

DEPOSITION OF
KENNETH A. MUNDT, Ph.D.
LONG BEACH, CALIFORNIA
OCTOBER 13, 2009

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FILE No.: A3074BC

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

THOMAS WAYNE REESE,
Plaintiff,
vs.
GANS INK & SUPPLY CO., a California
corporation, and DOES 1 through 200,
inclusive,
Defendants.

DEPOSITION of KENNETH A. MUNDT, Ph.D., taken on behalf
of the PLAINTIFF, at 401 East Ocean Boulevard, Suite
800, Long Beach, California, commencing at 9:05 a.m.,
on Tuesday, October 13, 2009, before Sheri A. Ply, CSR
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I N D E X

WITNESS: KENNETH A. MUNDT, PH.D.

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INFORMATION REQUESTED:
(NONE)

QUESTIONS WITNESS INSTRUCTED NOT TO ANSWER:
(NONE)

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1 LONG BEACH, CALIFORNIA, TUESDAY, OCTOBER 13, 2009

2 9:05 A.M.

3 * * *

4 KENNETH A. MUNDT, PH.D.,

5 having been first duly sworn, was examined

6 and testified as follows:

7
8 EXAMINATION

9 BY MR. METZGER:

10 Q Would you introduce yourself, please.

11 A Kenneth Mundt. I am an epidemiologist by
12 training and practice.

13 Q And you are a Ph.D.; correct?

14 A That is correct.

15 Q Do you prefer to be called doctor, therefore?

16 A It is appropriate. I don't have a preference.

17 Q Okay. Since it is appropriate, I will call you
18 Dr. Mundt.

19 Dr. Mundt, I don't believe we have met before,
20 have we?

21 A We have not.

22 Q Okay. So I never had the pleasure of deposing
23 you before, okay.

24 So do you have a curriculum vitae with you?

25 A Yes, it is on the DVD that I provided with my

1 entire file.

2 MR. METZGER: That is not going to work, John.
3 Come on. We can recess and have all this stuff printed
4 out, but I mean --

5 MR. GRANNIS: Can you have your CV E-mailed to
6 us or faxed to us here?

7 MR. METZGER: That is not the point. I mean
8 that is going to require him to make a call. I want to
9 get this deposition going. At least that is usually
10 produced; not just given on a CD.

11 So if we need to recess or --

12 MR. GRANNIS: In the time we have been talking,
13 Dr. Mundt could have called his office and asked to have
14 it faxed here. We would be glad to do that. It is on
15 the disk.

16 Q BY MR. METZGER: Dr. Mundt, is your curriculum
17 vitae on this disk?

18 A Yes, sir.

19 Q Is there a publications list with that
20 curriculum vitae?

21 A Yes, there is.

22 Q Is that a separate document or is it
23 incorporated within the CV?

24 A Part of the same.

25 Q Is there a list of the cases that you have

1 testified on this CD?

2 A There is a list of trial testimony.

3 Q And deposition testimony?

4 A Not deposition testimony.

5 Q Where is that?

6 A I have -- I have a list of all testimony in the
7 past four years.

8 Q Where is that?

9 A That is in my office. I don't have it -- trial
10 testimony on this file.

11 Q We are going to need that so I will ask you to
12 call for that.

13 What else is on the CD that you have provided
14 me?

15 A A listing of all of the case materials that I
16 was provided by counsel, files containing all of the
17 articles in which I rely to form my opinions.

18 Q Is there a list of those?

19 A No. They are actual copies of the articles.

20 Q Is there an index or bibliography?

21 A No.

22 Q Okay. What else is on the CD?

23 A Copies of all correspondence and billings in
24 this matter.

25 Q What else?

1 A This statement, summary of opinions.

2 Q What else?

3 A I believe that is it.

4 Q Okay. We are going to go off the record and we
5 will print out this stuff so we can do your deposition.

6 (Brief recess.)

7 MR. METZGER: Back on the record.

8 (Deposition Exhibit 1 was marked for
9 identification.)

10 Q BY MR. METZGER: Dr. Mundt, is Exhibit 1 your
11 curriculum vitae?

12 A Yes, sir.

13 Q Is it current?

14 A Yes, it is.

15 Q Is it complete?

16 A I believe so.

17 Q Is it accurate?

18 A Yes, I believe so.

19 Q When was it prepared, the last updated?

20 A Within a month.

21 Q Are there any articles or presentations or
22 abstracts that are not listed on here?

23 A I believe it is up to date.

24 Q So is the answer to my question no?

25 A It is current. I don't recall the wording of

1 your question.

2 Q I asked you if there are any publications,
3 articles, abstracts or presentations that you have given
4 or prepared that are not listed on this?

5 A I am sorry. It is complete. It is up to date.
6 Therefore, there are no other presentations or abstracts
7 that have taken place that are not identified on this.

8 Q Okay. Have you conducted any epidemiologic
9 studies regarding non-Hodgkin's lymphoma?

10 A I have conducted several epidemiological
11 studies in which non-Hodgkin's lymphoma was among the
12 diseases of interest.

13 Q Were these all cancer mortality studies, that
14 type of thing?

15 A Mostly, yes.

16 Q Okay.

17 A I also conducted a review of the literature on
18 perchloroethylene and -- perchloroethylene that looked
19 at various categories of cancers.

20 Q There is a difference between an epidemiologic
21 study and a review, isn't there?

22 A Absolutely.

23 Q I am asking about epidemiologic studies so
24 let's stick with that for the moment, please.

25 Have you ever conducted a case control study of

1 non-Hodgkin's lymphoma in patients for deaths?

2 A No, I have not.

3 Q Have you ever conducted any epidemiologic study
4 that was specifically designed to investigate risks
5 specifically for non-Hodgkin's lymphoma?

6 A Specifically and excluding other causes of
7 death or disease?

8 Q Yes.

9 A That is correct, I have not.

10 Q Okay. Have you conducted any epidemiologic
11 studies which investigated disease outcomes amongst
12 benzene-exposed workers?

13 A Yes, I have.

14 Q What studies are those?

15 A There is a series of publications based on a
16 large complex study of river workers in Germany and
17 portions of the cohort workers were presumed to have
18 been exposed to benzene among many other solvents and
19 chemicals.

20 Q Would you show me on your publications list
21 where those publications are.

22 Is it more than one?

23 A Yes. And I can't recall specifically which of
24 the publications address non-Hodgkin's lymphoma
25 specifically.

1 Q Do you recall that any of them do?

2 A I believe, yes.

3 On page 14, the penultimate entry is authored
4 by Straif. This Part 2 of a two-part article covers
5 mortality from non-respiratory cancers.

6 Q All right. Any others?

7 A On page 15, the third entry by Weiland is from
8 the same study, as is the sixth, I believe, also by
9 Weiland.

10 I think those are the three that provide -- I
11 am sorry. There is one more.

12 On page 14 again, middle of the list, I'm the
13 first author of the study of women in the German rubber
14 industry.

15 Q You are the first named author on that?

16 A Correct.

17 Q Okay. So it is those four studies?

18 A Those are the most likely to contain results on
19 NHL.

20 Q Did you review the actual data regarding
21 non-Hodgkin's lymphoma in those publications of yours
22 with respect to your opinions in this case as to whether
23 benzene can cause non-Hodgkin's lymphoma?

24 A That is a complicated question. If you could
25 clarify what you mean by did I examine the data on

1 non-Hodgkin's lymphoma.

2 Q I am asking if you actually looked at the data
3 in your own publications regarding benzene and
4 non-Hodgkin's lymphoma in preparation for your opinions
5 in this case on the causal relationship between benzene
6 and non-Hodgkin's lymphoma.

7 Did you do that or not?

8 MR. GRANNIS: It is argumentative. Lacks
9 foundation.

10 THE WITNESS: I am sorry. The way I view data
11 are the raw materials of a study we gather, so I didn't
12 know if you were asking if I looked at the death
13 certificates that reported NHL.

14 I think that would have been -- that is how I
15 interpreted your use of the word "data."

16 Did I review the published results in these
17 publications in preparation for this deposition, no, I
18 did not.

19 Q BY MR. METZGER: Are you able to tell me what
20 your own studies that you just identified indicate
21 regarding whether there is an increased risk of
22 non-Hodgkin's lymphoma among benzene-exposed rubber
23 workers in any of these studies?

24 MR. GRANNIS: Argumentative.

25 THE WITNESS: Not from memory, no.

1 Q BY MR. METZGER: Okay. Are you more familiar
2 with the epidemiologic studies regarding benzene and
3 non-Hodgkin's lymphoma that have been published by other
4 authors than yourself?

5 MR. GRANNIS: Argumentative. Lacks foundation.

6 THE WITNESS: I am very familiar with my study.
7 I don't recall one of hundreds of specific results.

8 Q BY MR. METZGER: Okay.

9 A I am also familiar with other's studies of
10 benzene-exposed populations and the range of causes of
11 disease and death they examined.

12 Q Okay. You are currently a principal of
13 Environ; correct?

14 A Yes, sir.

15 Q And that is an environmental consulting firm?

16 A That is correct.

17 Q And Environ has as clients major oil companies
18 and chemical companies; is that correct?

19 MR. GRANNIS: Argumentative.

20 THE WITNESS: Not exclusively but including oil
21 companies as clients, correct.

22 Q BY MR. METZGER: Before the deposition began
23 you provided me or counsel provided me an indication
24 that your check for today's testimony should be made
25 payable to Environ International Corp. with its tax

1 identification number; is that correct?

2 A I provided Mr. Grannis with that information
3 this morning.

4 Q So this is your handwriting?

5 A No, it is not.

6 Q Okay.

7 A I read it from an E-mail that I received.

8 Q And he wrote it down?

9 A And he wrote it down.

10 MR. GRANNIS: Poorly, I might add.

11 MR. METZGER: Off the record.

12 (Interruption in the proceedings.)

13 MR. METZGER: Back on the record.

14 Q Are you employed full time by Environ?

15 A Yes, sir.

16 Q And how many hours a week do you work in your
17 work for Environ?

18 A Between 50 and 60.

19 Q Do you have any other professional work outside
20 of Environ?

21 A No, sir.

22 Q Your curriculum vitae indicates that you have
23 an appointment as an adjunct professor in the department
24 of epidemiology at the University of North Carolina at
25 Chapel Hill; is that correct?

1 A Yes, sir.

2 Q Where do you live?

3 A Amherst, Massachusetts.

4 Q How frequently do you go to the University of
5 North Carolina to serve as an adjunct professor?

6 A Rarely.

7 Q How rarely?

8 A Once per year.

9 Q When is the last time you went there?

10 A Couple years ago, a year ago.

11 Q And what did you do on that occasion?

12 A Colleagues in the department of epidemiology
13 and I prepared a large research proposal that was not
14 ultimately funded.

15 Q What was that proposal for?

16 A It was for a large study of health of workers
17 in the semiconductor industry.

18 Q And from whom were you seeking funding for that
19 study?

20 A I don't recall specifically, but it was from
21 the trade association of semiconductor interests.

22 Q So when you went there on that one occasion a
23 year or two ago, did you actually do any teaching on
24 that occasion?

25 A On that occasion, no.

1 Q When is the last time that you actually taught
2 a course -- strike that.

3 Have you taught a course as an adjunct
4 professor at UNC?

5 A I have not, no.

6 Q Okay. Are you in fact still an adjunct
7 professor at UNC?

8 A Yes, sir. I think the CV accurately represents
9 that my appointment is from 2007 to 2012.

10 Q I see.

11 Are you presently scheduled to teach any
12 courses in the future at UNC?

13 A No, sir.

14 Q When you were appointed an adjunct professor
15 for the period 2007 to 2012, did you have any
16 understanding whether you would be expected to teach
17 courses at UNC?

18 A Yes, sir.

19 Q What was your understanding?

20 A That it was not expected because of my
21 location.

22 Q Do you have an understanding as to why you were
23 appointed an adjunct professor at UNC if you would not
24 be teaching any courses there?

25 A Yes, sir.

1 Q What is that?

2 A Adjunct faculty provide a wide range of service
3 and some include teaching. My appointment at UNC does
4 not include teaching responsibilities.

5 Q What does it include?

6 A It includes advising, consulting, preparing
7 exams for doctoral candidates in advanced areas in which
8 I am an expert or at least have something to contribute
9 as a knowledgeable practitioner.

10 I provide networking of resources and contacts
11 for my clients and my colleagues to a mutual benefit of
12 the university and other professional activities of the
13 department and school.

14 Q Are you currently advising any doctoral
15 candidates?

16 A No, I am not.

17 Q When is the last time that you did?

18 A Probably in the same time frame of a year or
19 two ago.

20 Q Are you presently providing any consultation
21 for the university?

22 A Yes, I am.

23 Q What is that?

24 A There is a joint project that Environ is
25 pursuing with the school of public health at UNC that I

1 helped introduce or arrange. This occurred early part
2 of this year.

