curious on a stagnant day, can you approximate the near-field using near-field models? Kind of to my surprise, you could get close.

It -- but you have to have a stagnant day. And it's -- you know, if you look at wind rose data that are available from all over the United States, you'll see that that's a -- a pretty unusual event on a time -- time-weighted basis.

In fact, I've already mentioned the -- the default value, conservative default value, is 5 and

8 -- 5 and 8 miles per hour in the standardized approaches for outdoor.

Okay. That's -- that's pretty much my criticisms on -- on the calculations.

Q. On Nicas' report.

Anything else that you can think of that we need to talk about in terms of crit- -- criticisms or something that Dr. Nicas did that you just say is improper and resulted in an overestimate of Mr. Thompson's exposure?

A. On exposure, I think that's the vast majority of my criticisms. I would -- his -- some of his opinions, as expressed in his deposition, I have opinions about, but they're not dose -- they're not revolving calculations of exposure.

Q. All right. All right. Let's talk about this idea that you don't think that people could tolerate exposures to benzene like Mr. Thompson has described. That is your opinion, correct?

A. I think that they wouldn't. No, that's not my opinion. You can do it for 20 minutes once. You could -- you could do it potentially twice a day, but you wouldn't be doing it repeatedly because I would expect some frank dermatological problems, and they're not reported by Thompson.

Q. Well, he did report that his hands were cracked --

A. He did.

Q. -- and they would -- they would get white, correct?

A. Yeah. I -- I need to go back and look at my notes regarding how much of the medical records we have for Thompson to see if there's any reports of -- to his physician about that. I just -- I don't remember right this moment.

Q. All right. The man testified that, my hands would turn white when I would use it. They would --

A. Oh, I -- I fully expect them to turn white. That's different than frank degradation of the skin. And when you get repeated frank degradation of the skin, then you've got this accumulated intake -- uptake rate.

And, by the way, that's another criticism. Thanks for bringing that to my attention.

Dr. Nicas uses the damaged skin correction factor of 5X. You can do that once or twice. You can't do it day after day after day because at that point now, you're conceding that the man's skin is -- is permanently altered.

So he can't have it both ways. You can't

tell me that he's got no skin problems, and yet in our calculations, we're putting in a fivefold accelerated intake factor because the skins are so damaged. We can't have it that way.

His skin can't be good -- you know what I'm saying? You can't have repeated damaged skin and -- and damaged skin is just not defatted surficial white skin; this is -- it's just not -- it's not likely -- it's not possible that he would have that much damage day after day and not have skin problems, frank skin problems --

MR. BROWN: Let me object --

A. -- in my view. And I think that there's a physician that supports that view -- a physician's testimony that supports that view.

MR. BROWN: Well, let me object to responsiveness.

A. Okay.

Q. What is -- what is the condition of human skin that would warrant a 5X factor?

A. Well, if it's -- if it's -- if it's -- if it's occluded on a daily basis, if it's defatted on a daily basis, you can sometimes get that. But you -- but it would only be -- that correction factor would be applied, you know, less frequently than every day or

twice a day because you just wouldn't have that much accumulated skin damage.

Q. Would it include cracked skin?

A. Oh, sure.

Q. And -- and you said --

A. Again, you can do it once. I don't mind having -- like if he wanted to say every sixth day, the skin was sufficiently cracked that I put in a 5X factor, I could go with that. You can't do it twice a day, week after week, month after month and expect to get good data. That's all I'm saying.

Q. What factor should he have used in his model of dermal uptake?

A. Well, the sea of compounding other reasons as to -- I don't mind 5X, as I said. If he wanted to do it one day a week for 20 minutes, I suppose I wouldn't take issue with that. It's the -- it's the repeated claim that you can defat and change the skin's permeability by fivefold once or twice a day every day for months. That's my -- that's my problem.

Q. What other factor was Dr. Nicas supposed to use when the testimony was --

A. I just said I -- if I were him -- if you want my advice, I would say, for defatting of the skin, I don't mind once every 10 events, something like that,

using a 5X factor, but not every time.

Q. Let me -- let me get my question out.

What other factor or factors was Dr. Nicas to use when --

A. Oh, 1X on --

Q. Please let me finish.

A. Oh, I'm sorry.

Q. -- when he would -- when he would -- the testimony was, my hands were dried and cracked and would turn white, and that was the way they looked all the time when I was doing this.

What factor was he supposed to use for the other days --

MR. SCOTT: Object to the form.

Q. -- that -- that you would -- other than the one that you would agree with?

MR. SCOTT: The same objection.

A. I don't know. I feel like I've answered it. I think the record's pretty clear.

Q. All right. Now, is it your opinion that the human skin cannot tolerate benzene being -- using benzene as a cleaner for 17 1/2 minutes a day, a couple of times a day?

A. Without some skin damage, that would be my position.

Q. But -- but you know he did have some skin damage, correct?

MR. SCOTT: Object to the form.

A. I know he claimed the classic defatting white appearance.

Q. All right. So let me see if I understand you, because Dr. Irons has testified there's no way that the human skin could tolerate the kind of benzene exposure dermally that Mr. Thompson says he had.

Do you hold that same opinion?

A. I -- I'd have to couple -- if -- if I was -- if I was going to do this analysis on him, I would couple my exposure estimates with the medical data, because you're going to -- the doses that Nicas has got for ppm-years, you're going to see some other effects beyond defatting of the skin. If you believe those dose estimates, you're going to see other changes. And if his records are as good as I bet they are, you'll see other blood changes and other symptoms of benzene poisoning that would prevent that dose from being reliable.

In fact, it's not reliable as well, is another criticism. If you do the math on what the airborne concentrations are alone, without the dermal uptake, I think you're going to see symptomatology of

benzene poisoning during that time period, if you were to believe those models.

Q. Have you seen any -- have you seen Dr. -- I mean, Mr. Thompson's medical records from the years he was employed?

A. You know, I can't remember right now. I haven't -- I haven't sat down to try to figure that out.

Q. Do you know if they exist?

A. I don't know.

Q. All right.

A. I assume that if -- you must have them. They should exist. It's a court case.

Q. Any- -- so you're saying anybody who has exposures to benzene --

A. At the levels that Nicas has said occurred -- if you had their -- good medical records for those two years, I wouldn't be surprised if you saw indicators clinically of problems.

Q. What indicators are you talking about?

A. Well, you could have a depression of white blood cell count. You could see other changes in liver enzymes. You would -- at some of these doses, you'd -- you'd see repeated CNS depression, I would think, at some of these doses.

Q. With regard to the benzene exposures that Mr. Thompson's described, is it your testimony that everybody who would wash their hands for up to 15 minutes a day, twice a day for benzene -- they would all experience low white blood count liver enzymes?

A. No, no, no, no. I would just like to -- I -- what I'm saying is, I would compare my dose estimates and take a peek.

For instance, you may remember from my Pliofilm paper, I was pretty careful to see if the white blood cell counts matched historical doses that were close to those that I had estimated. And it was pretty clear to me that Rinsky had to be wrong about his doses, which made me first look at that issue, because you had the white blood cell counts depressed, you had death in the Pliofilm workers, you had people going on leave due to white blood cell depression, and yet he's got doses that -- that don't cause those effects.

So I think it's important to link these together.

MR. BROWN: Let me object, responsiveness.

Q. My question was, is it your testimony that somebody who gets exposed like Mr. Thompson says he was exposed to benzene, would always have a depression of

his white blood cells or abnormal liver counts?

A. No.

Q. It's possible they could have -- be exposed just like Mr. Thompson and experience no ill effects, correct?

A. Yes, because of the differential susceptibility to benzene.

Q. All right.

A. That's why I said I'd look, but it wouldn't be definitive.

Q. My original question was, do you say that it is not possible for a human being to work -- work with benzene --

A. No.

Q. -- like Mr. Thompson did and --

A. That's not my position. I've worked enough with solvents with my hands to not make that claim.

Q. All right.

A. I think it's unlikely, but it -- I'm not saying it's not possible.

Q. All right.

A. I've seen guys have horrible hands in the workplace.

Q. All right. You -- you talked about yesterday relying upon this acute benzene poisoning study by

Avis, correct?

A. Yes. I think it -- it reminds us of what can happen with repeated -- or not repeated -- with -- with exposure to benzene.

Q. Let me ask you this: You've not received anything from Van Waters & Rogers' lawyers as far as a statement or any direct evidence that Mr. Thompson was not exposed to benzene like he said he was, correct?

MR. SCOTT: Object to the form.

A. Can I hear that back?

Q. Yes, sir.

You have not received any evidence or statements from Van Waters & Rogers' lawyers or any other direct evidence that Mr. Thompson was not exposed to benzene like he said he was --

MR. SCOTT: Object to the form.

Q. -- have you?

A. A letter from their lawyers wouldn't be facts anyway that are admissible.

Q. Statements from -- statements that his lawyer -- that Van Waters & Rogers' lawyers have gone out and acquired from coworkers or anybody else?

A. Oh, I see what you mean.

MR. SCOTT: Object to the form.

A. I'm not aware of them going out and soliciting

affidavits on that matter.

Q. All right. What -- what you have is circumstantial evidence in the form of, I guess, studies like this Avis study that tell you in a case report that these individuals in this particular case, their skin didn't tolerate whatever exposures they had on this particular day, correct?

MR. SCOTT: Object to the form.

A. No. Are you asking me the basis for my views?

Q. Yes, sir.

A. Yeah.

Q. And -- and let me ask it this way: Do you base any of your views that Mr. Thompson -- it's not likely that Mr. Thompson had exposures like he says on this study that we've got marked as Exhibit 13?

A. No. I think that this -- that's simply an exemplar.

Q. And as an industrial hygienist, you wouldn't base your opinions on the effects of benzene on the skin on a study -- a case report like Exhibit 13, correct?

A. I would not. I -- I would tell you this --

THE WITNESS: Is my occupational dermatology file here?

A. Assuming it is -- but I'll paraphrase what

I -- what I know that's in it. If you look at the five classic books on occupational dermatology, written all the way back to Schwartz, Tulipan, and Birmingham, you will see that they talk at length about the effects of -- of routine daily interaction with of benzene on the skin, and that the damage is significant. And it wouldn't -- and it wouldn't be subtle. It wouldn't be white defatting of the skin.

That's all -- that, I can tell you. It's just not Irons' view. And I'm certainly not relying on this, because I think this is an extreme example. I'm not denying it can't happen. I'm not denying it can't happen without some clinically observable effects.

I am saying if a dermatologist saw your hands and you're doing that every day, as Nicas described -- see, you and I are more in agreement than Nicas -- than you and Nicas are in agreement because he's got a lot more dermal contamination submersion than I think the testimony supports.

MR. BROWN: Let me -- let me object to responsiveness.

THE WITNESS: Is Adams' book -- no, no. You don't have it.

A. Let me just tell you the books I'd refer to. Schwartz, Tulipan, and Birmingham, the old occupational

dermatology, the classic text, Adams' book, Maibach's writings, and Marks' -- Dr. Marks' writings, and Deleo.

Q. All right.

A. And -- and by trial, I'll -- I'll have those available.

MR. BROWN: Again, let me object to responsiveness.

A. Yeah.

(Exhibit Number 13 marked.)

Q. Exhibit 13 is a case report, isn't it, sir?

A. Yes, it is.

Q. Do scientists typically rely on a single case report to say exposure to a chemical X can cause a condition Y?

A. Not for subtle causation that re- -- that can occur in the background. I understand where you're going.

Q. You --

A. This is not -- this is not trying to identify a case report where the -- the causative agent is of unknown etiology. Remember, a case report links perceived -- you know, what they believe to be a linkage. There is no question about the linkage here. It isn't like I'm re- -- when it's a frank event, you can rely on a case report.

For instance, if you ate 100 aspirins and died, I'd rely on that as telling me something. What you're taking issue with is in epidemiology, trying to form a causal link for a subtle disease that occurs in the background. That's what's so different. Does that make sense?

MR. BROWN: Let me object, responsiveness.

A. Okay. It's very responsive, by the way.

Q. Do scientists --

MR. BROWN: Let me object to the responsiveness.

A. Okay.

Q. Do scientists typically rely on a single case report to establish causation of anything?

MR. SCOTT: Object to the form.