3 Q What is the project?

4 A It is the further development of some
5 sophisticated models that pertain to, I think, exposure,
6 dispersion of exposure generated from various sources.

7 Q Is there any particular chemicals that are the
8 subject of that project?

9 A I don't know the details of that. I was much
10 more participating as a matchmaker than as a
11 practitioner on that project.

12 Q You mean you were hooking up Environ with the
13 university for this project?

14 A That is correct.

15 Q Okay. Any other consultation that you have
16 provided for the university?

17 MR. GRANNIS: Vague.

18 THE WITNESS: Not that I can think of right
19 now.

20 Q BY MR. METZGER: Okay. Are you currently
21 preparing any exams for the university?

22 A I am not now, no.

23 Q When is the last time that you did that?

24 A I believe you asked me that already. It was a
25 year or two ago.

1 Q And what exam or exams did you prepare?

2 A My specialty is in occupational epidemiology
3 and the exams that I would prepare are limited to
4 questions on occupational epidemiology for written
5 doctoral exams.

6 Q I am not asking what you would prepare; I am
7 asking what you did prepare.

8 Did you actually prepare any exams regarding
9 occupational epidemiology for UNC within the last two
10 years?

11 A I'm not sure if it was within the last two
12 years, but I certainly have prepared exam questions for
13 that purpose.

14 Q These were for doctoral candidates?

15 A Yes.

16 Q How many?

17 A I don't recall. Not a large number.

18 Q Less than five?

19 A Two or three I would say.

20 Q And the rest of your activities for the
21 university are networking of resources and contacts and
22 some promotional work; is that correct?

23 A That is my primary role.

24 Q You also on your curriculum vitae list being an
25 adjunct associate professor in the department of

1 epidemiology at the University of Massachusetts at
2 Amherst from 2005 to the present.

3 Is that accurate?

4 A Yes, sir.

5 Q Are you currently teaching any courses at
6 University of Massachusetts, Amherst?

7 A Not this semester.

8 Q When is the last time that you taught courses
9 there?

10 A Last academic year.

11 Q That would be the year 2008 to 2009?

12 A Correct.

13 Q Why are you not teaching a course this year?

14 A I will teach a course in the next semester.
15 This semester I am very busy and this is a voluntary
16 activity.

17 Q I see.

18 Has it been your practice to teach one course
19 per year at UMASS?

20 A No, sir.

21 Q How many courses per year in the last three
22 years have you taught?

23 A I have only taught two courses in the last
24 three years.

25 Q Okay. What were those classes?

1 A They were essentially the same class, different
2 years on the use of epidemiology in decision making.

3 Q Was that a graduate level course?

4 A Yes.

5 Q Was that an independent study or a regular
6 course listed?

7 A It was a classroom class, met once a week for
8 three hours.

9 Q For how many weeks?

10 A I believe total of 15.

11 Q Did you teach each of those sessions or were
12 you an invited speaker at one or a few of them?

13 A I was one of the organizers of the course.

14 Q How many organizers were there?

15 A There were two others.

16 Q Who were they?

17 A Dr. Sulski and Dr. Silverberg, also both
18 adjunct faculty members.

19 Q What are their specialties?

20 A Dr. Silverberg is a physician whose specialty
21 is outcomes research, a branch of epidemiology that
22 attempts to match what is known scientifically with what
23 is practiced clinically.

24 Dr. Sulski is a colleague of mine at Environ at
25 my office in Amherst. Her specialty is in epidemiology

1 concepts and methods mainly as applied to research in
2 musculoskeletal injury disorders.

3 Q Okay. 15 sessions that this course comprise,
4 how many of those sessions did you actually teach
5 yourself?

6 A Keep in mind this was a shared course. I think
7 I had full responsibility for one session and partial
8 responsibility for two others.

9 Q Okay.

10 A As well as participation in the seminar portion
11 of the class, which is more discussion oriented.

12 Q Other than the three organizers, were there
13 other people who actually taught the course?

14 A I believe there were one or two. I don't know
15 exactly how many, a few, and other invited speakers.

16 Q Okay. For the one session for which you have
17 full responsibility, what was the subject of that
18 session that you taught?

19 A It was either of the following two: The IARC
20 evaluation process or the emerging use of epidemiology
21 in European legislation known as REACH.

22 It is an acronym for Registration
23 Authorization --

24 Q Okay.

25 A -- et cetera, as it compares to regulation and

1 use of epidemiologic evidence under EPA in the U.S.

2 Q Have you ever sat on an IARC committee other
3 than as an observer?

4 A No, I have not.

5 Q Have you sat on any of the implementing
6 committees for REACH?

7 A No.

8 Q In the courses which we have just been
9 discussing, did you in any way discuss benzene or
10 non-Hodgkin's lymphoma?

11 A No.

12 Q Okay. Other than the rubber worker
13 epidemiologic studies which you have done and which you
14 have identified on your curriculum vitae, do you have
15 any other publications which in any way relate to
16 benzene?

17 MR. GRANNIS: Overbroad. Vague.

18 THE WITNESS: Not exclusively or directly.
19 There probably are a number where indirectly benzene may
20 be relevant; for example, meta-analyses of occupational
21 exposure as a painter, to the extent that painters may
22 have been exposed to products containing some quantity
23 of benzene.

24 Q BY MR. METZGER: Where -- oh, the second --

25 A That is the second one. I am citing this as an

1 example, if this is what you would like me to identify
2 for you.

3 Q Okay. So let me see.

4 You are referring to what is the second article
5 on your publications list on page 12; is that correct?

6 A That is correct.

7 Q As I look at the title of that it appears to be
8 concerning a meta-analyses of occupational exposure as a
9 painter for the specific outcomes of lung and bladder
10 cancer; is that correct?

11 A That is correct.

12 Q So in that study do you specifically address
13 non-Hodgkin's lymphoma or not?

14 A No.

15 Q Is this study one in which you have compiled
16 data and performed a meta-analysis of exposure data for
17 painters?

18 MR. GRANNIS: Vague.

19 THE WITNESS: No. Unfortunately there are very
20 poor exposure data for painters.

21 Q BY MR. METZGER: Okay. Have you read the
22 recently published article regarding painter's exposure
23 to benzene that was published in OEM, I think, within
24 the last few weeks?

25 A I can't recall that I have.

1 Q Okay. It is Chinese workers, does that ring --

2 A Oh, yes, I have seen it.

3 Q Have you read that article?

4 A I haven't had time to, no.

5 Q Okay. Other than the second article on your
6 publications list that you have identified, are there
7 any other articles that you have which relate to
8 benzene?

9 A Indirectly.

10 Q Directly or indirectly, sure.

11 A I don't believe there are any that directly do
12 so. I will look to see if there are others that
13 indirectly address it.

14 MR. GRANNIS: While the doctor is doing that,
15 Raphael, where could I get a glass of water?

16 Thanks.

17 THE WITNESS: I believe that is it.

18 Q BY MR. METZGER: Okay. Is all of your
19 professional income currently derived from your work at
20 Environ?

21 A Yes, sir.

22 Q Would you describe for me the work that you do
23 for Environ.

24 A It divides roughly into three areas, one of
25 which is litigation support; another which is primary

1 epidemiologic research studies as well as reviews and
2 syntheses of the epidemiologic engineering literature.

3 And the third is a bit more of a mix. It has
4 to do with advising, consulting, opinion giving to
5 clients and operating an epidemiology practice within
6 Environ, so some administrative responsibilities.

7 Q Okay. What percentage of the time that you
8 spend for your work for Environ is on litigation
9 support?

10 A It varies depending on the timing of the cases
11 that we are working on and the demands of those cases,
12 but it probably doesn't drop below 25 percent and it
13 probably doesn't go over 50 percent, somewhere in that
14 range.

15 Q And what percentage of your time at Environ is
16 spent advising clients?

17 A That is really the first priority so it depends
18 what the demand is at the time, but I would say it is
19 roughly a third on average.

20 Q And that is advising and consulting for
21 clients?

22 A For that piece that I identified, and that
23 includes some administrative. Do you want me to further
24 divide that?

25 Q Yes. I'd like a breakdown.

1 How much time do you spend in administrative
2 work at Environ, what percentage of your time?

3 A That is probably 10 to 15 percent.

4 Q And how much time do you spend operating an
5 epidemiologic practice at Environ?

6 A I consider that part administrative activities.

7 Q Okay. And what percentage of your time do you
8 spend advising and consulting for clients outside of
9 litigation support?

10 A That is probably 20, 25 percent.

11 Q And what percentage of your time do you spend
12 reviewing and synthesizing the epidemiologic literature
13 at Environ?

14 A That is a fair amount of what I do because that
15 is a large part of what I do in the litigation area as
16 well as in the research area as well as in the client
17 advising area.

18 So I would say more than half of my time is
19 spent in that type of activity.

20 Q How much more than half?

21 A I don't know. These are all rough estimates.
22 I have never really split it out for that kind of
23 analysis.

24 Q Okay. What percentage of your time at Environ
25 is actually spent conducting primary epidemiologic

1 research studies?

2 A Well, that is what varies the most. During
3 phases of start-up and protocol development I could be
4 spending three, four days per week, and then there will
5 be long stretches where I don't do anything. So it is
6 very difficult to average.

7 Q Okay. In the year 2009 have you spent time at
8 Environ reviewing and synthesizing epidemiologic
9 literature apart from litigation?

10 A Yes, I have.

11 Q What have you done there this year in that
12 regard?

13 A These first two publications that are -- I
14 think you have the CV. The first two publications that
15 are in press are very large reviews that consumed a fair
16 amount of time this year.

17 Q Let's talk about those briefly then -- well, we
18 will get to them in just a minute.

19 A There are other areas, but yes, I spent a lot
20 of time reviewing and critiquing literature.

21 Q And in 2009 have you conducted any primary
22 epidemiologic research studies?

23 A Yes.

24 Q Which ones?

25 A The largest and most time consuming is based in

1 Germany. It is a study of 18,000 men and women employed
2 in the porcelain manufacturing industry.

3 Q All right. Who is sponsoring that study?

4 A That is jointly sponsored by the European
5 silica trade group called Eurosil and the German
6 Government.

7 Q Okay. Regarding the first publication listed
8 on your CV, "Epidemiologic studies of formaldehyde
9 exposure and risk of leukemia and nasopharyngeal cancer:
10 A Meta-analysis," who sponsored that?

11 A That is sponsored by the formaldehyde council.

12 Q The second one, "Meta-analyses of occupational
13 exposure as a painter and lung and bladder cancer
14 morbidity and mortality," who sponsored that?

15 A That is sponsored by the National Paints and
16 Coatings Association.

17 Q Okay. And have you testified in cases for the
18 defense where the claimed exposure was formaldehyde?

19 A I have not.

20 Q Have you testified in cases where the claimed
21 exposure was paint?

22 A I did give a deposition in a case where the
23 exposure included use of a paint product. I don't quite
24 believe that is a good fit but paint was mentioned.

25 Q Okay. All right.

1 They are gradually bringing in things from your
2 CV that they have been printing out.

3 So we have here this document which we will
4 mark as Exhibit 2.

5 (Deposition Exhibit 2 was marked for
6 identification.)

7 Q BY MR. METZGER: I will ask you, is this the
8 list of testimony that you had faxed over?

9 A Yes.

10 MR. GRANNIS: And this is a document
11 entitled -- three-page document entitled, "Testimony and
12 Fees"; correct?

13 THE WITNESS: Yes. The fourth page is a fax
14 cover.

15 Q BY MR. METZGER: Why don't we just remove that
16 last page so it doesn't clutter up the exhibit, okay.

17 A Yes. It is three pages.

18 Q All right. And is this a list both of
19 deposition and trial testimony?

20 A Yes.

21 Q Okay. Now, the first case listed here is
22 O'Neill versus The Sherwin-Williams Company.

23 And you apparently gave a deposition in July of
24 this year; is that correct?

25 A Yes, sir.

1 Q What was that case about?

2 A Mr. O'Neill was diagnosed with a bladder cancer
3 which he alleged to have been caused by his recent use
4 of a product manufactured by Sherwin-Williams.

5 Q A paint product?

6 A Which?

7 Q A paint product?

8 A A paint product, yes. I believe an epoxy
9 system, something I don't fully understand.

10 Q On whose behalf did you testify?

11 A I believe Sherwin-Williams.

12 Q What was the thrust of your testimony?

13 A Essentially that the alleged painting exposure
14 which consisted of I think half a dozen applications of
15 this material, within 10 years, maybe less of the
16 diagnosis of bladder cancer was incompatible with the
17 epidemiology of bladder cancers.

18 My understanding was also that there is no
19 chemical in that product that could cause bladder cancer
20 and it was on that basis the case was dismissed.