A. Yes. On something that's clean and it's not in the background. So this is -- okay. Our skins are in the background, right, and -- and not out there are this kind of frank injury.

Whenever you have clean skin and you -- and let's say you put it in lye for two minutes and you pull it out and half your skin's gone, that's -- you can -- you can come up with a causal link.

That's exactly what happened here. That's the best example I'll give you. You want to take

battery acid, put your hands in for 10 minutes, and you can -- there have been no other events that occurred, and you pull them out, you can link the two.

It's not epidemiology case reports. This is a frank toxicology, frank -- just like a poisoning case. That you can rely upon, yes, sir.

Q. But you're -- you're not relying upon only one report; you're relying upon a history of established --

A. If -- if you ate 100 aspirins, assuming you were normal before, after I did your autopsy, and there's no reason to believe anything else killed you, that would be -- that would be causative.

Q. Because you --

A. And I would -- and I would put that in the morbidity/mortality report and say, don't eat 100 aspirin.

Q. Because you know aspirin, based on other reports, can cause that result?

A. I wouldn't need to know that. Let's see if I pick something else.

Q. Let me ask you this way --

A. Well, I -- I can go on all day if you want to hear what case reports and when you bank on them.

If I -- if you -- if you -- if I eat a peanut butter sandwich laced with dioxin, I'm going to

break out; I'm going to get chloracne at a certain dose, almost for sure. That's a cause-and-effect. We can take it to the bank.

So on frank effects -- and you're not trying to tease out background -- you can count on them all day long, absolutely.

Q. You've criticized others for using case reports or single case reports for establishing causation, haven't you?

MR. SCOTT: Object to the form.

A. In epidemiology.

Q. All right.

A. In epidemiology.

Q. Do you know --

A. Where there's no other ability for confounders.

Q. Do you know of any other instance?

A. Or where there is -- I'm sorry -- where there is an ability for confounders, I criticize it, definitely.

Q. Do you know of any other instance in the scientific literature where men's skin has been burned off with second-degree burns and sloughed off after minutes -- only a matter of minutes of exposure to benzene?

A. No.

MR. SCOTT: Object to form.

Q. That's not likely believable in your opinions as an industrial hygienist that benzene could have caused that by itself, correct?

MR. SCOTT: Object to the form.

A. Oh, if -- if -- if you believe that putting your hands in benzene, pure benzene, for 20 minutes twice a day occurred day after day, I -- I fully expect that there would be marked -- marked skin effects. But I -- I don't have a photograph or a case report to give you today that would say how dramatic those effects would be. I doubt that they would be that dramatic. You would never allow yourself to become that dramatic. It just wouldn't be -- you would never allow it.

MR. BROWN: Let me object to responsiveness.

Q. Sir, as a professional industrial hygienist, would you say that somebody's skin that sloughed off like this from an alleged benzene exposure that only occurred in a matter of minutes would be solely due to the exposure to benzene?

MR. SCOTT: Object to the form.

A. Well, sure, if it's -- doses are high enough, as -- as they described.

Q. Have you seen any other publication or report --

A. Well, wait, wait. I'm sorry. I misunderstood your question. I'm sorry. I mis- -- I misanswered it.

THE WITNESS: Could you read it back, please?

(Record read.)

A. No.

Q. All right. Looking at this study in --

A. A one-time event, no.

Q. All right. Looking at this -- and that's what happened in this study, correct? It was a one-time exposure, correct? This is Exhibit 13, the Avis study we're talking about, correct?

A. Yeah.

Q. All right. You wouldn't expect, as an industrial hygienist, that that could happen if it was solely benzene that the -- the person was being exposed to?

A. On a singular event.

Q. Right. That is -- that material that got on those workers was extremely corrosive, correct?

A. Oh, I see what you mean. Is it -- can it be attributed solely to benzene?

Q. Yes, sir.

A. Not in three minutes, no.

Q. Right. And so if you'll look here, it says --

A. I --

Q. -- four crew members of -- were exposed to benzene fumes that had collected in a pipe from the previous cargo. Did I read that correctly?

A. Yes.

Q. We don't know what --

A. Oh, I see what your --

Q. We don't --

A. Your point is, if this doesn't occur in normal people in 20 minutes, it couldn't appear in three minutes without the addition of some caustic or acid? That's probably true.

Q. Wouldn't you think that's likely true?

A. That's probably true, if it's -- if it's only three minutes.

Q. You would not rely upon any -- this study to say benzene causes these kind of deleterious corrosive effects on the skin from a few minutes of exposure, correct?

A. That's right.

Q. And you would criticize anybody else who relied upon that, wouldn't you?

A. Relied upon it exclusively?

Q. Yes, sir.

A. Yeah.

Q. All right. In fact, when you did your study of the Pliofilm workers --

A. Uh-huh.

Q. -- those workers that you interviewed worked with benzene and benzene-enriched substances for hours at a time, correct?

A. Well, no, I -- I wouldn't say hours at a time, but routinely throughout the day.

THE WITNESS: There's a marked-up version of both papers that's highlighted over there.

(Exhibit Number 14 marked.)

Q. I marked your study as Exhibit 14. I'm just going to turn you to this highlighted portion.

It says on page 193, Pliofilm workers were dermally exposed to benzene on their hands and forearms for periods of time up to 1 1/2 hours; is that correct?

A. Yeah. But they're not -- they're not immersed, see. They're -- you can have contact on the skin and the volatilization rate is so high. You can interact with -- with wetted materials off and on during the day and not get that much systemic uptake.

MR. BROWN: Well, let me object to the nonresponsive portions.

Q. I read that correctly, correct?

MR. SCOTT: Object to the form of the question.

A. Yeah, I -- that's what it says.

Q. All right. And they were exposed without wearing gloves, correct?

A. Right.

Q. And you interviewed those workers, didn't you?

A. I did.

Q. And none of those workers ever indicated to you that they had problems with their skin or that their skin was sloughing off or they had second-degree burns or anything like that, correct?

A. As I said yesterday, I never asked them about it. I asked them about these 40 years after they occurred. And, more importantly, the vast majority of this contact probably was -- a lot -- a large fraction of it was volatized. I made the assumption that some fraction was absorbed, and I'm sure it was, but the hazard is way different than immersion.

My criticism of Nicas is primarily the one of long periods of time of immersion.

Q. All right.

MR. BROWN: Let me object to the nonresponsive portions.

Q. I think I'm through with that.

A. You want it down here?

Q. You'd agree that benzene is more readily absorbed through cracked skin than dry skin?

A. Sure.

Q. And you saw evidence that Mr. Thompson had cracked skin?

A. I -- I have evidence -- no, I don't have evidence; I have a claim.

Q. All right. What experimental or observational data do you rely upon to say that benzene will blister human skin on the hand and -- by using it for a period of 17 minutes or so twice a day?

A. Repeatedly.

Q. What evidence do you -- experimental or observational evidence do you have?

A. Can I -- do you want -- it's going to take me a few minutes to get those articles together. Do you want -- do you want me to grab them at lunchtime and answer that question then?

Q. That would be fine.

THE WITNESS: Okay. So please pull all the McDougal, Hanke and related -- Maibach and Anjo and the others, please.

Q. All right. I'll tell you, in the Nolen case,

you referred to a study conducted on rabbit skin. Do you recall that?

A. I don't remember -- do you know the authors? I may have cited it, but I don't remember -- I do it by author usually.

Q. Yeah. It's a study where they shaved a rabbit's stomach and they put benzene on the stomach of a rabbit for four hours.

A. Okay.

Q. Now, you agree that animal skin is different from human skin, correct?

A. Yes, sir.

Q. Even in the -- in your Pliofilm study, you -- the rats absorbed benzene twice as fast as humans?

A. Yes.

Q. Do you know what the absorption rate is for rabbits?

A. I think it's the same, if not a little higher.

Q. All right. Four hours on a rabbit's shaved stomach is not the same as 15 minutes on a human hand; you'd agree with that?

A. Sure. Did I not report vesicles in that study? I don't know. We'll find out.

Q. You mentioned the Hanke study. I pulled a copy out of what we had over there. And I can't

remember what exhibit it was. You -- you had attached it to one of the notebooks. But this copy that I have here is out of the notebooks from the -- the Nolen deposition yesterday, and if it's okay, I'll mark this as Exhibit 15 to your deposition. Is that okay?

A. It is. Did you make a copy and put it back in the other?

Q. I did not make a copy. I don't have any way to make a copy.

MR. BROWN: Bob, this is the -- this is the copy from the --

THE WITNESS: Well, we have to do that because, otherwise, you have broken the law for tampering with evidence, and we don't want that.

MR. BROWN: Do you want to make a --

MR. SCOTT: You've got to keep the exhibits right.

THE WITNESS: Yeah, you've got to keep the --

MR. SCOTT: You can't be taking things out of the Nolen exhibits.

MR. BROWN: Well, we won't -- well, I did. I mean, it was loose. I want to use it. And this -- I can bring the whole notebook over here.

MR. SCOTT: Well, I don't -- I don't

care -- let's make it easy, but we can't -- we can't take things out of the Nolen record.

MR. BROWN: All right. It's -- I'm not taking it out of it.

MR. SCOTT: Okay.

Q. I was going to mark it separately for this record, if you want to talk about it. This is from -- you attached that separately to one of your notebooks yesterday. Do you recall that?

A. In order to be helpful to you, yes.

Q. All right. This is the Hanke study, correct?

A. Uh-huh.

Q. In this study, there were human specimens who put benzene on some kind of rag or cotton thing and -- and kept it on their skin for up to one hour and 25 minutes, correct?

A. Right.

Q. Do you see any evidence that during their entire time, their skin started sloughing off or started blistering up or getting second-degree burns?

A. I don't remember them talking about doing it -- giving a visual observation of the skin. Do you? I haven't looked at it for a while.

Q. I've just heard it referred to as a support for the argument that a person can't physically

tolerate exposure to benzene, like Mr. Thompson says he did, for 17 minutes or so when these people tolerated it for an hour and 25 minutes, and some even longer, without any reports of damage to their skin, correct?

MR. SCOTT: Object to the form.

A. I -- they didn't talk about what they visually saw in the way of damage to the skin. It's not -- they're silent on it.

Q. Well, let me just ask it this way: Using your common sense, do you think that if these people started having second-degree burns after 15 or 20 minutes of benzene exposure and their skin started sloughing off, they would have continued with the study for up to an hour and a half?

MR. SCOTT: Object to the form.

A. I'm not -- I'm not going to continue to take issue with what I have said versus what you just said. I -- I just re- -- said within the last half-hour that I did not expect sloughing of the skin and serious acute damage in 20 minutes, okay?

But I do believe that if he did it as described in Nicas' estimates, you would get significant damage to the skin.

We don't know from here what the -- what the visual effects of an hour and a half are because

they don't talk about it, at least in this paper.

Q. All right. Fair enough.

A. That's all I can tell you.

Q. You would agree with me that it's not likely that a human subject who is experiencing severe damage to their skin, second-degree burns, blistering --

A. Not second-degree burns, right. They normally are --

Q. Blistering?

A. Oh, yeah. Oh, yeah, there's -- there's numerous human studies --

Q. Please --

A. -- where blistering occurs in these dermal studies.

MR. BROWN: I need to object to responsiveness.

A. Okay.

Q. Please let me finish my question --

A. I'm sorry.

Q. -- and let's see if we can move along.

A. Yeah.

Q. You would agree with me, sir, that the human subjects in the Hanke study that's there before you would not likely continue with an hour and a half worth of benzene exposure to their skin if they were

experiencing blistering of their skin or second-degree burns or major skin damage after only 15 to 20 minutes?

MR. SCOTT: Object to form.

Q. Correct?

A. I doubt that there was sloughing of the skin. I can't rule out blistering, and I can't rule out pathologically measurable damage to the skin.

Q. You can't rule it out, but you can't rule it in, because you don't know?

A. I -- because I don't know.

Q. But -- and my question is, I know it's not mentioned in there, but you wouldn't think that a person who is experiencing blistering of his skin would continue on for another hour after he -- he started experiencing that, correct?

MR. SCOTT: Object to the form.

A. I've said all I can on it.

Q. All right. All right. Yesterday, you were shown a -- what's called a motion to designate responsible third parties, and it was in the Nolen case, correct? Do you remember that?

A. Yes, sir.

Q. I'll represent to you the same motion was filed in the Thompson case with regard to the -- the places where Mr. Thompson worked and also to add his

employers.

Were you aware of that?

A. I don't believe so.

Q. Sir, in your opinion, was there anything that the DuPont Sabine River Works facility did or failed to do that resulted in -- or was a substantial factor in Mr. Thompson's development of acute myelogenous leukemia?

MR. SCOTT: Object to the form.

A. I don't know.

Q. All right.

A. I don't have evidence to know that because there's so many questions about benzene's availability and its presence at the site in light of what I know about the DuPont understanding of the hazards of benzene and -- and my own experience about allowing contractors to have access to drums of benzene -- or any -- you know, anything. Contractors don't have access, normally, to the raw materials on a plant site without the plant site being aware of it.

MR. BROWN: Let me object to the responsiveness of the answer.

Q. Sir, as -- as you sit here, what I hear you telling me is, you don't know if there was anything that DuPont Sabine River Works did or failed to do that

resulted in Mr. Thompson developing acute myelogenous leukemia. Is that accurate?

MR. SCOTT: Object to the form.

A. Did or failed to -- I cannot -- I don't have information to blame DuPont for his disease.

Q. All right. Is there anything that the Texas US Chemical Company did or failed to do that resulted in Mr. Thompson developing AML?

MR. SCOTT: Object to the form.

A. I -- I don't know, based on what I have today, one way or the other, other than what I've told you and we can infer based on the record.

And don't forget, this whole -- this whole line of questioning doesn't make any sense because I've already told you physicians and -- and specialists in this area don't think his disease is caused by benzene anyway.

So this whole thing becomes all garbled up to the jury, as you're well aware, if we keep on with this line of questioning.

MR. BROWN: Let me object to responsiveness.

Q. Sir, let me ask it one more time. Let me ask it this way: Can you cite to me --

A. I mean, I can -- if you're going to do that,

I'm -- you know, I -- I'm going to every time start saying that this disease is not related to benzene.

I'm trying to do an expo- -- answer your exposure questions. If you link it in with disease, which is what you're doing, we're going to go down a path that we agreed not to go down.

MR. BROWN: Let me object to --

A. I mean, I'm not being hostile. I'm just trying to be -- you know, what's good for the goose is good for the gander.

Q. I can't -- I can't tell you how to answer the questions; I can just ask the questions.

A. Well, I mean --

MR. SCOTT: You have repeatedly told him that.

MR. BROWN: Let me object to sidebar.

MR. SCOTT: You shouldn't, but you can.

Q. Sir, can you cite to me one thing that Texas US Chemical did or failed to do that resulted in Mr. Thompson developing acute myelogenous leukemia or was a substantial factor in him developing that disease?

MR. SCOTT: Object to the form of the question, asked and answered.

A. Mr. Brown, I hardly know how to deal with both

the DuPont question and this question. Because on one hand, you want me to almost agree that they provide benzene drums willy-nilly to contractors who can take five-gallon buckets of it, clean their tools, immerse their hands, be exposed to 1500 parts per million, according to Nicas, okay, and then by the next token say, I don't have any evidence that they behaved badly.

How can -- how can I assume both to be true? If I take your assumption that that's actually what happened and DuPont condoned it and it happened as Nicas said, I would have to say they made a big mistake and possibility contributed to his disease, if you believe it is a benzene-induced disease.

And if you want me to assume that same thing at this other location, then I have to say something about their behavior and say, yeah, they were negligent and maybe contributed to his disease, if you believe it's benzene-induced.

You can't have it both ways, so where do you want to go with it?

MR. BROWN: Let me --

A. They're either --

MR. BROWN: -- object to the responsiveness.

A. They're either doing a lot of really bad

things and, therefore, contributed to his disease, or they didn't do it and they didn't contribute to his disease. And that's what I'm going to tell the jury, and I've just told them.

Q. My question was, show me -- tell me anything -- any -- any one thing or a list of things --

A. I just told you. I just listed five things that they must have been -- if I assume that you're -- that the plaintiff is accurate and Mr. -- and Dr. Nicas' estimates are accurate, then, of course, both of those facilities failed in their duties and they must have contributed to his disease, if you also want me to stipulate that the AML is caused by -- by benzene.

MR. BROWN: Objection, responsiveness.

A. I think it's totally responsive. I don't think there's anything I can add to that answer.

Q. Okay. Can you show me or tell me anything that Texas US Chemical did or failed to do that resulted in Mr. Thompson's development of AML?

MR. SCOTT: Objection --

A. Okay. I tell you what.

MR. SCOTT: Objection, form, asked and answered.

A. I don't know --

MR. SCOTT: It's becoming abusive.

A. I don't know the rules in Texas, but I'm not going to answer that question for the fourth time.

Q. All right.

A. That's --

Q. That's the best you can --

A. I don't know the rules.

Q. Okay. Can you tell me anything that B&B Insulators did or failed to do that caused Mr. Thompson to develop AML --

MR. SCOTT: The same objection.

Q. -- or was a contributing factor in his development of AML?

MR. SCOTT: The same objection. And the objection is form.

A. If B&B failed in their responsibilities to protect him and educate him about the hazards of the sites in which he was working and he was exposed in the manner that Nicas and Thompson and you want me to assume he was exposed, then they, too, would have failed in their responsibilities to protect him from potential disease.

Q. And do you say that that caused his disease?

MR. SCOTT: Objection, form, asked and answered.

A. Well, I've already said his disease isn't related to benzene. But if you want me to assume that it's a benzene-induced AML, which is what you're telling me to do, then by definition, they -- they failed in their responsibilities to protect him.

Q. All right. It's your position that Mr. Thompson's disease is not related to benzene exposure; is that correct?

A. That's because I've deferred to specialists in that area because I've not been offered for causation. But you keep on dragging me into causation.

Q. So there's nothing that any of these other companies or entities did or failed to do that caused his illness because it's your position his illness is not caused by exposure to benzene, correct?

MR. SCOTT: Object to form.

A. What have we been doing the last three or four hours here? I -- I mean, my testimony is very, very clear.

Q. I'm correct about that, am I -- aren't I?

A. I don't know.

THE WITNESS: Can I hear it from the court reporter?

Q. Yes, sir. If your position is, as you've stated, that you don't believe Mr. Thompson's disease

is caused by his exposures to benzene, then there's nothing that his employers or any of these premises owners did or failed to do that caused his illness, correct?

MR. SCOTT: Object to form, asked and answered.

A. If it's not due to benzene, and that's the agent that they had -- and there may be some -- we haven't talked about potential other agents that were there that may have caused his disease.

But, yeah, my position would be if he doesn't have a benzene-induced AML, they didn't do anything to cause his disease; that's right.

Q. All right. And there's nothing else that you saw as risk factors, known accepted risk factors, that Mr. Thompson had in his life to cause AML, besides benzene exposure, correct?

MR. SCOTT: Object to form.

A. Oh, no, because now you're assuming that there's -- that most AMLs are due to benzene, and they're not.

Q. I'm not assuming that. I'm saying, what other risk factors, besides exposure to benzene, were you aware of in Mr. Thompson's past that could have contributed to his AML?

A. We went down the causation road. Now you're going to have me do a medical alternative causation analysis.

Q. Well, you're a toxicologist.

A. I can do it.

Q. I'm asking you, sir --

A. I can do it, but I thought you guys both agreed I wasn't going to be doing that today.

Q. I'm just --

MR. SCOTT: I'm about to change my mind.

THE WITNESS: Okay.

MR. SCOTT: If that's all we're going to talk about, then I'm about to change my mind.

THE WITNESS: I think we're getting --

MR. SCOTT: They're getting a full discovery on --

THE WITNESS: We're getting -- we're getting very close to opening the door to stuff that --

MR. SCOTT: Let's go back on the record and let Darren catch his plane and --

THE WITNESS: Are we still on?

MR. SCOTT: Yes.

THE WITNESS: Okay. We're still on.

MR. BROWN: Let's --

THE REPORTER: I was still on the record.

MR. SCOTT: We were.

MR. BROWN: We've been on the record. She needs to change her tape, so let's do that again.

MR. SCOTT: Let's take a break.

THE VIDEOGRAPHER: The time is 11:43 (sic). We are going off the record. This is the end of tape 4.

(Recess 12:43-1:00 p.m.)

THE VIDEOGRAPHER: The time is 1:00. We are back on the record. This is the beginning of tape 5.

Q. Let me see if I can shorten up our last discussion on responsible third parties.

Would your answer be the same, sir, if I asked it for each one of these people where Mr. Thompson worked on their premises or worked as an employee?

A. No, the answer wouldn't be the same.

Q. Who -- what answer -- what entity would it be different for?

A. Well, when he's out in the oil fields, he -- I wouldn't expect that, even if they gave him access to pure benzene based on -- well, they didn't give him access -- for the condensate, for example, I wouldn't call them irresponsible for letting him be exposed --

letting his skin be exposed to condensate, so it wouldn't be the same answer.

But as I -- for an entity that -- well, Nicas only looks at those two entities. But for any other entity that would produce that kind of careless disregard that we said to assume, then they would be.

But for those others, they're not equally -- they're not equally liable for negligence, if you will, or bad conduct because the situations were different.

Q. You're talking about the oil fields in the '50s --

A. Yeah.

Q. -- and 1960 time period?

A. Yeah.

Q. All right. Any other difference, except for the oil fields in the 1950s and the '60 time period, that you can think of?

A. You know, I think you and I have covered everything.

Q. Okay.

A. Now, there is one thing we should clear up, just so you and I -- and you happen to be right, but I wanted to confirm that you were right.

There isn't -- there is no place where he

talks about in his deposition immersing his hands for 20 minutes or 17 minutes. However, Mark Nicas, on December 4th, 2009, did testify to this line of questioning:

QUESTION: Now, is it your understanding that for 17 1/2 minutes, on average, Mr. Thompson had his hands immersed in pure benzene?

ANSWER: That's what he said.

So that's why he -- he made that assumption in his calculations, and that's what the basis is for my view that it's extraordinary and probably not true.

MR. BROWN: Let me object to responsiveness.

Q. All right. Yesterday we talked about Texaco, and the documents which -- the 1953 letter from Dr. Kuhn to Dr. Newquist.

Do you remember that?

A. Yes, sir, I do. Are you going to make it an exhibit?

Q. Well, I was, but I didn't know if he was -- what number he was on, so -- I didn't -- I didn't want to ruin his numbering system.

THE WITNESS: Okay. We're up to 18.

(Exhibit Number 18 marked.)

THE WITNESS: So Exhibit 18 is the letter from Kuhn to Newquist.

Q. All right. Exhibit 18 shows that Texaco, at least as early as 1953, had it reported to them that benzene had the potential to cause leukemia, correct?

A. That was the impression.

Q. All right.

MR. BROWN: The next exhibit, please.

(Exhibit Number 19 marked.)

Q. And what exhibit are we on, Dr. Paustenbach?

A. 19.

Q. Exhibit 19 is a letter from Alan Dooley responding back to Dr. Kuhn regarding the physiological properties of benzene and how long it had been known that benzene was known to cause latent blood disease, including reporting that the API give -- gave a good summary of the toxic effects of benzene, and reports of that document or copies of that API were on file at the Port Arthur library for Texaco, correct?

A. There were three questions in there, so let me answer them.

Q. I just --

A. One, he does mention that there are delayed effects on bone marrow, report as early as '39.

Two, he does talk about the possibility

for chronic poisoning.

And then, three, he does mention the API report.

Q. Being on file in Port Arthur?

A. Yes, sir.

Q. Okay. Sir, do you agree that Texaco was a knowledgeable and sophisticated user of benzene during the time period that Mr. Thompson would have worked at the Texas US Chemical facility in Port Neches?

A. I'd have to say that.

Q. All right. And by knowledgeable and sophisticated regarding the use of benzene, Texaco had knowledge of the health hazards of benzene during the time period that Mr. Thompson worked there, correct?

A. Yes, sir.

Q. They had knowledge and know-how to protect and warn workers on their premises of the dangerous and deadly health hazards of benzene, correct?