21 Q Who is the attorney who took your deposition?

22 A I don't know. I mean I don't remember.

23 Q When you say the case was dismissed, was there
24 a summary judgment brought that you are aware of?

25 A Yes, sir.

1 Q Did you provide a declaration in support of the
2 dismissal of that case by summary judgment?

3 A I don't recall. I believe that my testimony at
4 deposition was cited in that motion, but I just don't
5 recall so ...

6 Q And the next case, Willis versus R.J. Reynolds
7 Tobacco Company, what was that about?

8 A This is a case in which I was asked to comment
9 on what level of reduction or avoidance of risk occurs
10 among smokers who quit smoking, various stages of their
11 smoking histories.

12 Q What was the case about?

13 A This is one of complex series of cases that I
14 don't fully understand from a legal perspective, but
15 it's one of the so-called angle progeny cases,
16 individuals that had filed claims earlier, years and
17 years ago and that are coming back now.

18 Q These are claims where smokers were suing R.J.
19 Reynolds and perhaps other tobacco companies claiming
20 that tobacco had caused their lung cancers.

21 Is that it?

22 A Essentially. I don't want to represent that it
23 is as simple as that because I don't know, but that is
24 essentially my limited understanding of those cases.

25 Q And on whose behalf were you testifying in that

1 case?

2 A The tobacco companies.

3 Q Does smoking cause lung cancer?

4 A Absolutely. And of course in all of these
5 situations where chemicals are -- exposures cause
6 disease, it has to be an adequately high level to cause
7 that.

8 Q What is the carcinogenic constituent of
9 cigarette smoke that causes lung cancer?

10 MR. GRANNIS: Irrelevant.

11 THE WITNESS: I don't know that it is known.
12 There may be many of them. And I think that that's --
13 there are many people working on that trying to
14 disentangle that.

15 Q BY MR. METZGER: How do you know if smoking
16 causes lung cancer if you don't know which constituent
17 does cause lung cancer?

18 MR. GRANNIS: Irrelevant. Argumentative.

19 THE WITNESS: Well, I know this from various
20 approaches, not the least of which is that this has been
21 demonstrated epidemiologically, so many times it can't
22 be counted, in that removing that exposure has been
23 demonstrated to have parallel reductions in risk.

24 So without knowing what the mechanism is, we
25 can test it experimentally at the population level.

1 Q BY MR. METZGER: So without knowing what the
2 mechanism is and without knowing what the carcinogenic
3 constituent -- causative carcinogenic constituents are,
4 you can still determine that cigarette smoking causes
5 lung cancer; correct?

6 MR. GRANNIS: Argumentative. Irrelevant.

7 THE WITNESS: In this situation that can be
8 held because of the strength of the association between
9 those -- between the exposures and the occurrence of
10 lung cancers.

11 Q BY MR. METZGER: What is the strength of the
12 association?

13 A It depends how carefully you have measured the
14 exposure.

15 Q I am asking for cigarette smoking and lung
16 cancer, what is the strength of that association?

17 MR. GRANNIS: Irrelevant. Vague.

18 THE WITNESS: I would say that is not
19 answerable as simply as that because it is an
20 oversimplification.

21 Q BY MR. METZGER: Okay.

22 A Epidemiologically you have to specify a
23 quantity of exposure and you have to specify a specific
24 disease. If you asked me about adenocarcinomas --

25 Q I am asking about lung cancers.

1 A Lung cancers are --

2 MR. GRANNIS: Excuse me, the witness has not
3 finished answering your previous question. He is
4 entitled to do so. I appreciate if you give him that
5 courtesy.

6 Go ahead, doctor.

7 THE WITNESS: Lung cancers are many, many
8 different diseases with slightly different etiologies,
9 meaning they have different constellation of causes.

10 If you ask me a more specific question about
11 adenocarcinoma of the lung, I'd give you a different
12 answer than if you asked me about small cell or squamous
13 cell. All of them are, in lay terms, considered lung
14 cancer. They're very different diseases.

15 On the exposure side I'd have to ask you
16 whether you are talking about a casual smoker of a
17 cigarette or two a day or a half a pack a day or a
18 serious smoker, 20 or 30 packs per day.

19 If you looked at squamous or small cell --

20 Q BY MR. METZGER: 20 or 30 packs a day?

21 A I'm sorry. 20 or 30 cigarettes per day. Thank
22 you for correcting.

23 Q That is a real serious smoker.

24 A I think most I have seen is five but not 25 or
25 30.

1 But if you looked at a squamous cell carcinoma
2 risk among smokers of two to three packs a day, relative
3 risk might be 100 or 200.

4 Q I see.

5 A It is highly specific to both the specific
6 exposure and the specific disease.

7 Q How many types of lung cancer are there?

8 MR. GRANNIS: Irrelevant. Overbroad.

9 THE WITNESS: I'd have to look at the ICD
10 coding. It changes, you know. There are more added
11 over time as we understand that many of these cancers
12 actually are multiple diseases, but there are four main
13 groups.

14 Q BY MR. METZGER: And those are?

15 A Large cell, small cell, squamous cell and
16 adeno, and there are many subtypes. I know there are
17 certain subtypes of adeno that are not associated with
18 smoking.

19 So it is more complicated than what is the
20 relative risk of cigarette smoking.

21 Q Does cigarette smoking cause all of the four
22 major types of lung cancer that you just identified?

23 MR. GRANNIS: Argumentative. Irrelevant.

24 THE WITNESS: To some degree. It varies, as I
25 previously explained, by the amount of exposure and by

1 the specific subtype of the disease.

2 Q BY MR. METZGER: Does cigarette smoking cause
3 the various subtypes, the four main types of lung
4 cancer?

5 MR. GRANNIS: Vague. Irrelevant. Overbroad.
6 Argumentative.

7 THE WITNESS: Again, it depends. There are
8 subtypes that either are shown to be weakly or
9 non-associated with smoking, or where there is
10 inadequate evidence available to conclude that a
11 specific subtype is reasonably represented by the larger
12 family.

13 Q BY MR. METZGER: Is there any subtype of lung
14 cancer that has been shown to not be caused by cigarette
15 smoking?

16 MR. GRANNIS: Vague. Irrelevant. Overbroad.
17 Argumentative.

18 THE WITNESS: Yes. There is a subtype called
19 B.A.C, bronchioalveolar carcinoma that I believe has
20 been looked at adequately to demonstrate
21 epidemiologically the evidence is mixed, so it is not
22 strong enough to conclude that it is causal
23 relationship.

24 Q BY MR. METZGER: But I wasn't quite asking you
25 that. What I was asking you is, is there any subtype of

1 lung cancer which has been proven to be not caused by
2 cigarette smoking?

3 MR. GRANNIS: Vague. Overbroad. Irrelevant.
4 Argumentative.

5 Q BY MR. METZGER: I am not asking about
6 sufficiency of evidence.

7 A I understand. I also understand it is not an
8 epidemiologic question. I think that proving something
9 doesn't cause something is not compatible with the basic
10 approach we use to scientific method generally, but
11 specifically epidemiologically.

12 Q I understand you to be saying that epidemiology
13 doesn't do that. Epidemiology does not prove that
14 something does not cause something.

15 MR. GRANNIS: Vague. Overbroad.
16 Mischaracterizes testimony.

17 THE WITNESS: I didn't understand the question
18 as you phrased it, but I believe that you are asking
19 epidemiology doesn't or is not able, as is are other
20 sciences, unable to prove this negative. And that is
21 the way that it is summarized in lay terms.

22 Q BY MR. METZGER: I see.

23 A The scientific method establishes a testable
24 hypothesis that there is an observable difference
25 between two groups.

1 Failing to see an observable difference doesn't
2 prove a negative; it disproves the hypothetical. We
3 build our understanding from this basic scientific
4 method and I believe it is not limited to epidemiologic.

5 Q So in layman's terms so that an average person
6 can understand this, are you saying that epidemiology
7 does not prove that a particular chemical does not cause
8 a particular disease?

9 MR. GRANNIS: Overbroad. Vague.
10 Mischaracterizes testimony. Argumentative.

11 THE WITNESS: The way we describe that in lay
12 terms is that there is inadequate evidence to reject the
13 hypothesis.

14 It may lend support for the null hypothesis,
15 that is that it doesn't cause the disease, but it
16 doesn't provide proof for that.

17 Q BY MR. METZGER: And you say that that is lay
18 terminology?

19 A It is. It doesn't get any better.

20 Q Okay. Well, then let me ask you the flip side
21 of this. Does epidemiology actually prove that a
22 chemical does cause a disease?

23 A I think that I have found --

24 MR. GRANNIS: Vague and overbroad.

25 THE WITNESS: I found a more commonly used lay

1 explanation for your previous question. That is that
2 this is the white swan, black swan analogy. You can
3 repeatedly hypothesize that all swans are white and be
4 paraded in front of an endless stream of white swans but
5 still not be able to prove that there aren't black
6 swans. But as soon as you have identified a black swan,
7 you can disprove that hypothesis.

8 I think that is an analogy that's frequently
9 used in lay settings so you can understand the
10 difference between affirming epidemiologically or
11 observationally or scientifically versus disproving.

12 Q BY MR. METZGER: Is it true that epidemiologic
13 textbooks state that epidemiology does not prove causes
14 of disease?

15 MR. GRANNIS: Vague. Overbroad.
16 Argumentative.

17 THE WITNESS: Yes, epidemiology texts
18 appropriately identify that, but should also accurately
19 add that causality cannot be proven by any means except
20 some ridiculously obvious things like a gunshot wound
21 fatally injured someone.

22 As you move into chronic disease complex
23 epidemiology, then I think it is reasonable that proof
24 of causation cannot be determined.

25 Q BY MR. METZGER: Okay. All right. We were

1 looking at this case list. The next case down Bishop
2 versus Shell Oil, what was that case about?

3 A This is an oil -- excuse me, oil production or
4 oil worker -- I don't recall the details. And I believe
5 it is a multiple myeloma case.

6 Q Was the claim that benzene from petroleum
7 products caused the worker's multiple lymphoma?

8 A That is what I think it is, yes.

9 Q And you gave a deposition in that case this
10 year?

11 A That is correct.

12 Q What was the thrust of your testimony?

13 A The epidemiologic literature on multiple
14 myeloma and benzene is very weak and not sufficient to
15 draw causal determination.

16 Q And you testified on behalf of Shell Oil
17 Company?

18 A And/or one of the other defendants.

19 Q Who took your deposition in that case?

20 A I don't recall.

21 Q Is that case still pending, to your knowledge?

22 A Yes, it is.

23 Q Okay. The next case, Davis versus BNSF Railway
24 Company, what was that about?

25 A I am sorry. I shouldn't say so definitively

1 that it is still pending. I just believe so. I don't
2 recall.

3 Q Sure.

4 A The Davis case, Mr. Davis had a biliary tract
5 tumor and alleged that that was caused by his exposures
6 while employed at BNSF.

7 Q He was a railroad worker?

8 A He was a tie plant worker.

9 Q What was the claimed exposure?

10 A It was a mix and it included most of the
11 chemicals or all of the chemicals that were used at that
12 facility.

13 I haven't finished. You were eager for my
14 words and I am getting there. The creosote was one.
15 Chromium, pentachlorophenol, in this category, mostly
16 wood preservatives.

17 Q What was the thrust of your testimony?

18 A I looked fairly comprehensively at each of
19 those exposures in the epidemiologic literature as well
20 as at that specific type of cancer and demonstrated that
21 there was no epidemiologic support for that hypothesis.

22 Q Who took your deposition?

23 A I am sorry. I don't recall. I will do a
24 better job and try to remember you in this deposition
25 for future reference, but I don't retain the names of

1 the attorneys taking my depositions.

2 Q That case went to trial?

3 A It did.

4 Q Did you testify at trial?

5 A I did.

6 Q What was the result?

7 A Defense verdict.

8 Q The next case, Valdez versus A.W. Chesterton
9 Company, what was that about?

10 A I don't recall the specifics of that.

11 Q Do you recall generally that that was regarding
12 asbestos?

13 A That may be. I have given depositions in a
14 number of asbestos cases.

15 Q Have you testified for A.W. Chesterton?

16 A Not that I recall. The name is not familiar to
17 me.

18 Q In that case did you testify for the defense?

19 A Yes, sir.

20 Q You seem quite definitive.

21 In all of these cases have you testified for
22 the defense?

23 A No, sir.

24 Q All right. The next case, Kaplan versus R.J.
25 Reynolds, is that another one of the angle cases?

1 A Yes, it is.

2 Q You testified for the defense?

3 A I don't even remember.

4 Q For R.J. Reynolds; is that correct?

5 A I believe it was for all of the defendants.

6 Q All of the tobacco companies?

7 A Yes.

8 Q Is same true with the Grossman case?

9 A Yes.

10 Q The Gersten versus Asbestos Corporation, I
11 would assume that was some asbestos case; is that
12 correct?

13 A That is correct.

14 Q And whose behalf did you testify?

15 A I believe it was Plant Insulation.

16 Q That was one of the asbestos companies?

17 A Yes.

18 Q One of the defendants?

19 A Yes.

20 Q Who took your deposition in that case?

21 A I don't know.

22 Q The next case, Clayton -- sorry, Thompson
23 versus Asbestos Defendants, another similar case?

24 A Yes.

25 Q Collins versus A.W. Chesterton Company, another

1 asbestos case?