MR. SCOTT: Object to form.

A. Well, now, we covered this yesterday. They may have had knowledge, but they don't have the responsibility to train contractors and often are not allowed to train the contractors, depending on the contract.

So we wouldn't want to assume that they

were negligent if they weren't allowed to talk to them.

MR. BROWN: Well, let me object to responsiveness.

Q. Sir, is it your position that Texaco, as a knowledgeable and sophisticated user, had no obligation to warn contractors on its premises of the deadly health effects of chemicals on their premises?

MR. SCOTT: Object to form.

A. The primary responsibility for contractors, when they go to a site like this, is the employer of the contractor.

Unless there's a hazard that would be likely to be unknown to those contractors, that only the company would know about, then the responsibility changes. So in -- we would have to know what the -- what the -- the outside contractor or union knew.

Quite often, in the companies even in that time frame, in the contract, it talks about the fact that when you come on site, you're going to be exposed, potentially exposed, or working in the vicinity of areas where chemicals are present in the air, and you should be aware of these hazards, but they -- they -- that's the extent of it.

So it really depends on the site and whether or not a contractor or union person in their --

as professionals in their field would be aware of the hazard. For instance, we know later on that insulators were trained about the hazards of asbestos.

MR. BROWN: Well, let me object, responsiveness.

Q. You're not a lawyer; you don't have any legal training under Texas law, correct?

A. I don't have legal training under Texas law, but I have written on this subject, and it may have even appeared in a law journal.

Q. All right. If the law in Texas is when a premise owner has actual knowledge of a deadly health hazard on their premises, they have an obligation to warn those who are invited upon those premises, Texaco should have been warning about the known health hazards, the deadly health hazards, of benzene to contractors who came on their premises at Texas US Chemical during the period that Mr. Thompson was working there, correct?

MR. SCOTT: Object to form.

A. We're confusing things. You're calling something potentially hazardous and deadly at some dose versus that which would be expected at the site.

If, for example -- a good example of what you just said is, if you have a room -- and many of

these facilities have excessive concentrations of CO, they have a big warning sign that says do not enter. Sometimes it's a locked door. And -- and they certainly have an obligation to tell the contractors that.

But the very fact that benzene's present, let's say at 1 part per million in air, they don't have an obligation to share that with the contractor specifically because it's not an imminently dangerous concentration, and the contractor generally will have had enough knowledge through his employer and should have had enough knowledge through his employer to know about that hazard, if it was substantial.

So we don't want to mix the potential of a chemical at some dose to constitute a deadly hazard just because it's there. Very different in -- I could go on and on -- by then -- and it's an expert opinion, by the way --

MR. BROWN: Let me object to responsiveness.

A. -- because we've crossed over. You're getting expert opinions from me in other areas now.

MR. BROWN: Let me object to responsiveness.

A. Okay.

Q. Sir, did Texaco, as a knowledgeable and sophisticated user, owe Mr. Thompson a duty to warn him about the health hazards of benzene --

Sir, did Texas have a duty as a -- strike that.

Did Texaco have a responsibility, as a knowledgeable and sophisticated user of benzene, to warn Mr. Thompson about the health hazards of benzene while he was on their premises?

A. As you just said, if you're asking for a legal opinion, I -- I can't give it. Based on my knowledge of this area, that is, the likely airborne concentrations of benzene and the responsibility -- primary responsibility of the employer, they would not have that obligation to train him or make him aware of benzene if the concentrations were not hazardous, and certainly not if they weren't above the regulatory guideline.

Q. If -- if Texaco or DuPont had knowledge that contract workers like Mr. Thompson was using benzene from 55-gallon drums while on their premises as a cleaner, did they have an obligation to warn those contractors about the known health hazards of benzene and warn them not to use it as a cleaner?

A. Yes, sir.

Q. All right. And if they didn't warn those contractors, do you think that that is -- that they failed in their responsibilities as a -- as an ethical company?

MR. SCOTT: Object to the form.

A. If they bought the benzene, those two companies at that time frame bought the benzene, provided it to the contractor, and told them to clean their tools and their hands with it, that wouldn't be proper.

Q. What if they didn't provide it to them and told them to do it, what if they just allowed them to do it?

A. It would depend if they really allowed it. It's still the primary responsibility of the employer of those contractors to have prevented that behavior. That's the primary, clear, in my opinion, legal and scientific responsibility. It's a historical responsibility in our profession.

MR. BROWN: Okay. All right. Let me object to responsiveness.

Q. With regard to latency for benzene-induced --

A. They could have done it, by the way. I'm not denying they couldn't have done that. Based on what I know of them, they wouldn't have allowed it to happen,

and if they knew it was happening, they should have told them not to do it. But still the primary responsibility is that of the direct employer.

MR. BROWN: The same objection.

THE WITNESS: Okay.

Q. With regard to the issue of latency, do you have any opinions as to what the latency period between exposure to benzene and development of AML is?

A. Okay. We're -- we're going -- we're back to expert opinions of causation. Yes, I have an opinion. I think I shared it with you last time.

The weight of evidence generally is in that nine- to 15-year range. That's where the bulk of these latency estimates tenerally (sic) -- generally reside, as Dr. Irons, I think, testified.

Q. Is it your testimony that if the latency period is outside of that range you just described, then it is impossible to conclude within reasonable scientific probability that an exposure resulted in the disease?

MR. SCOTT: Object to form.

A. No.

Q. All right.

A. I -- I agree that there are cases that have been reported outside that window, and it can happen.

Q. Do you know what the latency period is for -- between exposure to benzene and development of AML of the M4 variant?

MR. SCOTT: Object to the form.

A. No. And you're -- you're presuming there's a causal link, right?

Q. I'm just asking you if you -- do you know?

A. I don't know.

MR. SCOTT: Object to form.

Q. All right. Let's look at your documents. Dallas has got -- why don't we start out with the folders and identify each one of those.

All right. It's my understanding that what we've got here in front of you are documents that you've brought with you to your deposition that -- in response to the subpoena duces tecum; is that correct?

A. I guess that's fair.

Q. Along with --

A. And many of these folders we've already made exhibits.

Q. Yes, sir.

And along with the reliance documents and the DuPont documents, and I think there was another one -- document down here which we --

A. There's one on calculations somewhere and --

here it is.

Q. Yeah, but it was a black one. What's that one you've got over there?

A. That's case materials. That's documents I received.

Q. Yeah. Okay.

MR. BROWN: Where was the notebook, Dallas, that was right here?

THE WITNESS: No. It was an exhibit, Darren; is that right?

MR. BROWN: No, it wasn't. We were going to mark it as an exhibit. It wasn't a reliance document. It was what you called the -- I can't imagine -- it was just sitting right there before we left.

THE WITNESS: You don't think it's any of these, huh?

MR. BROWN: No. No, it was in addition.

THE WITNESS: Do you want to take a minute and find it?

MR. SCOTT: Yeah, why don't we get off the video.

THE WITNESS: We have a -- we have a missing binder.

THE VIDEOGRAPHER: The time is 1:16. We

are going off the record.

(Recess 1:16-1:19 p.m.)

THE VIDEOGRAPHER: The time is 1:19. We are back on the record.

Q. All right. Dr. Paustenbach, I would like to go through the documents that you've brought here with you to your deposition today in response to the subpoena duces tecum as well as the -- any other documents you brought that you rely upon.

You've seen the subpoena duces tecum in this case, correct?

A. Yes.

Q. Have you brought with you all the documents that are responsive to that -- to that subpoena duces tecum?

A. To the best of my knowledge.

Q. Right. You've got a stack of folders here. Let's just go through those one at a time, and -- some of them already have been marked, but at least we'll have a record of what was here.

A. Okay. This one is called DuPont Knowledge and Control of Benzene and Hazards: Key Documents. And these are documents I received from counsel that has a number of policies and work practices in it.

Q. All right. I don't know that we have that one

marked. Let's mark that set of documents as the next -- what's the next exhibit?

A. That will be Exhibit 20.

(Exhibit Number 20 marked.)

Q. All right. How have you relied upon Exhibit 20 in your preparation of your opinions today?

A. It -- it reminded me or reinforced my views that DuPont, even in the '40s, '50s, and '60s, had been fairly careful about setting up its safety programs, and a little bit on their training and industrial hygiene programs.

Q. All right. You're talking about DuPont corporate or you're talking about DuPont Sabine River Works?

A. It's a -- it's a combination of both.

Q. All right. You saw the Jimerson deposition, correct?

A. I did.

Q. You saw where he testified that he got a warning in 1964 about the hazards of benzene, and that one of the portions of the warning said, you don't need to be -- worry about it because there's no permanent effect. Do you recall that part of his warning?

MR. SCOTT: Objection, form.

A. I don't remember that. I have a summary, but

I don't remember that.

Q. If, in 1964, DuPont corporate was warning DuPont Sabine River Works management not to worry about benzene because there was no permanent effect, that would have been an inappropriate warning, correct?

MR. SCOTT: Object to the form.

A. If -- if he said that, that would have been inappropriate.

Q. All right.

A. If he said it just like that.

Q. And if that was the knowledge of the people at DuPont Sabine River Works, that wouldn't be a -- a well-appreciated risk of the hazards of benzene, correct?

MR. SCOTT: Object to the form.

A. Yeah, but that's inconsistent with the documents I have from Sabine River. The two don't come together. But if -- if his was the predominant view, that would be wrong.

Q. All right. It would not be a -- well-understood knowledge of the risks of benzene if you thought, after you get exposed and get dizzy from benzene, you don't have to worry because there's no permanent effect?

MR. SCOTT: Object to form.

A. That wouldn't be appropriate.

Q. All right. That wouldn't indicate a knowledgeable or sophisticated user, would it?

MR. SCOTT: Object to form.

A. If that was the predominant thought at the facility because of that communication, that wouldn't reflect a knowledgeable user.

Q. All right. What's your next document that you've got there?

A. The Nicas critical review, which we've --

Q. Marked?

A. -- made an exhibit.

Q. All right. What's that under -- underneath there? Ken --

A. No, that was the DuPont.

Q. That was the key document. Okay.

A. I'm going to go from here to there.

Q. There you go.

A. This is the Frank Parker summary of -- I think this is his -- a summary of his report, and I don't recall if we've marked it.

MR. BROWN: All right. Let's mark that as the next one.

(Exhibit Number 21 marked.)

Q. What criticisms did you have of Frank Parker's

opinions? Did you prepare -- prepare a list of those like you did for Nicas?

A. I don't know, but I've got a lot of criticisms. Do you want me to give them to you?

Q. You've got a lot of criticisms of Mr. Parker's opinions in this case?

A. I'm afraid I do.

Q. Are they listed there on that document in front of you?

A. This is just a summary. I'll have -- it won't take me long.

Q. Well, let's go through them, then.

A. Let's -- let's mark that as an exhibit, and I'll work off the clean copy.

THE WITNESS: Wait. Hold on.

(Off the record.)

THE WITNESS: That's Exhibit 21.

A. I don't think he's right about his claim that most companies in the late 1970s didn't care about TLVs. That's not factually accurate. I agree with him that they were mostly concerned about carcinogens, but they cared about all the TLVs.

I agree with him that the first party that's responsible for ensuring the safety of Thompson was -- is the primary employer.

I don't agree with him that DuPont was obligated to warn employees about hazards unless they were significant. I don't know what -- how -- he never defines "significant."

He -- he says that there's benzene in the distillate of unknown magnitude, and then says it can be as high as 30 percent. I don't believe there's -- that's true. I don't know where he got that.

Q. What basis do you have to dispute that testimony?

A. Because of work I've done in the past. I don't -- crude oil never contains 30 percent benzene.

Q. He's not talking about crude oil.

A. He's talking about -- well, he's -- both -- this is interesting. Well, we're in the oil field, and he says he explained that the crude oil distillate may have contained benzene. He testified that benzene and crude oil distillate range from virtually none to 30 percent, but that has nothing to do with the oil fields.

Anyway, it's true: It can be fairly high if it's in the distillate, but it's -- that shouldn't be in the oil fields unless they're using it for some reason that I'm -- I'm not aware of.

I agree with him that Haskell Labs knows

quite a bit and knew quite a bit about benzene and industrial hygiene.

I agree with him that the company, back in the early years, was doing urinary phenol and urine sulfate ratio testing and white blood cell testing. That would be a sophisticated user.

I agree with him that through the '50s, '60s and '70s, somebody in DuPont understood the hazards of benzene.

I agree with him that I haven't seen firm documentation that -- that McKesson -- although I'd expect they would -- had lots and lots of knowledge of benzene, but I think they probably did for those people that worked with benzene.

I don't have as many problems with him here as I did in Nolen.

MR. BROWN: Let me object to the nonresponsive portions.

Q. What have you got next?

A. We have Frank Gardner's summary.

Q. Did we mark his summary right there?

A. We did.

Q. Okay.

A. The next one is the summary of Gardner's either report or his deposition.

This would be -- do you want to make it 22?

Q. Well, no. What I want -- if you -- have you --

A. I don't have any -- I've read it. I don't have much to say about it.

Q. You're not a medical doctor, a hematologist? Have you been asked to critique Dr. Gardner's opinions in this case?

A. To the extent he starts getting into my areas -- which he did. So my criticisms would be his misrepresentation of my studies.

For instance, Gardner says, in one of Paustenbach's studies, he contends they put their arms up to the elbow in benzene, and they were doing this daily. That's not what I said.

A. I'm not going to criticize other aspects of it.

Q. All right.

A. Gardner does say that the condensate has no more than 5 percent benzene, but I don't think that it's that high.

Okay. Do you want to mark this?

Q. No.

A. No? Okay.

The next thing I have here is the Notice of Deposition, which I -- I think we've marked.

Q. No, we haven't. Let's mark the notice and subpoena.

(Exhibit Number 22 marked.)

Q. That's Exhibit 22. And you told us that you brought the documents that were responsive to Exhibit 22, to the best of your knowledge?

A. I think -- yeah.

Q. Okay.

A. And then we marked this yesterday, but -- I don't know about today, which is the reliance documents.

Q. This is your list of reliance documents in the Thompson case?

A. Yes, sir.

MR. BROWN: Let's mark this as 23.

(Exhibit Number 23 marked.)

A. And this is the Gene Thompson affidavit.

Q. All right. You had not -- you have not had a chance to read over the Gene Thompson affidavit?

A. I haven't.

Q. All right. So you don't know if you can criticize or anything like that; that would be a fair statement?

A. I could read it right now, but I'm not prepared to without reading it.

Q. Well, let's -- let's move on.

A. This is the Wellen deposition summary, and we marked it yesterday.

Q. Wellen deposition summary from what -- what case; do you remember? You said you looked at his deposition from two cases. Do you remember which ones they were?

A. No, I don't. This -- this looks like this might be from a September 29, 2009 --

Q. Okay.

A. -- deposition.

Q. That's the deposition in this case?

A. I think it is.

Q. Let's just -- is this what you've relied upon for your understanding of Harry Wellen's testimony?

A. Yes.

MR. BROWN: Mark that as Exhibit --

A. Primarily. I can't remember -- I don't have any summary of the other one I read.

(Exhibit Number 24 marked.)

Q. Okay. What's your next document?

A. This is the Jimerson -- summary of the deposition of Ray Jimerson.

MR. BROWN: All right. Let's mark that as Exhibit -- are you running out of stickers?

THE WITNESS: Is that -- it's Number 24; is that right?

MR. BROWN: Yes -- 25.

(Exhibit Number 25 marked.)

THE WITNESS: 25.

MR. BROWN: You've got a 24 down there on the ground.

Q. All right. What's your next document?

A. The next document is items received -- I don't remember if we marked this or not. I think we did, but I'm not sure.

Q. I think we did.

A. It's like 1, 2, or 3.

MR. BROWN: It's not 1. It might be 2 or 3.

A. It's not. We've got it. It's Number 4.

Q. Okay.

A. Okay. We've marked that.

We've marked, I believe, the Clayton summary.

Q. We've marked that.

A. We've marked the case summary.

You didn't want to mark my CV, right?

Q. Well, just -- you know, let's just go ahead and do it. I've already got it -- I mean, we did it yesterday. It was Exhibit 11 yesterday. What is -- what's that number? 26 today.

(Exhibit Number 26 marked.)

A. We've marked the opinions, I believe.

Q. Yes, those are marked.

A. And we've marked the invoice.

Q. All right. Okay. That takes care of your manila folders.

Let's go to your reliance notebooks. I think they start out with Exhibit 15-A through 15-C.

(Exhibit Numbers 15-A - 15-C marked.)

Q. Does 15-A through 15-C constitute all the documents that you rely upon for your opinions in this case?

A. That I had prepared prior to today. I will rely on the dermatology books I -- I've already read into the record by the time of trial.

Q. Okay.

MR. BROWN: Are you okay?

THE WITNESS: Yeah. I know --

MR. BROWN: Do you want to take a break?

THE WITNESS: We're doing fine.

MR. BROWN: Let's keep going.

THE WITNESS: Let's keep her going.

Q. All right. Next we've got --

A. We're going to get you on that plane.

(Exhibit Numbers 16-A - 16-B marked.)

Q. -- Exhibits 16-A and 16-B, which are called key DuPont production document list binders.

A. Yeah.

Q. What's the difference between this and the key document that you had? I mean, obviously, there's a lot more here.

A. It's a lot more. I think there were more Sabine River documents in the other stack.

Q. All right.

A. And these cover broader areas, including their understanding of the industrial hygiene expectations going back into the '60s.

Q. And these are 16-A and 16-B?

A. Yes, sir.

Q. Where did you get these documents? Did you get them from Mr. Scott?

A. They came from some counsel. I didn't have them.

Q. Okay. What other documents? There's your --

A. Okay. This is Exhibit 17.

(Exhibit Number 17 marked.)

A. And this is so-called case materials. And in there, we have the Social Security records, I believe, the interrogatories, the plaintiffs' requests for inclusions, and a lot of -- some legal documents, and some science -- for instance, the Nicas depo's in here.

And you're welcome to look, if you haven't, but it's just the materials you see from counsel that are related to this case.

Q. All right.

A. And there's two volumes -- just one volume. Okay.

Q. And the last one is the Univar study binder. It's not marked yet. What -- 26 -- 27?

THE WITNESS: Dallas, is the one on your chest -- it's been used. Oh, it's trash? All right.

A. Okay. This includes -- we may have already marked most of these. This includes Wellen and some labels that I was provided and -- and warning statements from Van Waters & Rogers. I don't know what the history of these are. You're welcome to look at it.

Q. Well, no, no, let's just mark it, and we'll move along.

(Exhibit Number 27 marked.)

THE WITNESS: That's 27.

Q. Doctor, you've indicated that you're -- you've had some criticisms and are critical of some of the plaintiffs' experts in this case.

Do you know if there are other persons who have been critical of your work in the past?

A. Oh, of course.

Q. In particular, you see some criticism with regard to the chromium studies, correct?

A. Well, not the studies -- you mean -- they've been critical -- we have the -- we have a newspaper article that's critical of it, for sure, and then there's Dr. Eagleman's claims and -- and then EWG's claims.

Q. David McMichaels' claims?

A. David Michaels.

THE REPORTER: McMichaels?

MR. BROWN: No, it's Michaels, excuse me.

A. It's all the same claim repeated by different people.

Q. Peter Waldman's article in the Wall Street Journal?

A. Yeah, it's all the same.

Q. Why -- why did you understand that they retracted your article on chromium --

MR. SCOTT: Object to form.

Q. -- that was published in 1997?

MR. SCOTT: Object to form.

A. The editor believed that I failed to disclose in the article the fact that the Chinese author received $1200 to -- I suppose in consulting fees to assist in reconstructing his work for English translation. He felt that should have been disclosed.

Q. Did you feel like that should have been disclosed?

A. Based on my review of the guidelines used in the scientific community and the size of that -- that consulting amount, clearly it was not necessary.

And I've -- and I've said that in writing and in peer-reviewed papers -- paper.

Q. In any of the studies that you've been asked to do, whether it's a risk assessment or reevaluation, have you ever lobbied or argued for a higher -- I mean -- strike that -- a lower PEL or more protection for individuals and against the position of the company who hired you?

MR. SCOTT: Object to the form.

A. That's a compound question. You could -- the first answer is, yes, I have -- I have argued for lower occupational exposure limits at times. One of them was benzene. Another one was beryllium. You may recall I

interacted with the TLV committee on moving the guideline down.

Q. What was -- what -- what did you argue with regard to benzene and its PEL being lowered?

A. Well, I'll have to remember. I think it was -- I think it was 1 at the time, and I suggested .05, and there was a discussion about whether it should be .1 or .2. I believe that's -- it's foggy now, but it was -- it was -- I -- I suggested a middle ground lowering of the -- of the guideline.

And on beryllium, I said it could be a significant change. I didn't know what that number was, but I thought it was clear that the evidence was it had to be lowered.

Q. Well, let me see if I understand on benzene. You argued that the permissible exposure level for the time-weighted average be reduced from 1 part per million to .05 parts per million?

A. I have to go back and look. It's the TLV, not the PEL, by the way. It was the TLV.

Q. All right.

A. That record is -- is clear.

Q. All right. Where -- who did you argue that in front of?

A. The TLV committee.

Q. The TLV committee for the industrial hygiene association, ACGIH?

A. Yes, ACGIH.

Q. All right.

A. They -- they were considering a range of changes, and I supported one of those changes. And I suggested whatever I suggested. I think it was 0.5. I think. I'd have to go back and look.

Q. And when -- when did that take place?

A. I think it was in the time frame 1991 or '2 to 1993, in that vicinity.

Q. And was that on the records or the minutes of the ACGIH?

A. I think it's -- I think it's been -- I don't think it's a secret. I don't know what the -- I don't know what they hold. I don't know.

Q. Why did you feel it was necessary to reduce the benzene exposure level or TLV to .05?

A. Well, I wasn't sure it had to be, but there was a movement that -- at that time, there was a reliance on mathematical models for influencing occupational health standards, and I -- I said, you know, if we're -- if we're going to change it, this is what I thought would be a reasonable value that was protective.

And, again, I would have to go back and look at what that value was, but it was lower than the prevailing TLV.

Q. Do you know what the TLV for benzene was in 1990? Do you remember?

A. Not without looking. It's in my -- it's in my paper.

THE WITNESS: Can I see the last one, the most recent, 2004 Williams and I.

A. You know, my recollection is it's 5 or 10 at that point.

Q. Do you have a recollection of you arguing for a TLV that was below the OSHA permissible exposure level?

A. To OSHA?

Q. That the TLV you were recommending --

A. Oh.

Q. -- or arguing for would be below the OSHA -- OSHA PEL of 1 part per million.

A. You have to look at the time frame. I'll have to refresh my memory on time frame because I don't remember who went first, if it was a PEL change on benzene before it did for the TLV. I don't remember right now.

Q. All right. And you say you argued for a lower

TLV for beryllium exposure?

A. Yeah. I know Michaels doesn't see it that way, but at the meeting, I said, look, it -- it definitely needs to be lower. I don't know how much lower. And I recommended some research be conducted to figure out which form of beryllium.

I -- I actually recommended there ought to be five TLVs or five PELs for beryllium, which I thought was pretty novel, and that wasn't embraced. But I thought that you should be very scholarly in setting those five and that the -- that the primary one for oxide definitely needed to be lowered. But I didn't know how much. I -- I don't know if I proposed a limit or not, today. I just don't remember.

Q. On your issue with --

A. But that's well known. I mean, it's all -- it's in papers and there's no question about what my position is.

Q. On your issue on the -- the study that was retracted -- I have a copy of that -- were you aware that before it was retracted, that the California EPA relied upon that study in coming up with a PEL for exposure to exposure to chromium 6?

A. That's not true. That's what the plaintiffs' bar said. That's not true.

Q. That's not true?

A. No.

Q. What -- explain it.

A. Well, first of all, it's -- it's not a PEL; it's a water standard, for one thing.

Q. All right.

A. The second thing is, they didn't rely upon it. They looked at the body of knowledge on chrome 6.

They probably were -- they ignored it, in fact. We'll go that far. They -- they picked their own study that they liked, and then they decided to embrace it. And I think it was borne of -- and they kept on taking it -- the State of California put it before outside peer reviewers, and it consistently got rejected as being credible science for changing their value.