2 A Yes.

3 Q And you gave both deposition and trial
4 testimony in that case?

5 A Yes.

6 Q Barr versus Aladdin Heating Corporation, what
7 was that about?

8 A I think that was similar. These cases --

9 Q Also asbestos --

10 A -- cases in Alameda are all on behalf of a
11 plant which I provided testimony on state of the art.

12 Q I see.

13 And essentially that meant that the hazards of
14 asbestos were not knowable or known at a certain point
15 in time.

16 Is that what you mean?

17 A The question put to me is what would a
18 scientist at a particular point throughout history have
19 available and possibly understand as to what was
20 knowable. Did not come into what a company might know.
21 It really was a scientific question.

22 Q I understand.

23 Was it one law firm that was representing the
24 plaintiffs in these cases?

25 A I was retained by one law firm in these cases

1 and it was Burn & Brown, Oakland.

2 Q But was there one law firm who was representing
3 the plaintiffs?

4 A I don't know.

5 Q Do you recall the name of any law firm that was
6 associated with the plaintiffs?

7 A No. These were mainly phone depositions, some
8 of them 10 or 20 minutes and some never discussing the
9 science of the case, so I had fairly little interaction
10 with any parties in these.

11 Q Okay. Trombella versus Advocate Mines Limited,
12 what was that case about?

13 A It must have been similar because the
14 deposition was in the same day and there was a cluster
15 of cases in the same --

16 Q You testified for the defendant asbestos
17 company?

18 A That would have been plants, yes.

19 Q Okay. Village of Bensenville, Illinois versus
20 City of Chicago, what was that about?

21 A Bensenville is the village adjacent to O'Hara.

22 Q Airport, right.

23 A And I was representing Bensenville as a
24 plaintiff concerned about the way the City of Chicago
25 was demolishing properties in their neighborhood while

1 people were still living next to the demolition site --

2 Q The next case --

3 A -- which included a hazardous waste site.

4 Q The next case, Marshall versus AC&S, another
5 asbestos case and you testified for the defense?

6 A That's correct.

7 Q City of St. Louis versus American Tobacco
8 Company, what was that about?

9 A This is a large and very complicated matter
10 that I don't understand entirely. To simplify it, I
11 will describe it probably in a simplistic way.

12 The hospitals in and around throughout Missouri
13 have jointly filed this case in an attempt to recoup
14 moneys that they expended on behalf of patients that
15 were either charity cases or non-paying, non-charity
16 cases --

17 Q Lung cancer case --

18 A -- alleging that their care caused damages,
19 financial damages to the hospitals in treating them.

20 Q Were these lung cancer patients suffering from
21 tobacco-related disease?

22 A That is where it is very complicated.

23 Q Is that what the claim was?

24 A No. It has to do with a long list of diseases
25 and --

1 Q Was the claim that the tobacco companies had
2 caused these diseases thereby resulting in this
3 treatment for which the hospitals were not compensated
4 and the hospitals wanted the tobacco companies to
5 compensate the hospitals for treating these patients?

6 A Something like that. When I try to reiterate
7 this way, they say, "No, no, it's much more
8 complicated."

9 So I don't want to --

10 Q What was the thrust of your testimony in this
11 case?

12 A That is ongoing and it is still unclear to me
13 all of the areas that I will be addressing. And I
14 understand this has been underway for 10 or eight more
15 years.

16 MR. GRANNIS: Have you testified in that case?

17 THE WITNESS: I gave a deposition. And at the
18 deposition I identified a large number of diseases that
19 I believe are caused by smoking.

20 Q BY MR. METZGER: So cigarette smoking doesn't
21 just cause lung cancer?

22 A That's right.

23 Q Oh, how do you know that?

24 A General causation, you know, is a judgment
25 largely based on available evidence and often -- and

1 with cigarette smoking there is substantial scientific
2 evidence that is specific to these diseases and from
3 which causation can be reasonably inferred.

4 Q So a chemical can actually cause more than one
5 disease?

6 MR. GRANNIS: Argumentative. Overbroad.
7 Vague.

8 THE WITNESS: And doesn't at all reflect what I
9 said in my previous answer.

10 Q BY MR. METZGER: I am just asking.

11 A Could you ask it as a new question.

12 Q I'm asking a new question.

13 A Maybe by tone you implied that's what I had
14 suggested.

15 MR. GRANNIS: Same objections, and
16 mischaracterizes previous testimony.

17 Q BY MR. METZGER: I will ask a new question.

18 A Thank you.

19 Q Can a chemical cause more than one disease? Is
20 that possible?

21 MR. GRANNIS: Vague. Overbroad.
22 Argumentative.

23 THE WITNESS: A specific chemical I believe
24 could cause more than one disease. I think that there
25 are chemicals such as vinyl chloride that causes

1 angiosarcoma of the liver but can also cause another
2 host of -- a host of other diseases, including
3 acroosteolysis so...

4 Q BY MR. METZGER: Brain cancer?

5 A I don't agree at all with that, unless you have
6 found a new battery of epidemiologic studies. And I
7 have looked very closely at that.

8 Q If you want to agree with Rinkis, what about
9 hepatocellular carcinoma?

10 A I think that is a great question.

11 Q How about answering it?

12 A I would love to answer it. Would you like to
13 sponsor my research? I have access to very good data.

14 Q I can't afford you. No, thanks.

15 Let's move on.

16 A I thought we were almost close to coming to a
17 deal.

18 Q No.

19 A See, that is one of those good hypotheses for
20 which there are epidemiological -- or data that could be
21 used in epidemiological study to answer it.

22 Q Carter versus A.W. Chesterton Company, another
23 asbestos case you testified for the defense?

24 A Yes, just like the others above.

25 Q Okay. Johnese versus Ameron, what is that

1 about?

2 I assume it is some paint-related case.

3 A I think so. I think it was a pancreatic cancer
4 case with non-specific exposure.

5 Q You testified for the paint company, Ameron?

6 A It is possible. I --

7 Q For the defense, for some paint company in the
8 case?

9 A Correct, correct, or a defendant. I don't know
10 if they were necessarily a paint company.

11 Q All right. And you testified that the exposure
12 didn't cause the pancreatic cancer?

13 A I don't recall specifically my testimony, but
14 it would have been more likely something like that but
15 more along the lines that the epidemiologic evidence
16 doesn't support that claim.

17 Q Clark versus Kellogg Brown & Root, what was
18 that about?

19 You don't recall?

20 A This is a benzene case.

21 Q Okay.

22 A I don't recall the disease that Mr. Clark had.

23 Q Did you testify that benzene did not cause that
24 disease?

25 A I don't recall.

1 Q If I told you that the disease he had was acute
2 lymphocytic leukemia, would that have been your
3 testimony in the case?

4 MR. GRANNIS: Incomplete hypothetical.

5 THE WITNESS: I would say that the
6 epidemiologic data was insufficient to draw that
7 conclusion.

8 Q BY MR. METZGER: Okay. Cairns versus American
9 Optical, what was that about?

10 A This is an asbestos case.

11 Q You testified for the defense?

12 A Yes.

13 Q Hamman versus American Oil, what was that
14 about?

15 A I think this is a benzene case. I don't recall
16 the disease.

17 Q Did you testify for the defense?

18 A Yes.

19 Q Do you recall generally what your testimony
20 was?

21 A No.

22 Q Do you recall the plaintiff's attorney?

23 A No.

24 Q Weir versus ArvinMeritor, what was that about?

25 A I actually think that was the pancreatic cancer

1 case.

2 Q The one that you mentioned earlier?

3 A Yes. We are getting back too far for me to
4 remember these things.

5 Q In re: Tobacco Litigation, West Virginia, what
6 was that about?

7 A That is another long time ongoing case where I
8 believe my testimony was similar to that in the St.
9 Louis identifying the lists of diseases that I concluded
10 or caused by tobacco smoke.

11 Q You testified for the tobacco industry in this
12 case?

13 A Yes.

14 Q Okay. Cantu versus Refining & Marketing, is
15 that a benzene case?

16 A Yes.

17 Q What was the disease?

18 A Actually I think that was an NHL case. This --
19 that's right. I did not give a deposition in this case.
20 That was a Daubert hearing that I participated in.

21 Q When you say a Daubert hearing, was this
22 actually a hearing that took place in court or just a
23 Daubert hearing where you submitted an affidavit or
24 declaration?

25 A I thought you were going to catch my error. It

1 was a Havner hearing in Texas.

2 Q Life testimony or declaration?

3 A It was life testimony before the judge.

4 Q Okay. You testified for the defense?

5 A Yes.

6 Q Mountney versus 84 Lumber Company, what was
7 that about?

8 A It is an asbestos case.

9 Q You testified for the defense?

10 A I testified on behalf of 84 Lumber.

11 Q What was the thrust of your testimony?

12 A The asbestos, if any, in joint compound, if it
13 had been sold by 84 Lumber was not capable of causing
14 Mr. Mountney's disease.

15 Q Why was that?

16 A I am sorry?

17 Q Why was that?

18 A Why was?

19 Q Why was it not capable of causing the disease?

20 MR. GRANNIS: Vague. Overbroad.

21 THE WITNESS: Two basic reasons. One is that I
22 believe this was a mesothelioma and chrysotile was not
23 clearly a cause of mesothelioma, especially -- if there
24 is any doubt at all, it is -- it disappears at levels
25 which might be exposed from joint compound.

1 Q BY MR. METZGER: What disappears?

2 A The risk.

3 Q Oh, okay.

4 A In other words, there is no evidence whatever
5 that low level exposures to chrysotile, if they occurred
6 at all in this case, could have contributed to a
7 mesothelioma.

8 Q Do you mean on an epidemiologic basis?

9 A Based on epidemiologic evidence, that
10 conclusion was derived.

11 Q Is epidemiology as a science capable of making
12 those assessments for extremely low dose exposures?

13 MR. GRANNIS: Argumentative. Vague.
14 Overbroad.

15 Q BY MR. METZGER: Do you understand the
16 question?

17 A I do understand the question. I think that it
18 is -- it is very broad and it is complicated to answer
19 what epidemiology is capable of and what you mean by low
20 exposures because, for example --

21 Q Let me rephrase the question then.

22 A -- the insulators in Sulakoff's work were
23 considered low exposed.

24 Q Let me rephrase the question.

25 A All right.

1 Q In this case the exposure was to chrysotile in
2 what, joint compound?

3 A Alleged chrysotile. It was years and years
4 where the joint compound did not contain chrysotile.
5 So if you make it hypothetical, then we can get past the
6 specifics of this case.

7 Q Sure, sure.

8 A If this guy used joint compound yesterday,
9 nobody would say that anything in it contributed to his
10 disease.

11 Q So here is my question: Is epidemiology a
12 sufficiently precise and sensitive analytical device to
13 detect statistically significant increases in the rates
14 of occurrence of mesothelioma amongst workers who are
15 exposed to chrysotile asbestos from joint compound?

16 MR. GRANNIS: Vague. Overbroad.

17 Argumentative. Irrelevant.

18 THE WITNESS: It is still quite broad. You are
19 asking me about epidemiology. Epidemiology is a world
20 of practitioners and methods.

21 So you could say could -- could epidemiology
22 using state of the art techniques detect these things.
23 And I think that, well, if you look at quality of
24 studies and the numbers of individuals that have been
25 exposed to chrysotile fibers at low levels all their

1 lives, then in fact we can set those individuals apart
2 epidemiologically from those that have been exposed to
3 much, much higher levels and to moderate to high level
4 of anthropolos.

5 Q BY MR. METZGER: So the answer to my question
6 is yes?

7 A Partly. It is not a "Yes" or "No" obviously.

8 Q All right. Coulter versus Parks, that was a
9 benzene lymphoma case; correct?

10 A Yes, I believe so.

11 Q And do you recall the name of the attorney who
12 took your deposition in that case?

13 A No.

14 Q I believe it was Phil Harley.

15 Does that ring a bell?

16 A I think it does, yes. Very nice guy.

17 Q He was a very nice guy. He recently died.

18 A Did he really?

19 Q Yeah. Melanoma, unfortunately.

20 A Oh, I'm very sorry to hear that.

21 Q Did he take your deposition in other of the
22 asbestos cases that we have discussed?

23 A This was not an asbestos case.

24 Q I know.

25 A Oh, do I recall whether he had taken my

1 deposition in an asbestos case, I don't recall.