MR. SCOTT: Which one? It's unclear from your answer which study --

THE WITNESS: I'm sorry. Chrome -- oh, California.

MR. SCOTT: Which study was rejected?

THE WITNESS: Oh, their proposal was rejected for -- for lowering the -- the water guideline, at least the basis for their water -- lowering the water guideline.

A. And they -- and I know the plaintiffs' bar argued that the paper with Zhang influenced their judgment so as not to lower it. But from what I can tell, they didn't give that serious consideration anyway.

MR. BROWN: Do you have another sticker?

A. That's well -- again, that's well documented, and we could go through that, even though I think it's out- -- way outside today's deposition. But I'm happy to talk about it.

Q. I don't want to spend a whole bunch more time on it.

A. I will call to your attention, since we're on the topic, that my written and -- and the group's written views on what happened and the fact that the original paper was not only correct, but much more accurate than the -- than the EPA's paper and all the controversy around it is well-documented in this manuscript, which if you don't make an exhibit, maybe Mr. Scott will.

Q. No, I'll be glad to make it an exhibit.

(Exhibit Number 28 marked.)

A. Okay. I would focus your attention to pages 341 and 342 of Exhibit 27 -- 28.

Q. All right. 28 is what?

A. It's a paper that came out in 2009, which is the complete compendium, which summarizes all of Zhang's studies and presents the epidemiological analysis that is based on all of his many years of study of this topic. And it appeared in the Journal of Toxicology and Environmental Health, volume 72, pages 329 to 344.

Q. Who publishes that journal?

A. Taylor & Francis.

MR. BROWN: I don't have any more paper clips.

(Exhibit Number 29 marked.)

Q. 29 is -- you don't -- all it is is the various Wall Street Journal articles, articles by Mr. Michaels and Environmental Working Group, you know, saying their criticisms of you.

You've seen those before, correct?

A. Sure.

Q. Okay.

A. Well, I don't know if it's -- I guess partly it's for me or, if not me, the -- how the chrome 6 study was -- came about.

MR. BROWN: Here we go. We've got a paper clip rather than that rubber band. You're going to roll up everything. Thank you so much.

Q. The next one --

MR. BROWN: Do you have another sticker? Thank you.

(Exhibit Number 30 marked.)

Q. This is just a group of documents regarding the Dow dioxin study in Michigan and whether or not the State of Michigan would accept the in vivo bioavailability study that was performed by Exponent.

Do you recall that?

A. I don't right now.

Q. Do you recall working on the Dow Midland, Michigan dioxin project with Garabrant?

A. I can't imagine that you can take a blog site and bring it admissible into this deposition, but if you say you can, I guess you can.

Q. No. I'm -- what I'm --

A. I mean, I've never heard of it, but -- it's a blogger site.

Q. I understand. And what I'm -- let me show you what the -- it's where -- that's where these documents came from, and it shows the corrective action -- corrective action consent order that Dow was seeking to have implemented based on work done by Exponent while you were vice president of that group.

Do you recall that?

MR. SCOTT: Objection, form.

A. I recall submitting the study, and -- are you saying that it was rejected?

Q. Yes, sir, according to this e-mail from the Midland -- the Michigan Attorney General's office, they rejected the Exhibit 2 to the study, which was the science used to support an increase of the permissible exposure level or safe level of dioxin.

A. All right.

Q. Do you recall that?

A. Well, it's wrong. Factually, what you said is wrong.

They chose not to accept -- well, first of all, the State of Michigan accepted my proposed soil cleanup standard, okay? That was officially brought in and had regulatory enforcement.

The new governor came in and chose not to continue to accept it and to look for -- to revise -- to go back to their old proposed guideline.

Then -- that's another matter. So the first proposal was accepted by the state.

The second was -- and then it was taken back.

And then we -- we also did this bioavailability study. It was not rejected; however,

the state did choose to go ahead and embrace their old cleanup guideline. I don't see anything that says that it's rejected.

Q. Let me -- let me show you what I'm referring to.

A. Okay. This is an e-mail that was disclosed in litigation or somehow pursuant to a Freedom of Information request.

They say, however, according to both Dow and your staff, the only existing attempts to apply the PRA, probability --

A. Probabilistic risk assessment.

Q. -- derive a cleanup standard for dioxin in residential soils are certain reports prepared by Dow's consultant, Exponent. As you well know, the DEQ's own toxicologists have unanimously disagreed with Exponent's conclusions. More specifically, DEQ's own qualified experts have concluded that many of the critical inputs used by Dow for the risk assessment are not based on the best available scientific information as DEQ's own rules require. Moreover, the EPA has specifically advised you in writing that Exponent's work did not appear to follow EPA guidance on the PRA upon which it purports to be based, and that numerous issues would need to be carefully evaluated.

Do you remember anything like that?

MR. SCOTT: Object to the form.

A. Who's Art Nash?

Q. I couldn't answer that question. I don't know.

A. I -- well, let's -- let's -- let's get the record straight. We've got to find out who Art Nash is. But he looks like he's an environmentalist, and you're -- you're conveying to me that you think he represents the position of the state; is that right?

Q. I'm representing to you that this article is an e-mail from the Texas Attorney General's office or --

A. The Texas Attorney General?

Q. Excuse me. No.

A. You're telling me that Nash is from the Michigan Attorney General's office; is that right?

Q. I'm asking you, sir.

A. I know. This is -- this is --

Q. Do you remember anything like that as a part of the reason why Dow's bioavailability study was not accepted and the consent order was not entered?

A. This is a very complicated issue. For instance, MDEQ hired outside consultants to peer-review their work -- and I think I've written this up in a

paper -- and then they embraced our work, and it was after -- and then they -- they ignored their own consultant's advice after they hired him.

I -- I don't know. I -- for sake of time, I don't think we can do justice to this topic. I didn't -- I'm not aware of anybody who criticized the scientific merit of that bioavailability study. They may have chosen not to use it in setting a soil cleanup level. That's entirely possible. But it wasn't based on the merit of study, in my recollection -- in my recollection.

Q. Is this a true statement, that Dow's 2002 bioavailability study for Mid-Michigan, designed by Paustenbach, would have raised the allowable level of dioxins to 831 parts per trillion?

A. Well, that's true. Well, that's not -- not just that bioavailability study, but the -- the body of scientific evidence would have raised it. And, in fact, it went through. Like I say, it was accepted for a while.

Q. Was it ever overturned or rejected?

A. Well, that's what I said, the governors embraced the staff's proposal not to embrace it after the new governor took office.

Q. Okay.

A. And that study, by the way, the support for the 831 -- because I thought the world ought to really understand the scientific underpinnings -- is published in the peer-reviewed paper that had an enormous number of peer reviewers. It's never received one word of criticism, and I would be happy to put that into the record. But the scientific basis for that is well known.

Q. Do you consider dioxin to be carcinogenic?

A. It's certainly --

MR. SCOTT: Object to form.

A. It's -- 2,3,7,8-TCDD is clearly -- yeah, 2, comma, 3, comma, 7, comma, 8, dash, TCDD, in caps -- is clearly carcinogenic in lots of animal species. The evidence that it increases the cancer risk in humans has been debated for 20 years. It's not resolved.

Q. What's your -- what's your personal belief?

A. I think that thus far, the data remain unclear as to what cancer is being elevated, or if all total -- if all cancer is being elevated, I think the evidence is inadequate to show that. I recognize that EPA believes that the evidence is adequate, but I think there's a very large fraction of the scientific community that doesn't think it's adequate.

And I'm sure it's dose-dependent as well.

I'm not ruling out that it might be. I'm just saying the -- the evidence is -- is still lacking, in my view.

Q. Dr. Paustenbach, I don't believe I have any further questions of you at this time. I may have some more after Mr. Scott has a chance to ask you some. I appreciate your time today.

MR. SCOTT: Why don't we take a break, then, because I'll be more than five minutes.

THE VIDEOGRAPHER: The time is 1:58. We are going off the record. This is the end of tape 5.

(Recess 1:58-2:09 p.m.)

THE VIDEOGRAPHER: The time is 2:09. We are back on the record. This is the beginning of tape 6.

EXAMINATION

BY MR. SCOTT:

Q. Dr. Paustenbach, you were asked questions about Dr. Nicas' methodology in performing the quantitative exposure assessment that he has performed in this case.

Do the factors that are utilized as input into a model -- is that part of the methodology used in a quantitative exposure assessment?

MR. BROWN: Form.

A. Yes.

Q. And can you specifically tell us how the selection of input parameters is implicated in the methodology of a quantitative exposure assessment?

A. Sure. You can have a methodology that relies on one or two different models, but it's not considered a credible scientific method if you haven't inserted the right exposure parameters into that model. So it -- when you're talking about methodology, it's in its totality.

Q. With regard to the model that was used for outdoor near-field exposure assessment by Dr. Nicas, do you have criticisms of the use of that particular model?

A. I -- as I said, that model needs to be modified in order to take into consideration the -- the importance of the strength of wind direction, which isn't so dominant in the indoor environment, where there's a greater opportunity for relatively uniform distribution of the contaminant from the source; whereas in the outdoor environment, there's usually predominant winds that go in one direction or another that -- that take away the ability for it to be a uniform distribution of -- and dilution of -- of the point source material.

So that model, if modified, could be

useful in the near field. The ones I mentioned before have some flaws in the near field, so it would be some blend of the two mathematical approaches that would be needed.

The ones I did mention I should have mentioned were not intended to be used in the near field.

Q. And I'm not going to go through each of the criticisms or flaws which you found in Dr. Nicas' quantitative exposure assessment. But is it fair to say that in each instance when Dr. Nicas selected an input factor, whether it be wind speed or whether it be evaporation rate, whatever it is that you've already mentioned, that his selection biased the results of his exposure assessment upwards?

MR. BROWN: Object to form.

A. Well, he didn't know he's using the most extreme exposure factor; but, on balance, for sure, as I said in -- in testimony, it biased, certainly, away from -- from the central tendency and best estimate, in my view, at least, as I said, by a factor of 10, 100 or 1,000. So certainly there was no opportunity for it to be underestimating the real dose.

Q. With regard to the knowledge, scientific knowledge, regarding the contribution of dermal

exposure to benzene as it relates to inhalation exposure to benzene, generally what is the -- if you can put it in percentage -- what is the accepted percentage?

A. Well, there is no accepted percentage, and there are several reasons for that, but most importantly -- and people seem to forget this when they look at my study of the Pliofilm workers that's in a cohort back '30s, '40s, '50s, '60s, where the concern about benzene wasn't as great, the TLV was lots higher, and there was not a sensitivity to the role of permeation of -- of gloves during that time frame.

So in the early years, the percent contribution -- the absolute contribution of dermal was higher; and on a percent basis back then, I think I said it could be in the 10, 20, 25 percent range compared to inhalation.

And I -- and I think I overestimated, as I said, because I didn't take full account into the -- into the effects of volatilization off the skin.

In the more modern era, you would expect the dermal contribution to be very, very low for -- due to higher awareness, higher personal protective equipment.

And I feel that way even about -- in the

Thompson case, during that era, you would not expect dermal to be a significant contributor to dose unless somebody were -- "significant" meaning 10, 20 percent. You could -- I could see that, but certainly not equaling the inhalation dose.

MR. BROWN: Form, responsiveness.

Q. Are you familiar -- are you familiar with any published scientific studies or information in which dermal absorption has been reported as being equal to or higher than the concomitant inhalation exposure, that is, from the same activities?

A. Not when you're looking at a population cohort. I can -- I have not seen it in a published paper on individual, but certainly in any reasonable workplace the last 30 or 40 years, I've never seen anybody report the dermal contribution to be anywhere near the inhalation contribution, even for benzene, which tends to have a fairly good permeability.

Q. And the flip side of that question, are you familiar with published scientific literature or information which reflects that, in fact, in the modern era -- which you've described, I guess, as the last 30 or 40 years --

A. Yeah, post-OSHA is considered the modern era.

Q. Are you familiar with published scientific

literature or information which reflects that, in fact, the dermal absorption of benzene is a smaller component in this 10 to 20 percent range that you have discussed as opposed to -- or as compared to the concomitant inhalation?