2 Q Okay. Were you deposed by attorneys from the
3 Braden Purcell firm?

4 A I don't know. I am sorry.

5 Q You don't know, okay.

6 Next case, Lattin versus Borden, what was that
7 about?

8 A That is a vinyl chloride and brain cancer case.

9 Q I thought you said there was no such thing?

10 A There are cases. That is not what is lacking.

11 MR. GRANNIS: Mischaracterizes prior testimony.

12 Q BY MR. METZGER: Go ahead.

13 A That is not what we are short on. It is the
14 science. I can't say much about this, not because I
15 don't want to. I was a fact witness.

16 Q Really?

17 A I was in the court for five minutes.

18 Q What were you testifying about?

19 A I published the study on vinyl chloride workers
20 in the U.S. and counsel believed that I could comment on
21 my study without being identified as an expert.

22 Q I see.

23 Erroneously believed that?

24 A And the judge didn't agree with that so I was
25 excused after 10 minutes.

1 Q Without testifying?

2 A A side bar.

3 MR. GRANNIS: So this case was one of failure
4 to designate you as an expert.

5 Is that it?

6 THE WITNESS: I can't say I know what happened
7 there.

8 MR. GRANNIS: Okay.

9 THE WITNESS: But I would say that I will be
10 very careful if ever asked again to testify as a fact
11 witness.

12 Q BY MR. METZGER: You were called by counsel to
13 testify by counsel for Borden, the defendant?

14 A By one of the defendants.

15 Q Ringstaff versus AMOCO, what is that about?

16 A That is a benzene case.

17 Q Disease?

18 A Maybe a CLL, CML maybe. I don't know.

19 Q Okay. What was the outcome of that case? I
20 see there was a trial.

21 A I don't recall.

22 Q Do you know who took your deposition?

23 A No.

24 Q Taylor versus AIRCO, what was that about?

25 A This is a vinyl chloride case.

1 Q On whose behalf did you testify?

2 A One of the defendants.

3 Q Okay. Can you recall the name of any
4 plaintiff's attorney who ever took your deposition?

5 MR. GRANNIS: Other than the deceased gentleman
6 that you referred to?

7 MR. METZGER: He didn't recall that one so I am
8 asking other than that, yes.

9 THE WITNESS: And other than yours.

10 Q BY MR. METZGER: I am not done yet.

11 Other than Phil Harley and me.

12 A I remember the first.

13 Q Who was that?

14 A It was a gentleman by the name of Withey.

15 Q Mike Withey?

16 A Do you know him?

17 Q Sure.

18 A Okay.

19 Q Have you been deposed by Dean Heartly?

20 A I am sorry. My --

21 Q West Virginia, tall guy occasionally with a
22 beard.

23 A I don't -- I don't recall.

24 Q Hershall Hockson?

25 A Oh, I do remember Mr. Baggett. I believe that

1 was June Taylor. So I think that I had only given
2 depositions a few times before this list. This is five
3 years. And so I think those first had an impression on
4 me. No offense to any of your fine colleagues --

5 Q Billy Baggett?

6 A -- since then. I don't recall their names, but
7 it was Mr. Baggett.

8 Q Jr. or Sr.?

9 A Jr.

10 Q Any others that you can recall?

11 A Not without prompting. I just don't remember.

12 MR. GRANNIS: Is this a good time to take a
13 break?

14 MR. METZGER: Just going to ask a few more
15 names.

16 Q What about Al Stewart?

17 A Doesn't ring a bell.

18 Q Steve Jansen?

19 A (No audible response.)

20 MR. GRANNIS: Is that a no?

21 THE WITNESS: Sorry, I am waiting for something
22 that rings a bell. I am sorry. I don't remember that.

23 MR. METZGER: Let me just wrap up on the cases
24 and we will take a break.

25 MR. GRANNIS: Sure.

1 Q BY MR. METZGER: So summing this all up, is it
2 correct that in the past five years, wherever there was
3 a claim of an occupational cancer or disease, in all of
4 the cases in which you testified, you testified on
5 behalf of the defense?

6 A That's right. If you are only talking about
7 testimony, that is correct.

8 Q Have you --

9 A And the other caveat that it was an individual
10 rather than a town.

11 Q Right, right.

12 A Yes.

13 Q Have you ever testified on behalf of a worker
14 claiming to have suffered an occupational disease?

15 A Testified, no.

16 Q Okay. Let's take a break.

17 MR. GRANNIS: Okay.

18 (Brief recess.)

19 MR. METZGER: Back on the record.

20 (Deposition Exhibit 3 was marked for
21 identification.)

22 Q BY MR. METZGER: Dr. Mundt, is the document
23 that I'm providing you, which has been marked as Exhibit
24 3, a list of trial testimony which you provided on the
25 CD this morning?

1 A Yes, sir.

2 Q Okay. So this lists all of the trials that you
3 have testified in?

4 A I believe that there are trials and -- for
5 instance, I noticed there was hearing, so I think this
6 is testimony in court in front of a judge.

7 Q I understand. Okay.

8 Looks like we have addressed most of these
9 cases. The only one I don't think we did is the one at
10 the bottom, which is from 1996, the DiPetrillo versus
11 Narragansett Electric, what was that about?

12 A That was a multiple myeloma case and alleged
13 exposure was herbicide.

14 Q And you testified for the defendant?

15 A On behalf of Narragansett Electric, yes.

16 Q All right. We will mark as Exhibit 4 this
17 document from the CD.

18 (Deposition Exhibit 4 was marked for
19 identification.)

20 Q BY MR. METZGER: Is this a list of materials
21 that you have received from counsel for this case?

22 A Yes, sir, that -- I recognize it.

23 Q Did you read all of the materials on this list?

24 A No, I didn't.

25 Q Go through it and tell me which of the

1 materials you have actually read and which you haven't.

2 A May I mark it?

3 Q Sure. Let's do it that way.

4 How do you want to mark it just so we know
5 what --

6 A Just put a checkmark next to the number.

7 Q That you have read?

8 A Yes.

9 Q Okay.

10 A All right. The third amended complaint,
11 Dr. Harrison's deposition and all of the exhibits,
12 depositions of Dr. Whysner, Garabrant, Sarna, more
13 deposition of Dr. Harrison, those are the ones that I
14 have read.

15 The rest of the materials I have scanned,
16 leafed through, but because there is so much in the
17 medical record, I can't tell you that I have looked at a
18 particular one.

19 Q Okay.

20 A And the same with the materials from the
21 defendants listed here, excerpts from depositions 36
22 through 53. I don't know what that last entry is. I
23 have not looked at it.

24 Q Okay.

25 A I don't -- I am actually going to put an "X" on

1 those numbers. I don't think that I have looked at
2 these, and these are also scanned.

3 Q Okay.

4 A And I am familiar with and in order to identify
5 it to you, have this portion from the medical record
6 which I find to be important though my research in this
7 case.

8 MR. GRANNIS: You are referring to Exhibit 3 to
9 Dr. Sarna's deposition?

10 THE WITNESS: Correct.

11 Q BY MR. METZGER: Okay. All right. We will get
12 to that later.

13 My staff has printed out a file listing from
14 the CD that you provided and this appears to be
15 regarding non-Hodgkin's lymphoma epidemiology articles.
16 We will mark that as 5.

17 (Deposition Exhibit 5 was marked for
18 identification.)

19 Q BY MR. METZGER: Could you tell me if I have
20 correctly identified what that is?

21 A Yes, you have. The heading from the CD printed
22 accurately.

23 Q Okay. So this is a list of the articles
24 regarding non-Hodgkin's lymphoma epidemiology that are
25 actually on the CD that you have provided me?

1 A They are.

2 Q And is this the collection of articles
3 regarding non-Hodgkin's lymphoma epidemiology that you
4 have reviewed and considered for this case?

5 A Yes, sir.

6 Q Are there any other articles regarding the
7 epidemiology of non-Hodgkin's lymphoma that you have
8 read, reviewed or considered for this case?

9 A So far this is what I have accumulated. I
10 believe that this accurately reflects the literature on
11 this NHL epidemiology.

12 Q So is the answer to my question no?

13 MR. GRANNIS: Hang on. I think he is still
14 answering.

15 THE WITNESS: I also recall that this was a
16 separate folder that also supports my opinions and that
17 I reviewed in this case. So maybe we just need to be
18 more specific on the --

19 Q BY MR. METZGER: We will come back to this
20 question then.

21 Let me mark as Exhibit 6 then a document which
22 is a printout of a file listing entitled, "Miscellaneous
23 Articles" from your CV.

24 (Deposition Exhibit 6 was marked for
25 identification.)

1 Q BY MR. METZGER: Is that what you were
2 referring to?

3 A Yes, it is. Thank you.

4 And these don't fall neatly into a single
5 category. And since there aren't so many of them, they
6 are combined on this.

7 And between these two, these do represent the
8 published scientific literature which I relied in
9 formulating my opinions.

10 Q Between Exhibits 5 and 6?

11 A Yes.

12 Q Okay. Are there any epidemiology articles
13 regarding benzene, organic solvents or non-Hodgkin's
14 lymphoma that you are relying on for your opinions in
15 this case which are not listed on Exhibits 5 and/or 6?

16 A The only exception to this list would be
17 articles on which Dr. Harrison relies that I may not
18 have incorporated on my list and addressing his
19 testimony and what he might put forward might also
20 review and critique those articles if they are not on
21 this list.

22 Q How can I know which articles you are referring
23 to?

24 A When he identifies them, then I can identify
25 them.

1 Q Well, did you receive a CD-ROM which contained
2 all of the articles which Dr. Harrison produced?

3 A Yes. As I understand it is a very large
4 collection of articles that he provided.

5 Q Have you read all of those?

6 A I have not, no.

7 Q Have you read any of the articles that
8 Dr. Harrison provided which are not on your lists
9 Exhibit 5 and 6?

10 A I have not had a chance to compare. I have
11 done my evaluation based on articles that I have
12 identified and there is a good chance there is something
13 that he had identified that I was either unable to
14 identify or find a copy, but I have not made that
15 comparison.

16 Q Well, I am not really asking you to make a
17 comparison. What I want to know is, are there any
18 articles on the CD-ROM that Dr. Harrison produced that
19 you actually read other than those which are on your
20 lists Exhibits 5 and 6?

21 A I have not read all of the articles on his
22 list. It seems I think you are asking slightly
23 different question.

24 Given that I haven't read the articles on his
25 list, unless they are on my list --

1 Q You haven't read them?

2 A I haven't read them.

3 Q Fair enough. That is all I was asking.

4 A Okay. Good. I am glad you understood that
5 one. I am sorry.

6 Q You did. Tried to make it simple. Okay. All
7 right.

8 Let's see. I guess we have several copies of
9 this. We will mark this as Exhibit 7 the single page
10 entitled, "Summary of Opinions in Reese."

11 (Deposition Exhibit 7 was marked for
12 identification.)

13 Q BY MR. METZGER: Is this a list or summary of
14 the opinions that you have prepared for this case?

15 A Yes.

16 (Deposition Exhibit 8 was marked for
17 identification.)

18 Q BY MR. METZGER: Is Exhibit 8 a collection of
19 E-mails transmitting various materials to you that you
20 received for this case?

21 A Yes.

22 Q Okay.

23 (Deposition Exhibit 9 was marked for
24 identification.)

25 THE WITNESS: Excuse me, I just recall there

1 might be an older E-mail because we were first retained
2 in this case a year ago and there was a long inactive
3 period and then restarted in August I believe or
4 September.

5 Q BY MR. METZGER: So it might be missing --

6 A There might have been an E-mail from an
7 attorney, I believe Mr. Yang at Poole & Shaffery,
8 contacting me initially on the case.

9 Q Okay. If you could just send that to me so we
10 could have that, I would appreciate it.

11 MR. GRANNIS: If it exists.

12 Q BY MR. METZGER: If you have it. If you don't
13 have it, you don't have it.

14 Okay. Is Exhibit 9 the billings in this case
15 which Environ submitted to the Poole & Shaffery firm
16 which retained you for this case?

17 A Yes, through September -- or through August,
18 sorry.

19 Q Are there any more recent billings that have
20 been prepared?

21 A There will be. It hasn't been prepared yet.
22 That will be for the month of September and we are into
23 October now. That will be forthcoming.

24 Q When does Environ send out bills?

25 A It is usually between the third and fourth week

1 after a month ends. It runs through its process, so it
2 hadn't come out. The one for September hadn't come out
3 yet. Otherwise, I would have provided it.

4 Q Do you have an estimate as to how many hours
5 you have spent during the month of September and October
6 on this case?

7 A Not precisely, but a lot more than in any
8 previous months.

9 Q Give me your best estimate, if you could,
10 recognizing it's an estimate.

11 A I have probably spent a week to 10 days plus
12 staff time. I have no idea how much time.

13 Q How many hours per day?

14 A I was referring to day equivalents so ...

15 Q So --

16 A 40 to 60 hours.

17 Q And eight to 10 weeks of those, is that what
18 you said?

19 A Days.

20 Q I am not understanding.

21 A That's right, we are not communicating.
22 I have probably spent a week.

23 Q Or 10 days?

24 A Or 10 days. So it is --

25 Q Eight to 10 hours per day?

1 A Right.

2 Q I got it. Thank you.

3 And I would like the bill when it does come
4 out. If you could send me that too, please.

5 All right. And you have here some medical
6 records which were Exhibit 3 to Dr. Sarna's deposition.
7 And does this concern the thyroiditis?

8 A Yes, the thyroiditis as well as the site of the
9 lymphoma.

10 Q Okay. I am not going to need to attach that.

11 I believe now we did not -- I have not had my
12 staff yet print out the actual articles on the CD that
13 you provided us, but is it correct that all of the
14 articles that are on this CD are listed on Exhibits 5
15 and 6?

16 A I believe so, yes.

17 Q And --

18 A You represented that was a screen listing of
19 those?

20 Q Yes.

21 A Right.

22 Q Recognizing that we have not printed out those
23 articles but that we have them on the CD, have you
24 actually now provided me either in paper form or
25 electronic form all of your files for this case?

1 A Yes, I have.

2 Q All right.

3 A Understanding that I have only provided you a
4 list of materials that were sent to me. They are not on
5 the CD.

6 Q Right.

7 A They are identifiable and voluminous but ...

8 Q Right. I understand.

9 So now let's take a look at your opinions,
10 which are Exhibit --

11 A 7.

12 MR. GRANNIS: Yes.

13 Q BY MR. METZGER: There they are, correct.

14 Let's go over this if we could.

15 You first write, "I understand that Mr. Reese
16 was diagnosed with lymphocytic thyroiditis and diffuse
17 large B-cell thyroid lymphoma."

18 What is lymphocytic thyroiditis?

19 A It is inflammation of the thyroid in which
20 lymphocytes are present at some notable level. I am not
21 a pathologist. I am relying on the medical report
22 record for that information.

23 Q Is that type of pathological observation
24 consistent with non-Hodgkin's lymphoma?

25 MR. GRANNIS: Vague. Overbroad.

1 THE WITNESS: I do address this more
2 specifically in my opinions here, but the
3 epidemiological literature on groups of individuals with
4 non-Hodgkin's lymphoma specifically in the thyroid have
5 also, concurrently or prior to the diagnosis, evidence
6 of thyroiditis.

7 Q BY MR. METZGER: Are you saying that all
8 lymphomas that occur in the thyroid either concurrently
9 or previously have lymphocytic thyroiditis?

10 A No.

11 MR. GRANNIS: Argumentative. Misstates prior
12 testimony.

13 THE WITNESS: No, I didn't say that.

14 Q BY MR. METZGER: Okay. Here is what I want to
15 know: Is the pathological description of inflammation
16 of the thyroid gland consistent with the diagnosis of a
17 non-Hodgkin's lymphoma occurring in the thyroid gland?

18 MR. GRANNIS: It's vague. Overbroad.
19 Misstates prior testimony. It is argumentative.

20 THE WITNESS: I find that to be a pathology
21 question. I am not an expert in that area.
22 Epidemiologically it is --

23 Q BY MR. METZGER: I understand
24 epidemiologically, but --

25 A Then I can't answer your pathology question.

1 MR. GRANNIS: Dr. Mundt is here as an expert in
2 epidemiology. And if he wishes to answer your question
3 from an epidemiologic standpoint, I'd appreciate if you
4 would give him the opportunity to do so.

5 MR. METZGER: I thought he gave me his answer
6 to the prior question.

7 MR. GRANNIS: You cut him off, Raphael.

8 Q BY MR. METZGER: Well, I thought you had told
9 me that among patients --

10 MR. GRANNIS: You still cut him off. I'd
11 appreciate if you would let him finish his answers.

12 Q BY MR. METZGER: Go ahead.

13 A Thank you.

14 The epidemiological perspective, the
15 thyroiditis is clearly a strong risk factor for certain
16 NHL's of the thyroid.

17 Q Okay. Incidentally, have you produced any
18 literature regarding that?

19 A Yes. I believe those articles that pertain to
20 this are in the miscellaneous.

21 Q Okay. All right.

22 MR. GRANNIS: That is Exhibit 6.

23 THE WITNESS: That is correct.

24 Q BY MR. METZGER: Let's just take a quick look
25 at that.

1 Tell me which of the articles on Exhibit 6
2 pertain to the epidemiology or the epidemiologic
3 association between chronic lymphocytic thyroiditis and
4 non-Hodgkin's lymphoma or B-cell lymphoma.

5 A I can't recall these just off the top of my
6 head, but there are -- there are probably four or five
7 among them. I believe Pedersen, Hyjek, Holm and others.

8 Q Okay. Now, you indicate in your opinions that
9 you have evaluated the epidemiologic literature
10 evaluating the association, if any, between exposure to
11 benzene and other organic solvents, as well as working
12 in printing and related occupations, and increased risk
13 of NHL's including subtypes such as DLBCL and DLBTL;
14 correct?

15 A More or less. I am not sure that you read the
16 word "benzene," but --

17 Q Okay. In any event, you know where I am
18 referring to in your statement?

19 A Yes, in my preamble, yes.

20 Q In the preamble, okay.

21 Is it correct that there are a number of
22 epidemiologic studies which have shown statistically
23 significantly increased risks or rates of NHL among
24 benzene-exposed workers?

25 MR. GRANNIS: Vague. Overbroad. Incomplete

1 hypothetical. Argumentative.

2 THE WITNESS: There are epidemiological studies
3 that among their reports include statistically
4 significant measures of association in which the cohorts
5 were attempting to associate occupational exposures,
6 including benzene and NHL's as a class or as subsets,
7 subtypes of NHL's.

8 The only cohort I recall that is widely viewed
9 as limiting exposures to benzene is the pliofilm cohort
10 in which NHL's are in fact evaluated.

11 Q BY MR. METZGER: Okay. And there were NHL's
12 identified in the pliofilm cohort, were there not?

13 A There are NHL's identified in any cohort
14 because it is not an uncommon disease. They were not
15 identified in excess in the pliofilm cohort.

16 Q Isn't that because some of the NHL's were left
17 out; they were excluded?

18 MR. GRANNIS: Argumentative.

19 THE WITNESS: I have no reason to believe that
20 the reports as published and updated through at least
21 2002 have not had an opportunity to identify to show
22 NHL's in excess. As of the record that I have, there is
23 no excess.

24 Q BY MR. METZGER: So you are not aware that
25 there was in fact an NHL worker in the pliofilm cohort

1 who committed suicide due to severe itching from his NHL
2 which was not counted in the pliofilm cohort because the
3 cause of death was suicide?

4 MR. GRANNIS: Argumentative.

5 THE WITNESS: I have seen this reported, but
6 you have to keep in mind if you want to count it you
7 would have to do the same thing in a reference
8 populations and make sure that it is a level of
9 inaccuracy that I think would be applied to across the
10 board.

11 Q BY MR. METZGER: So you are aware of that
12 situation?

13 A Yes.

14 Q I see.

15 And what is the incidence of mortality from
16 suicide due to severe itching from non-Hodgkin's
17 lymphoma in the general population?

18 MR. GRANNIS: Vague and ambiguous. Overbroad.
19 Argumentative. Incomplete hypothetical.

20 THE WITNESS: It is not a research question
21 that has ever been posed to me before so I haven't
22 looked at it.

23 Q BY MR. METZGER: You don't know what the
24 incidence is?

25 A I don't know that anyone knows what the

1 incidence is.

2 Q Is that incidence rate ascertainable from
3 existing literature?

4 A I doubt it.

5 MR. GRANNIS: Vague and ambiguous. Overbroad.
6 Calls for speculation. Incomplete hypothetical.

7 Q BY MR. METZGER: So how would you control for
8 that since it can't be ascertained?

9 MR. GRANNIS: Vague and ambiguous.
10 Argumentative. Misstates prior testimony.

11 THE WITNESS: Epidemiologically you have to
12 evaluate whether or not that would lead to a bias. One
13 could add one more NHL to that in a very conservative
14 way and ignore those that might occur in a referent
15 population to determine what the sensitivity of the
16 result was to a single case.

17 Q BY MR. METZGER: Okay. Now, have you read the
18 most recent meta-analysis regarding benzene and
19 non-Hodgkin's lymphoma?

20 A There have been three. Let me clarify which
21 you are referring to.

22 Q Let me ask you please identify for me those
23 meta-analyses regarding benzene and non-Hodgkin's
24 lymphoma that you are aware of that you have read,
25 reviewed and considered for this case.

MR. GRANNIS: Well, that may be two different questions; what's he aware of, what has he read, reviewed and considered, you know. I'd prefer you ask him one question and then another.

Q BY MR. METZGER: Let's start with those that
you are aware of.

A I am aware of Wong's, and I am blanking on the next, and the third is Steinmaus.

Q Okay.

A If I could take a quick look at Exhibit 5, I could provide it.

Q Okay.

A Thank you.

It is Lamm, the third author.

Q So you are familiar with the meta-analyses by Wong, Lamm and Steinmaus; is that correct?

A Yes.

Q Any others?

A Not that I consider or self-identify as meta-analysis.

Q I am just asking are you aware of any other meta-analyses regarding benzene and non-Hodgkin's lymphoma?

MR. GRANNIS: Overbroad. Vague.

THE WITNESS: I identify those as the

1 meta-analyses distinct from other reviews where results
2 are --

3 Q BY MR. METZGER: I am not talking about
4 reviews; I am talking about meta-analysis.

5 A Okay. Thank you.

6 I wanted to make sure we were talking about
7 meta-analyses as either the authors describe it or as I
8 would consider it.

9 Q So what I'm asking you is, setting aside
10 reviews and any other type of study, are you aware of
11 any meta-analysis regarding benzene and non-Hodgkin's
12 lymphoma other than those published by Wong, Lamm and
13 Steinmaus?

14 MR. GRANNIS: Vague and ambiguous. Overbroad.

15 THE WITNESS: I am aware of earlier ones which
16 I did not look at closely and factor in.

17 Q BY MR. METZGER: Can you identify it?

18 A Not offhand.

19 Q Can you tell me the results?

20 A No. I didn't examine older materials. I favor
21 newer materials.

22 Q Have you -- well, are you aware of any newer
23 meta-analyses regarding benzene and non-Hodgkin's
24 lymphoma than the three that you identified?

25 A No.

1 Q What reviews regarding benzene and
2 non-Hodgkin's lymphoma have you read, reviewed and
3 considered for this case that you rely on for your
4 opinions in this case?

5 A My reliance is on the primary studies, so I am
6 aware of and have read and reviewed not only the
7 meta-analyses but several reviews on non-Hodgkin's
8 lymphoma and on benzene and non-Hodgkin's lymphoma.

9 Q Which reviews regarding benzene and
10 non-Hodgkin's lymphoma have you read, reviewed or
11 considered for this case?

12 MR. GRANNIS: Vague.

13 THE WITNESS: The ones that I have are on the
14 disk. I can't tell you off the top of my head.

15 Q BY MR. METZGER: Take a look at the listing,
16 please.

17 A Unfortunately without the titles printed I
18 can't reliably identify these, but I know that that
19 Boffetta is a review, Alexander is a review, Morton. I
20 guess there is two Mortons. One in 2008 comes to mind
21 as a particularly relevant review of NHL.

22 I am afraid unless I look at the titles it is
23 difficult.

24 Q Okay. I want to go back to your CV. You
25 mentioned that you have been doing some studies with

1 this group in Germany, and I think you identified an
2 article here by an author by the name of Straif or
3 Straif?

4 A Yes. Straif is an IARC employee.

5 Q Is that Kurt Straif?

6 A Kurt Straif, yes. We have worked together for
7 years.

8 Q Okay. Do you respect his work?

9 MR. GRANNIS: Vague. Overbroad.

10 THE WITNESS: I respect him as a colleague.
11 And I would have to look at a particular piece of work
12 because I think everyone is capable of producing
13 something that is not great.

14 I wouldn't label him -- I have no reason to say
15 that I disrespect him in any way. But with respect to
16 his work as a scientist and as an objective evaluator, I
17 would have to review, as I would a peer, submitted
18 publication to one of the journals I review for for the
19 quality of that work.

20 Q BY MR. METZGER: How many years have you worked
21 with Kurt Straif?

22 A I worked with Kurt directly for probably five
23 years surrounding the German rubber study, that
24 constellation of studies.