MR. BROWN: Form.

A. As -- as Mark -- I agree with Mark -- this portion of Mark Nicas' deposition. As the overall dose comes down, from an inhalation standpoint, if you're not careful, the dermal can start to creep up in its percent of the total dose.

It may not be appreciable, the two together, but on a percent basis, it can -- it can be greater -- it can be greater than 10, 20 percent.

Q. How far down does the inhalation level have to come --

A. That's a good question.

Q. -- in order for the dermal to rise --

A. Yeah.

Q. -- as a percentage of the total?

A. Yeah. Well, there's a conflict, because in the modern era, when benzene exposures are in the one-half ppm range, we're also using gloves, and there's not much exposure to benzene anyway in the modern era, hasn't been for 20, 30, 40 years, in the

United States in major companies.

Q. Now, I think you have made it clear on this record today that, based upon your review of the materials, while you have not been designated as a causation expert, you do not -- you are not of the opinion that benzene is associated with the disease which Mr. Thompson has -- had; is that correct?

MR. BROWN: Object to form.

A. Based on my respect for Dr. Irons' knowledge of the subject and having read his deposition, I would -- I would believe it's -- they're not related.

Q. Now, let's set that aside.

And if I were to ask you to look at the -- all of the exposure information, all of the concentration information, work habit information, work circumstance information, that's been provided to you and look at these more recent depositions that we've had of Frank Parker, Mark Nicas and others, are you able to -- would you be able to put together some cumulative lifetime exposure to benzene for Mr. Thompson?

A. I could. It would have uncertainty in it, but I could put together what I believe to be a reasonable estimate of his exposure during his lifetime in all workplaces.

Q. How would you do that?

A. You would take -- you would look at his whole work history, and where he alleges exposure, and how he alleges exposure, and -- there would be two ways to do it.

One, you could look at each workplace and look at the conditions that he reports, and then come up with a balance high and low and best estimate for his cumulative lifetime dose, summing all those various exposures in all -- in all -- for all companies.

You could also then -- if you wished, you could then use what you believe to be his likely exposure, making other assumptions. If you -- for instance, one might be that he didn't know he used benzene; he used some other chemical that -- for degreasing, and then that would bound the low end.

So those two approaches would be used across his whole lifetime, which would be time, type of exposure, and a concentration summing up across all the different workplaces. You could do that.

So you'd have one based on professional judgment, exclusively, with -- not necessarily assuming benzene. And you could do one assuming pure benzene in the manner that he used it with the correct parameters.

Q. I don't know whether you noticed this or not,

but in Dr. Nicas' deposition -- have you seen his deposition in both the Nolen and Thompson case --

A. I have.

Q. -- cases?

I -- I don't know whether -- I want to know if you -- there's any way you can reconcile this.

In the Thompson case, at pages 81 and 82 of Dr. Nicas' deposition, he said this -- he was asked this question: What was the source of your estimate of the emission rate of benzene from a bucket in terms of mass percent over time?

His response was this: Mr. Thompson said that he would take a five-gallon bucket and fill it up -- fill it about half full with benzene, and that by the end of the cleaning, a certain percent was lost. I have to pull up the figures. And so I assumed that about half of what was lost from the bucket actually evaporated into the air.

In the Nolen case, when asked a similar question -- and here's the question:

Specifically, as I recall the testimony, it was that a five-gallon bucket was filled about halfway to two and a half gallons, and the tools were washed in the benzene, and during that activity, approximately 25 percent of the two and a half gallons

would somehow end up out of the bucket.

That was my question to him.

Is that consistent with your recollection?

And he said, yes.

And the question: And of that 25 percent, your estimation was that 25 percent of that amount would evaporate into the air directly, correct?

He says, I don't think that was my estimation; I think that was Mr. Nolen's estimation.

So I wanted to follow up.

I said, well, I may not be clear on my question here. I understand Mr. Nolen said 25 percent of the total amount in the bucket was no longer in the bucket, whether it got spilled or evaporated, correct?

Correct.

Then you took that testimony and you made some calculations in which part of the calculations were that 25 percent of the 25 percent that was no longer in the bucket evaporated directly.

We go on through some testimony to that effect, but the end of his answer was this: I did deduce that of the 25 percent that didn't splash on the ground that had evaporated -- that had -- that 25 percent of the amount had evaporated.

My question was a little unclear, but is

there any reasonable explanation for why, in the case of Mr. Thompson, the benzene that came out of the bucket would evaporate at 50 percent and the benzene that came out of the bucket in the case of Mr. Nolen would evaporate at 25 percent?

MR. BROWN: Object to form.

A. No, I asked myself the same question. But you can see that that's what he did, was the emission rate or so-called G generation rate, is so much higher in Thompson, so his assumptions were clearly different.

Q. And you pointed that out earlier about the high emission rate in Thompson.

What are your criticisms of this literally half of the benzene that comes out of the bucket evaporating?

MR. BROWN: Object to form.

A. I don't recall if it's exactly half, but, nonetheless, the high generation rate, the criticism is that it doesn't make sense on many levels.

One, given the distribution that he used, that would create a near field atmospheric concentration that was over 1,000 ppm at times. So that's one criticism. I don't think it reached that level. You'd see other things happening if it did.

Number 2, it doesn't need to reach that

level, and he could have used some other methodologies for estimating the near-field concentration from that bucket without having to rely on that testimony.

And then there's no consideration in there for temperature, which I think was a factor that should have been considered as a reality check on his emission estimates.

Lastly, the -- the quantity that he has being released per minute is very inconsistent with the quantity released through normal interactions with volatile chemicals and is shown in my Table 6-1 in the comments.

You see that even when you're applying, in a thin film, volatile chemicals, the emission rate is not as high as what he has from out of a bucket, which you wouldn't expect that to happen.

Q. Is it fair to say that Dr. Nicas' evaporation -- is it emission rate or evaporation rate? I'm not sure which one's the --

A. You can go with either one. It's a rate -- a loss of -- emissions lost due to evaporation.

Q. Dr. Nicas' emissions lost to evaporation rate is not only different than and inconsistent with information scientifically available about benzene, but also inconsistent between the Nolen and Thompson cases

by a factor of 2?

MR. BROWN: Object to form.

A. That's -- that's true. And he -- he -- as I recall, he said -- he offered some explanations for that, but they didn't seem to be adequate to me to -- to deal with -- with the issue.

Q. Assuming the same temperature and all of that, does benzene evaporate at the same rate, whether it's Mr. Nolen who is using it or Mr. Thompson?

MR. BROWN: Form.

A. It would be the same volatilization rate, assuming all other conditions are the same.

Q. Sure.

I want to talk just quickly about DuPont. Are you familiar with the occupational health and safety record of DuPont over many, many years?

A. Well, I have firsthand knowledge of it back to 1974, when I began my industrial hygiene and chemical engineering career.

Then I have reading knowledge of it going back much longer than that.

And then I have, through my major professors in school who worked with DuPont for many, many years, and having met the old-time DuPont people that worked there back in even -- as far back as the

'50s, I've grown to know quite a bit about the company.

Q. Have you reached opinions with regard to the state of knowledge that DuPont had with regard to benzene based upon the -- the information you've just described in the 1950s, '60s, '70s?

A. DuPont would have been as knowledgeable as nearly any firm, at least in the occupational medicine, toxicology and industrial hygiene areas. They would have been as -- they should have been and I know they were virtually as knowledgeable as anybody about the hazards of benzene.

Q. Have you reached opinions, based upon the information that you've described for us, with regard to how much DuPont cared about the safety of their own employees and others on their premises?

MR. BROWN: Object to form.

A. As I mentioned, DuPont, going back a long, long time, has been considered perhaps the world leader on safety issues, and I'm differentiating that from hygiene. They have a -- great industrial hygiene and tox programs. But with respect to safety, they virtually have written the book for almost 50 years.

As you may recall, the origins of the company required them to be very knowledgeable about safety.

Q. Tell the jury what you mean by that.

A. Well, they had had an unfortunate series of explosions, and the management said, this won't happen again. We're going to have the best safety program in the world for as long as the company stays in business, and they pretty much stuck to that.

And from when I was a young professional, we all -- every -- virtually every Fortune 50 company in the chemical and pharmaceutical business used the DuPont methodologies and criteria and benchmarks as our goal for -- for what the best safety and health standards were. I mean, they were just -- that's always been a hallmark of the firm.

Q. Having said all of that, is it inconsistent with your knowledge of the level of knowledge that DuPont had about the potential health effects of benzene, exposure to benzene, and the level of care that DuPont showed about occupational safety and health issues that the kinds of events that have been described in this case would have occurred on a DuPont plant?

MR. BROWN: Object to form.

A. Well, you can't rule out that they occurred, but they wouldn't have occurred with their knowledge, at least their knowledge by their safety and health

professionals, and probably not by most of their employees.

Their employees get a rigorous training program. So, normally, you oversee contractors. And as I said previously, the -- the thought that they could walk up to a company to a can of benzene, draw it out at their will and use it in that manner with their knowledge is -- is just inconceivable to me.

MR. BROWN: Responsiveness.

Q. Now, having said all of that, if that happened, if these circumstances which have been described actually occurred, washing hands and tools in pure benzene for 17 1/2 minutes or 22 1/2 minutes, or however long Dr. Nicas thinks it was -- if those things occurred on a regular basis, and DuPont was not only aware of it but actually provided the benzene for those tasks, do you have an opinion as to whether DuPont's conduct was acceptable in industrial norms for the time?

MR. BROWN: Form.

A. If they did, it wouldn't be acceptable.

MR. SCOTT: I pass the witness.

EXAMINATION

BY MR. BROWN:

Q. With regard to your criticism of Dr. Nicas and

what you characterize as overestimate -- his overestimates of Thompson's exposure, you said it is in orders of magnitude 10 times, 100 times, up to 1,000 times. Do you recall that testimony?

A. Yes.

Q. Which is it, Doctor? Is it 10 times or is it 1,000 times?

A. I'd have to go back and look, but it's pretty clear from my testimony, when I said it was twofold or fivefold, was if you consider the weather factor, if you consider -- I -- I personally believe it's probably 1,000 -- nearly a thousandfold too great only because I don't think, given the locations of the allegations about benzene use, of pure benzene in the way it was described -- I believe they probably cleaned their tools with something that had very low concentrations of benzene, and he would have used a traditional degreasing solvent. That's why it could approach a thousandfold.

But in that kind of analysis, you could say, okay, let's assume that it was pure benzene. Then I -- then I said, okay, it's at least overestimated by other factors because he either got the time and the location wrong by a factor of 2 -- because I don't agree that he was there two years -- or the wind speeds

weren't appropriate, or the model didn't yield the correct answer, or the dermal uptake was not calculated properly, all those various things.

So it's going to vary depending on which one of the assumptions you choose to not embrace. If you -- if you don't embrace the vast majority of them, including the fact he didn't use pure benzene, it's going to be at least by a factor of a thousandfold off.

MR. BROWN: Let me object to responsiveness.

Q. You can't be any more precise to this jury in saying it's either a tenfold rate error or a thousandfold rate error?

A. If I wanted to be generous, I'd say it's at least ten. That's assuming it's pure benzene, and there's wall effects and building effects, and the man put his hands in the -- in the benzene.

It's certainly tenfold too high, more likely -- and then if you adopt only half the assumptions to be off-base, then you're going to be up to 100. But, certainly, if he's not using pure benzene, it's at least off by a thousand.

MR. BROWN: Let me object to responsiveness once again.

Q. You can't be any more precise than saying it's

a tenfold error mistake or 100 or a thousandfold error mistake on the part of Dr. Nicas in his calculations; is that right?

MR. SCOTT: Object to form.

A. I think my answer's clear. I -- depending on what assumptions you want to believe in, it's no less than ten and it's at least as great as a thousand.

Q. And all this without you ever putting a pencil to paper, correct?

A. I put plenty of pencil to paper, as you'll see when you examine, as I substitute the correct answer for those various variables without going over his whole work history. See, I'm just critiquing the two sites that he critiqued.