25 Q And during that time did you form an opinion

1 regarding the scientific integrity?

2 MR. GRANNIS: Vague and overbroad.

3 THE WITNESS: Well, generally I respect Kurt
4 and his scientific integrity. I would have to reserve
5 the right to comment on a particular piece of work just
6 not because he is a friend or colleague or any other
7 category of person, but as a fellow scientist, we tend
8 to review and critique each other's work.

9 Q BY MR. METZGER: Have you ever discussed with
10 him the relationship between benzene and non-Hodgkin's
11 lymphoma?

12 MR. GRANNIS: Vague and overbroad.

13 THE WITNESS: It is possible in the years we
14 worked together in the German rubber cohorts that may
15 have been discussed. I just don't have any specific
16 recall of it.

17 Q BY MR. METZGER: Okay. Have you prepared any
18 criticism of either the Steinmaus meta-analysis or --
19 well, let me leave the question at that.

20 Have you done so?

21 A I have not. I have not been asked. Again,
22 this is --

23 MR. GRANNIS: By your question, you mean like a
24 written critique?

25 MR. METZGER: Yes.

1 THE WITNESS: I am certainly aware of what he
2 has done and I think it deserves some more in-depth
3 evaluation. But in the time that I have had available
4 to come up to speed on this case, it has not been a
5 priority.

6 Again, I rely on the primary studies, some of
7 which Steinmaus selects and cites, but that is not the
8 universe. And the end of the day I think that there are
9 serious questions raised by that paper that could be
10 addressed, but it's not a priority scientifically for me
11 to do that.

12 Q BY MR. METZGER: Have you done any statistical
13 compilation of the studies regarding organic solvents
14 and NHL?

15 A No.

16 Q Have you done any statistical compilation
17 regarding the studies of benzene and NHL?

18 MR. GRANNIS: Vague. Overbroad.

19 THE WITNESS: Statistical compilation may not
20 be a valid exercise so --

21 Q BY MR. METZGER: I am just asking if you did
22 one or not.

23 A I just want to make sure that the reason I
24 wouldn't have done something like that is why would be
25 my question. Why would you statistically compile

1 results from a wide array of studies and exposures.

2 Q Have you ever done a meta-analysis regarding
3 either benzene or organic solvents and NHL?

4 MR. GRANNIS: Vague. Overbroad.

5 THE WITNESS: No, I have not specifically done
6 that.

7 Q BY MR. METZGER: Okay. Let's go back to your
8 opinions.

9 In your first opinion you write that "Valid
10 interpretation of epidemiological evidence must consider
11 study strengths and weaknesses, most importantly the
12 avoidance of bias, or systematic error stemming from
13 study design and conduct, data availability, specificity
14 of exposure, specificity of disease, and random error,
15 among others."

16 Did I read that correctly?

17 A Yes.

18 Q Have you --

19 MR. GRANNIS: Except for the last sentence.

20 MR. METZGER: I will get to that.

21 MR. GRANNIS: Okay.

22 Q BY MR. METZGER: Well, I will read the last
23 sentence for Mr. Grannis. "Failure to avoid or account
24 for such biases can result in invalid results and
25 interpretations."

1 That is the last sentence that you wrote in
2 that paragraph; is that correct?

3 A And you read it correctly.

4 Q So here is my question: Have you written out,
5 either for this case or to submit to any journal for
6 publication, an analysis of the strength and weaknesses
7 of the epidemiologic studies regarding benzene or
8 organic solvents and NHL?

9 MR. GRANNIS: Argumentative. Vague and
10 ambiguous.

11 THE WITNESS: I have not produced such a
12 document.

13 Q BY MR. METZGER: Okay. Have you produced such
14 a document regarding bias in those studies?

15 A No.

16 Q Or systematic error in those studies?

17 MR. GRANNIS: Same objections.

18 THE WITNESS: No, I have not produced written
19 documents of the qualities of or lack of qualities of
20 these various articles.

21 Q BY MR. METZGER: Or data availability?

22 MR. GRANNIS: Same objections.

23 THE WITNESS: Same answer.

24 Q BY MR. METZGER: Specificity of exposure?

25 MR. GRANNIS: Same objections.

1 THE WITNESS: That's right, I have not written
2 a report on this topic covering these dimensions of my
3 opinion.

4 Q BY MR. METZGER: Okay. Have you in any way
5 compiled a list of the studies that you think suffer
6 from such biases versus those that don't?

7 MR. GRANNIS: Same objections.

8 THE WITNESS: No. I think that it is an
9 oversimplification. If I were to critically assess the
10 individual studies, they would not fall into one or
11 another.

12 It really requires a critical assessment of how
13 those results might have come about and whether that is
14 a valid representation of the study.

15 Q BY MR. METZGER: In your second opinion you
16 write that "There is insufficient/inadequate evidence to
17 validly support a conclusion that these chemicals cause
18 NHL's, including diffuse large B-cell lymphoma."

19 What evidence are you looking to for you
20 conclude that the evidence would be sufficient or
21 adequate?

22 A Fair question. The method and process that I
23 use is pretty similar to what is used by the
24 epidemiology group at the IARC reviews where the better
25 studies are identified based on their methodology,

1 typically case control, cohort studies. Not to say the
2 others are discarded, but they certainly carry less
3 weight.

4 And then of those that are on point, I would
5 identify studies looking at specific exposures and --
6 for example, the diffuse B-cell lymphomas, there are a
7 few studies that look specifically at subtype NHL.

8 And among those that have reasonable quality,
9 that is large enough sample size, consideration of
10 confounding, consideration for potential for selection
11 bias, reporting bias; then look at among that subset how
12 strong and how consistently is that association
13 important.

14 Q Okay. Did you do that for this case?

15 MR. GRANNIS: Vague. Overbroad.
16 Argumentative.

17 THE WITNESS: In some ways I certainly have.

18 Q BY MR. METZGER: Okay.

19 A Not to the extent of -- well, let's say enough
20 of the review of these papers to note that they have not
21 been sufficiently critiqued by Dr. Harrison to justify
22 his conclusions.

23 Q Well, which are the pertinent studies that you
24 identified for this case?

25 A For example --

1 Q No. I want a complete listing; not an example.

2 A Well, I told you three minutes ago that I
3 didn't do that evaluation specifically for this case in
4 a way that I could represent that these are the 12 best
5 articles for this purpose.

6 But, for example, Rinsky, which I don't think
7 we see in Steinmaus, Sorahan, large study NHL's in some
8 of the most highly exposed workers in the U.K., not
9 included.

10 So my criticism is of what has been done and
11 that it fails to achieve a level adequate to draw the
12 conclusions that Dr. Harrison has drawn.

13 Q Well, I am not asking about Dr. Harrison's
14 conclusion; I am asking about your conclusion.

15 What I want to know is what quantum of evidence
16 do you need for you to conclude that the association
17 between benzene and NHL is causal, what is that level of
18 sufficient and adequate evidence for you?

19 MR. GRANNIS: Compound. Vague and ambiguous.
20 Overbroad.

21 Q BY MR. METZGER: Can you quantify it for me,
22 please?

23 A I don't think it can be quantified. I did
24 qualify it earlier by saying that you would need among
25 this group, however defined, of better studies, strong

1 and consistent associations that are not otherwise
2 explained by study bias or error.

3 Q How strong?

4 A I don't know that it needs to be specifically
5 quantified. If you have 20 studies and 15 of them show
6 positive associations ranging from, you know, 1.
7 something to 34 or higher, you would clearly in that
8 situation more readily embrace a conclusion, again,
9 assuming that the individual studies aren't flawed.

10 You might be more willing to conclude
11 epidemiologically that there is something going on than
12 in the literature that we have at hand where the results
13 range from appearing to be protective against NHL to
14 positive studies showing a statistically significant
15 association.

16 Q How consistent do the studies have to be?

17 A Again, I don't know that consistency is ever
18 quantified. It is I think part of the practice of
19 evaluating epidemiologic literature that one identifies
20 enough consistent evidence and a lack of opposing
21 evidence to lean toward a judgment of causation.

22 Q When you refer to studies showing a protective
23 evidence against NHL, are you referring to studies that
24 report statistically significant negative correlations
25 between benzene and NHL?

1 A It is interesting wording because it seems that
2 statistically significant negative associations are
3 usually described that way, but statistically
4 significant positive findings typically described as
5 causal.

6 I think epidemiologically we view them as
7 statistically significant positive or negative, and that
8 the big picture is some objective understanding of their
9 entirety.

10 Q I don't know that you answered my question, but
11 probably because I didn't understand your answer.

12 Let me ask you this: From all of the studies
13 that you have reviewed that are set forth on Exhibits 5
14 and 6, were there any studies that reported
15 statistically significantly negative correlations
16 between benzene exposure and NHL?

17 MR. GRANNIS: Vague and ambiguous. Overbroad.
18 Argumentative.

19 THE WITNESS: I would expect so.

20 Q BY MR. METZGER: I am not asking what you
21 expect.

22 Could you identify any studies?

23 A Not off the top of my head.

24 MR. GRANNIS: Same objection.

25 Q BY MR. METZGER: And during the course of your

1 review of the study on Exhibits 5 and 6, which you
2 reviewed for this case, did you identify any
3 statistically significantly negative studies with a
4 correlation between organic solvent exposure and NHL?

5 MR. GRANNIS: Same objections.

6 THE WITNESS: I can't recall specifically.

7 Q BY MR. METZGER: Have you identified any
8 studies which demonstrate that exposure to solvents or
9 benzene produces a protective effect against the
10 development of non-Hodgkin's lymphoma?

11 MR. GRANNIS: Same objections.

12 THE WITNESS: And by protective you mean a
13 negative correlation. I am resistant to using the word
14 "protective" as much as I am resistant to using the word
15 "causal" for a positive study.

16 Q BY MR. METZGER: I only asked because you
17 referred to a protective study that showed a protective
18 effect against NHL.

19 Are there any?

20 MR. GRANNIS: Same objections.

21 THE WITNESS: Well, I don't know what your
22 question is. Are you asking whether there are studies
23 that find statistically significant deficits of NHL in
24 exposed populations?

25 Q BY MR. METZGER: Populations exposed to benzene

1 in organic solvents.

2 A Yes, there certainly are.

3 Q What are they?

4 A They are in there.

5 Q Which are they?

6 A Well, we could go through it, but they are --

7 Q I am asking you to identify any.

8 MR. GRANNIS: This is not a memory test. If
9 the witness would like to refer to a document or to his
10 CD-ROM, let him do so.

11 Q BY MR. METZGER: Can you identify any by
12 looking at the listing of the studies on Exhibits 5 or
13 6?

14 A Well, it is also not a meaningful exercise for
15 me because I am not putting forward that any of these
16 exposures are protective.

17 Q Okay. Fair enough.

18 A I am pointing out that the results are randomly
19 distributed about the null; some positive, some
20 negative, some significant, both in each direction.

21 Q What methodology did you employ in reaching
22 your conclusion regarding general causation?

23 MR. GRANNIS: Vague and ambiguous. Overbroad.

24 THE WITNESS: I would say the methodology is
25 described by the process that IARC uses, which is a

1 critical review and synthesis.

2 Q BY MR. METZGER: Is that based upon the
3 Bradford Hill factors?

4 A Certainly Bradford Hill in the '60s brought
5 occupational medicine or helped focus occupational
6 medicine on applying a little bit more reasoning in
7 drawing causal conclusions.

8 And I believe most epidemiologists are well
9 aware of Bradford Hill's guidelines and incorporate them
10 in their thinking.

11 Q Did you --

12 A But I think that what Bradford Hill doesn't go
13 into adequately as would be, you know, embraced today is
14 a fuller critical assessment of the findings rather than
15 let's say a summation of the findings and applying
16 arbitrarily these guidelines.

17 I certainly do embrace those as seminal
18 developments as with the Surgeon General 64 parallel set
19 of scientific considerations that help focus scientific
20 evidence and epidemiologists on how to synthesize and
21 conclude based on that evidence.

22 Q In reaching your conclusion for general
23 causation in this case, did you evaluate the studies
24 using the Bradford Hill factors?

25 MR. GRANNIS: Argumentative.

1 THE WITNESS: I am not sure that is an
2 appropriate exercise. I think it is unusual for an
3 epidemiologist to sit down and use something, a
4 guideline like that.

5 On the other hand, the critical points that we
6 do use in evaluating individual studies are compatible
7 with those general principles.

8 But, for instance, to determine whether
9 exposure preceded the disease is not a particularly --
10 although it is the most necessary, perhaps the only one
11 that's necessary in determining causation, not usually
12 the focus of any attention in a critical review or
13 assessment.

14 Q BY MR. METZGER: I appreciate your statement.
15 But I just want to know in reaching your conclusion in
16 this case did you or did you not attempt to faithfully
17 apply the Bradford Hill factors?