Q. All this without putting a pencil to paper to determine your own exposure estimate?

A. Because I don't have to.

Q. But you said you could do it, correct?

A. Oh, sure.

Q. And if you were to do it, can you think of any exposure that Mr. Thompson would have had to benzene that would have been greater to those -- than those exposures that he described while working with benzene from the 55-gallon drums during the late '60s and '70s?

A. Are you asking can I imagine a scenario where

he could get exposed more?

Q. No, sir, I'm asking you based on his knowledge of his work history and the fact that you say you could do an exposure model of his lifetime exposure, would there be in your model, in your work, any exposures that -- to benzene greater than his exposures while he was working with benzene from the 55-gallon drums during the late '60s and early '70s?

MR. SCOTT: Objection, form.

A. No.

Q. You said -- you were asked some questions by Mr. Scott about whether or not Dr. Nicas consistently biased everything in favor of higher exposures. Do you recall that?

A. Yes.

Q. Do you remember when he was asked to quantify his exposures out at the -- Texas US Chemical and based on John Thompson's testimony that I worked out there from four to six months? Do you remember what he used as the number of months that he worked out there?

A. No, but my testimony to Mr. Scott was, he didn't know he's picked the highest value. Mr. Scott thought that was going to be my answer, but he didn't always do that.

Q. Yeah, he didn't. In that -- in that scenario

I just described, he picked five --

A. That's right.

Q. -- which is right in the middle of four and six.

A. Yeah. There were other times he picked in the middle as well.

Q. And that -- that is not biasing -- biasing his calculation or model in the highest sense or in favor of the highest exposure level, is it? He could have picked six months?

A. Oh, as I said, he didn't know he's picked the highest value.

Q. You said you had firsthand knowledge of DuPont's safety programs in 1974 when you started as an industrial hygienist. What do you mean?

A. In 1974, I was a full-time chemical engineer at Eli Lilly, and I began to be self-taught in industrial hygiene. We were told right away that the -- that the criteria for acceptability, we were going to peg against the work practices of DuPont, and we strived to -- to try to achieve their guidelines for lost-time injuries.

I mean, it was no secret that Kodak, DuPont and Dow were going to be the benchmark that Lilly chose to meet, and it was well-known in the

industry that those three companies set the bar.

Q. You never worked for DuPont, correct?

A. No, I didn't, but I was offered a couple of jobs at DuPont, and I know their program very well.

Q. All right. What I'm saying is, you -- you don't know what -- DuPont's reputation as having actually worked there because you never worked there, correct?

MR. SCOTT: Object to form.

A. No, I absolutely know their reputation.

Q. I mean --

A. I didn't work there, and I didn't receive firsthand training.

I will also tell you that I did have to take and pass DuPont training programs in certain areas at -- as an employee at Lilly, and, for that matter, I think even at Stauffer. In other words, they sold some of these programs later on to the outside world.

Q. Let me -- let me be more specific. You never worked or went --

A. Very clearly, I was not on their payroll.

Q. And, very clearly, you were never in the DuPont Sabine River Works plant, correct?

A. That's right.

Q. You don't know what their policies were with

regard to protecting contractors or caring about employees, do you?

A. Only the ones that I've provided you.

Q. Okay. Did you know that down in that plant they had a policy not to monitor contract workers for exposure to benzene until after 1980?

A. It's shocking that they even chose to do it in 1980. That's not the standard practice in the industry. In fact, it's discouraged.

Q. Well, I'm saying --

A. If they did it in 1980, that's setting the bar way high.

Q. If you thought -- if you thought that somebody was caring about the contractors who come out and work in the plant and whether they were being overexposed to chemicals, they could have monitored those workers, couldn't they?

A. I'll stick with my testimony. If they monitored contract workers after 1980, that's a standard of care that exceeds 90 percent of the industry, because there's no reason that those -- those that hire contractors, they have no responsibility for doing that. That's the employer's responsibility. And if DuPont did that, that's -- that illustrates exemplary industrial hygiene and safety practices.

Q. There's no reason to do that other than to save people's lives, correct?

MR. SCOTT: Object to the form.

A. To set the bar high as to what practices they want to make sure -- it's a guarantee that they're getting the kind of compliance with the contracts that they normally write with contractors.

Q. Would you want the jury to believe that, based on your testimony and your knowledge of being an outsider looking in at DuPont's reputation for health and safety, that there would be no way that people in that plant would have been using benzene to wash their hands and tools during the '50s, '60s and '70s?

MR. SCOTT: Objection, form.

A. No, I much prefer DuPont have a fact witness for that site to testify on this issue.

Q. If C.V. Dancer testified he used benzene out of 55-gallon drums in that plant and he died -- he died of multiple myeloma, would you have any reason to dispute that?

A. If who said that?

Q. A guy named C.V. Dancer.

MR. SCOTT: Object to the form.

A. Well, I mean, if an employee -- if somebody gets -- you're saying AML?

Q. This man had multiple myeloma.

A. Oh, multiple myeloma. Well, there's -- the causal link between multiple myeloma and benzene is -- is slim to none, anyway, so he'd be wrong about that in the first place.

MR. BROWN: Well, let me object to responsiveness.

Q. If he testified he used benzene --

A. This is an employee?

Q. -- out of 55-gallon drums -- yes, sir.

A. Yeah. I would say he was just erroneous with respect to cause and effect --

Q. What about --

A. -- even if it were true.

Q. No, I'm talking about if he was using benzene in that plant --

A. Oh.

Q. -- out of a 55-gallon drum, would you have a reason to dispute it?

A. No.

Q. If Vernon Rachel said he used benzene out of a 55-gallon drum while he worked in that plant, would you have any reason to dispute him?

MR. SCOTT: Objection, form.

A. Only -- only if there was fact testimony from

the plant that said that just couldn't happen. I don't have anything -- as you said earlier, I don't have written documentation that proves that that didn't happen. All I can do is weigh the credibility of the depositions.

Q. If James Levings used benzene to clean his glassware in the lab, would you have any reason to dispute that, during the 1960s and '70s?

MR. SCOTT: Object to form.

A. That's -- that's not that un- -- that wouldn't necessarily be that uncommon in the lab at that time period. In fact, it was -- it was -- it was not unusual.

Q. If Mr. A.D. Snider used benzene out of 55-gallon drums in that plant and died of acute myelogenous leukemia, would you have any reason to dispute his testimony?

MR. SCOTT: You haven't told him what it was.

A. What testimony?

Q. The testimony that he used benzene out of 55-gallon drums and died of AML.

MR. SCOTT: Objection, form. You didn't tell him that.

Q. Excuse me.

A. I have -- I have no basis to say that it didn't happen other than I've said they're a sophisticated user, and, in my experience, it's extremely unlikely that contractors have free access to any dangerous chemical like that as a contractor without it having been condoned by the facility. It just doesn't happen.

Q. Is it shocking to you that so many people -- that I could go down the list, if we need to talk about more -- that at that facility would have used benzene out of 55-gallon drums as a cleaner?

MR. SCOTT: Object to the form.

A. Based on everything I know about DuPont, it's shocking that outside contractors had free access to benzene and to use it in that manner week after week, yes, I'm surprised.

Q. Is it shocking to you that, based on what the knowledge of -- with regard to health hazards of benzene were in the '60s and '70s that anybody could have been using it as a cleaner to clean their tools and clothes with?

MR. SCOTT: Objection, form.

A. Not in the manner that's been described for Mr. Thompson, Mr. Nolen, and if you say these other people said the same thing, I'm very surprised.

Q. All right. Do you agree that the best place to have a warning to warn workers about the health hazards of benzene or any other chemical would be at the source where workers would go to get the -- the chemical?

MR. SCOTT: Object to the form.

A. It usually isn't that simple. The best information is derived out through training programs and awareness programs of their direct employer.

MR. BROWN: Let me object to responsiveness.

Q. My question was, would you agree that the best place to have a warning is to have it at the source of where the workers would go to get it?

MR. SCOTT: Objection, form.

A. Yes. Yeah, I think -- I think so.

Q. And if there was a 55-gallon drum, there should be an adequate warning right on the side of it telling him, in the case of benzene, don't use this as a cleaner; it can cause cancer and fatal blood disease; don't use without respiratory protection? All of those things should have been told to Mr. Thompson, correct?

MR. SCOTT: Object to the form.

A. Most of those things should have been on the warning label, not all of them but most of them.

Q. Which ones should not have been on the warning label?

A. It depends on time and history. One of the ones that you mentioned was causes cancer. That wouldn't have been on at certain time periods because it wasn't known to be true, nor was it necessarily expected to be on the warning label. You have to look at the requirements at the time.

MR. BROWN: I don't have any further questions of you at this moment. Thank you for your time again.

THE WITNESS: You bet.

MR. SCOTT: No more here.

THE VIDEOGRAPHER: The time is 2:43. We are going off the record. This will conclude the deposition for today.

(Deposition concluded at 6:29 p.m.)

CHANGES AND SIGNATURE

WITNESS NAME: DENNIS PAUSTENBACH, Ph.D., DABT, CIH

DATE: 2-23-10

PAGE	LINE	CHANGE	REASON

I, DENNIS PAUSTEN BACH, Ph.D., DABT, CIH, have read the foregoing deposition and hereby affix my signature that same is true and correct, except as noted above.

_____

DENNIS PAUSTENBACH, Ph.D., DABT, CIH

THE STATE OF _____)

COUNTY OF _____)

Before me, _____, on this day personally appeared DENNIS PAUSTENBACH, Ph.D., DABT, CIH, known to me (or proved to me under oath or through _____) (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that they executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office this _____ day of _____, 2010.

_____

NOTARY PUBLIC IN AND FOR
THE STATE OF _____

My commission expires: _____

NO. B-176,114

RICHARD E. NOLEN AND WIFE, NITA NOLEN,	)	IN THE DISTRICT COURT
Plaintiffs,	)	
VS.	)	JEFFERSON COUNTY, TEXAS
E.I. DUPONT DE NEMOURS & COMPANY, ET AL.	)	
Defendants.	)	60TH JUDICIAL DISTRICT

REPORTER'S CERTIFICATION
DEPOSITION OF DENNIS PAUSTENBACH, Ph.D., DABT, CIH
FEBRUARY 23, 2010

I, Therese J. Casterline, Certified Shorthand Reporter in and for the State of Texas, hereby certify to the following:

That the witness, DENNIS PAUSTENBACH, Ph.D., DABT, CIH, was duly sworn by the officer and that the transcript of the oral deposition is a true record of the testimony given by the witness;

That the deposition transcript was submitted on _____, 2010, to the witness or to the attorney for the witness for examination, signature and return to me by _____, 2010;

That the amount of time used by each party at the deposition is as follows:

Mr. Brown - 5:42

Mr. Scott - 0:27

That pursuant to information given to the deposition officer at the time said testimony was taken, the following includes counsel for all parties of record:

Mr. Darren L. Brown, attorney for the Plaintiffs

Mr. Robert Scott, attorney for the Defendant Univar USA Inc.

I further certify that I am neither counsel for, related to, nor employed by any of the parties or attorneys in the action in which this proceeding was taken, and further that I am not financially or otherwise interested in the outcome of the action.

Further certification requirements pursuant to Rule 203 of TRCP will be certified to after they have occurred.

Certified to by me this 24th day of February, 2010.

Therese J. Casterline, Texas CSR 5001, Expiration Date: 12-31-11
WORLDWIDE COURT REPORTERS, INC.
Firm Registration No. 223
3000 Weslayan, Suite 235
Houston, Texas 77027
(713) 572-2000

FURTHER CERTIFICATION UNDER RULE 203 TRCP

The original deposition was __ was not __ returned to the deposition officer on _____, 2010;

If returned, the attached Changes and Signature page contains any changes and the reasons therefor;

If returned, the original deposition was delivered to Mr. Darren Brown, Custodial Attorney;

That $_____ is the deposition officer's charges to the Plaintiffs for preparing the original deposition transcript and any copies of exhibits;

That the deposition was delivered in accordance with Rule 203.3, and that a copy of this certificate was served on all parties shown herein and filed with the Clerk.

Certified to by me this ____ day of _____, 2010.

Therese J. Casterline

Therese J. Casterline, Texas CSR 5001, Expiration Date: 12-31-11
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