18 MR. GRANNIS: Excuse me. Vague. Ambiguous.
19 Overbroad. Argumentative.

20 THE WITNESS: And I don't want to be
21 argumentative because I know Bradford Hill and they are
22 mistakenly referred to as criteria often are well
23 respected, but that reduces what epidemiologists today
24 do to fairly intuitive concepts.

25 That doesn't mean that they necessarily apply

1 directly to a study. They really were intended to apply
2 to the occupational medical community who in its day was
3 finding many, many associations and reporting them.

4 Bradford Hill was cautioning that you really
5 need to think through before you draw these conclusions.
6 So he says given an association, does it fit these
7 things.

8 Q BY MR. METZGER: I understand.

9 My question is, did you or did you not apply it
10 and consider the Bradford Hill factors in reaching your
11 causal opinion in this case?

12 MR. GRANNIS: Same objections. And asked and
13 answered.

14 THE WITNESS: I absolutely applied the
15 principles embraced by those.

16 Q BY MR. METZGER: Okay.

17 A But I do not go through a checklist of those
18 things, which is incompatible with their intended use.

19 Q When you say that you absolutely do that, did
20 you do that in this case?

21 A With what?

22 Q For in assessing the studies between --
23 regarding benzene or organic solvent and NHL.

24 MR. GRANNIS: Vague. Overbroad.

25 THE WITNESS: Again, yes, absolutely.

1 Q BY MR. METZGER: Okay.

2 A But not in a mechanical way. I don't want to
3 imply it is appropriate to take these nine guideposts,
4 guide points and that epidemiological critical review
5 can be reduced to ticking off nine boxes.

6 Q You did mention that the approach that you
7 followed was that in which you believe IARC employs; is
8 that correct?

9 A Yes, in the epidemiology section of IARC.

10 Q Okay. It is true, is it not, that IARC
11 classifies chemicals as to their carcinogenicity?

12 A That is I believe the purpose of the monograph
13 series and the associated meetings is to identify
14 carcinogens.

15 It has not been limited to chemicals per say.
16 It has included things like shift work and fire
17 fighting.

18 Q And occupations like painting?

19 A And painting, which are not chemicals or
20 exposures.

21 Q Right. Okay.

22 But it is also true, is it not, that IARC does
23 not classify chemicals as lymphomagens?

24 MR. GRANNIS: Overbroad. Vague.

25 THE WITNESS: That is not true. Technically I

1 understand what you are getting at. IARC traditionally
2 had identified chemicals as carcinogenic.

3 As of about 2006 they have required the
4 committees to identify the sites that are supportive of
5 that conclusion.

6 Of course that can't be exhaustively known. It
7 is a function of how much and how -- what the quality of
8 the epidemiology literature is on that particular
9 relationship.

10 Q BY MR. METZGER: But even since 2006 IARC does
11 not have a classification system for the classification
12 of lymphomagens. True?

13 A Well, if you narrow it to that, nor for any
14 other specific site. It is covered by their more recent
15 procedures for identifying the sites for which the --
16 let's say Group I designation applies in their opinion.

17 Q Okay. In your second opinion, the last
18 sentence, the one that Mr. Grannis wanted -- I am sorry.

19 The last sentence of your second opinion says,
20 "Furthermore, there is substantially evidence detracting
21 from this hypothesis," namely that benzene or organic
22 solvents cause NHL.

23 What is that substantial evidence that you are
24 referring to?

25 A It comes in various forms. Let's simplify it

1 and say that is two forms.

2 One is the large number of studies that don't
3 find any association. I believe many of those resulted
4 in the findings in Lamm and Wong's meta-analyses.

5 The other is if you look at the range of
6 exposures; not just chemicals, but range of risk factors
7 say for NHL there is hundreds of them.

8 And though you can tease benzene or solvent out
9 of some of these studies, there is many, many other
10 exposures that have produced excess risk estimates,
11 including being a clergyman or involved in the
12 transportation industry or working with meat or working
13 on a farm.

14 So to isolate the benzene in chemicals from
15 this kind of cacophony of noise from these studies, I
16 think is not a balanced approach.

17 We really only have to look at say a state of
18 the art review like Morton 2008 to see that, despite all
19 of these findings across the studies, that these -- this
20 very qualified group doesn't identify any of them as
21 particularly compelling risk factors associated with
22 NHL.

23 Q Are there any primary studies that you consider
24 to provide substantial evidence detracting from the
25 hypothesis that benzene or organic solvents causes NHL?

1 MR. GRANNIS: Vague. Overbroad.
2 Argumentative.

3 THE WITNESS: I think you are asking for
4 specific references.

5 Q BY MR. METZGER: Yes.

6 A I think that a look at the literature that I
7 have provided you there are numerous studies that fail
8 to show a positive association. And that those, though
9 they cannot prove a lack of association, certainly
10 detract from that hypothesis.

11 Q Can you identify those studies for me.

12 A I believe I did indirectly by citing the
13 studies identified in the meta-analyses of Wong and
14 Lamm.

15 Their arriving at a conclusion of no
16 association is driven by studies, some positive, some
17 negative, but on average showing no association.

18 Q Can you identify any other studies other than
19 those in Wong and Lamm?

20 A I am not representing Wong and Lamm as those
21 studies. I am representing that among their studies
22 reviewed will be ample studies that in sum provide no
23 evidence of increased risk in those populations.

24 Q Did any of those studies -- what you are
25 referring to as the studies in the Lamm review which did

1 not report a positive association, did any of them have
2 sufficient statistical power to detect a doubling of the
3 risk at low concentrations, around one part per million?

4 MR. GRANNIS: Argumentative. Vague and
5 ambiguous. Incomplete hypothetical.

6 THE WITNESS: I would think so.

7 Q BY MR. METZGER: Do you know so?

8 A I wasn't finished. I am sorry. If you want
9 to --

10 MR. GRANNIS: Go ahead.

11 Q BY MR. METZGER: Are you speculating when you
12 say "I would think so"?

13 MR. GRANNIS: That is another question. Let
14 him finish the last question.

15 MR. METZGER: I thought that was an answer.

16 MR. GRANNIS: He just said he wasn't finished.

17 Q BY MR. METZGER: Give me your explanation and
18 then we will go on.

19 A Sorry, I have lost track of the question now.
20 Could we have a read back.

21 MR. GRANNIS: Thank you.

22 (Record read as follows:

23 "Q Did any of those studies -- what you
24 are referring to as the studies in the
25 Lamm review which did not report a

1 positive association, did any of them
2 have sufficient statistical power to
3 detect a doubling of the risk at low
4 concentrations, around part per
5 million?")

6 THE WITNESS: And I began to answer that I
7 would think so, but not having done a power calculation
8 can't sit here and say yes.

9 But, for example, Sorahan. Sorahan is one of
10 the largest studies that both of those reviews I believe
11 consider that would have found an increase as large as a
12 doubling had there been one and there probably are
13 others but...

14 Q BY MR. METZGER: Are you referring to the
15 recent Sorahan study published around, what was it,
16 2005?

17 A Yes.

18 Q Well, that post dates both the Lamm and the
19 Wong reviews, doesn't it?

20 A Sorahan 2002, it might. You are right so ...

21 Q Okay.

22 A But I believe it answers your question, a paper
23 that has adequate power to detect a doubling.

24 Q Have you read any criticisms of the Sorahan
25 study?

1 A I recall an exchange or a criticism that was
2 appropriately addressed and dispensed with. I don't
3 recall what the criticism was.

4 Q Do you recall who authored the criticism?

5 A No.

6 Q Do you recall who authored the explanation or
7 the justification --

8 A No.

9 Q -- addressing the criticism?

10 A No, I don't recall.

11 Q Okay. Now, I didn't -- in looking through the
12 lists of the literature on Exhibits 5 and 6, I didn't
13 see any animal studies.

14 Were there any?

15 A I am sorry. I am an epidemiologist.

16 Q So you didn't consider any animal studies for
17 your --

18 A Epidemiology --

19 MR. GRANNIS: Excuse me. Argumentative. Vague
20 and ambiguous. Overbroad.

21 THE WITNESS: -- has the pesky root of -demos
22 in it which pertains to people.

23 Q BY MR. METZGER: Well, my question though is
24 did you consider any animal studies regarding benzene
25 and lymphoma or organic solvent and lymphoma in reaching

1 your causal opinion in this case?

2 MR. GRANNIS: Compound. Vague and ambiguous.
3 Overbroad. Argumentative.

4 THE WITNESS: And outside of my area of
5 expertise.

6 Q BY MR. METZGER: So you did consider those; is
7 that correct?

8 MR. GRANNIS: Same objection.

9 THE WITNESS: I am an epidemiologist.

10 Q BY MR. METZGER: I just want to know if you
11 considered those, "Yes" or "No." I am not asking what
12 you are.

13 MR. GRANNIS: You are interrupting him again.
14 I believe he has given you his answer and explained the
15 reason for it.

16 MR. METZGER: I didn't get a clear answer.

17 Q Have you considered any animal studies
18 regarding benzene or solvent exposed animals and the
19 development of non-Hodgkin's lymphoma in reaching your
20 opinion as to whether solvents and benzene causes NHL?

21 MR. GRANNIS: Same objections.

22 THE WITNESS: My research and therefore my
23 opinions are based on my evaluation of the
24 epidemiological literature only.

25 Q BY MR. METZGER: So you did not consider any

1 animal studies; correct?

2 MR. GRANNIS: Same objections.

3 THE WITNESS: I did not review any animal tox
4 studies.

5 Q BY MR. METZGER: Did you review any
6 experimental studies regarding the ability of the
7 benzene or organic solvents to cause hematotoxicity,
8 lymphopoietic toxicity, altercations of immune function,
9 did you consider any of those studies?

10 MR. GRANNIS: Vague and ambiguous. Overbroad.
11 Argumentative.

12 THE WITNESS: In humans or in animals?

13 Q BY MR. METZGER: In either, in reaching your
14 opinions in this case.

15 A No.

16 MR. GRANNIS: Same objections.

17 Q BY MR. METZGER: Did you consider any studies
18 evaluating the clastogenic potential -- strike that.

19 Did you consider any studies evaluating
20 clastogenicity of benzene and/or organic solvents in
21 reaching your opinions in this case?

22 MR. GRANNIS: Vague and ambiguous. Overbroad.
23 Argumentative.

24 THE WITNESS: Yeah. I think I made it clear
25 that I reviewed the epidemiologic literature and I don't

1 think that the epidemiological studies address
2 toxicology or pathology directly.

3 I'm certainly dependent on them for
4 understanding what we are studying and how we might
5 design a study, but I did not review that literature.
6 It is outside of my area of expertise.

7 Q BY MR. METZGER: Okay. Do you believe that it
8 is appropriate to make a causal assessment without
9 considering animal studies and experimental studies? Do
10 you?

11 MR. GRANNIS: Argumentative. Vague and
12 ambiguous. Overbroad. Incomplete hypothetical.

13 THE WITNESS: It also depends on what is
14 available. Unfortunately, much research that we would
15 like to have on humans, the relevant species, in actual
16 doses that are encountered in whatever workplace
17 settings, but we don't.

18 So to some extent we have to factor in evidence
19 from other sciences to supplement what is seen
20 epidemiologically.

21 Q BY MR. METZGER: My question is, do you
22 consider it to be a valid scientific methodology not to
23 consider animal studies and other experimental studies
24 in reaching a determination on the issue of general
25 causation?

1 MR. GRANNIS: Vague and ambiguous. Overbroad.
2 Argumentative. Incomplete hypothetical.

3 THE WITNESS: I think that if one is conducting
4 this review epidemiologically, as the epidemiology
5 section would at IARC, they come to a conclusion despite
6 what others are discussing in the other rooms on animal
7 studies or on mechanism.

8 So they do come to a conclusion as to whether
9 the evidence epidemiologically is sufficient to support
10 a causal determination.

11 So the methodology --

12 Q BY MR. METZGER: So you consider it a valid --

13 A And I am not sure if you are referring to it in
14 any setting, but certainly an epidemiological evaluation
15 can be done exclusively of the evaluation of these
16 other. Ultimately I think they combine.

17 Q BY MR. METZGER: When you say they combine, do
18 you mean that in reaching a causal determination it is
19 both necessary and appropriate to consider all of the
20 available scientific evidence that bears on the
21 question, not just the epidemiology but also toxicology
22 and experimental studies?

23 MR. GRANNIS: Compound. Vague and ambiguous.
24 Argumentative. Overbroad. Incomplete hypothetical.

25 THE WITNESS: That is a different question. I

1 do believe that to make a causal judgment we want to
2 factor in all available evidence from these other
3 fields.

4 I think you had worded it quite differently
5 before so I had a hard time answering it.

6 Q BY MR. METZGER: And in fact when IARC makes
7 its determinations, IARC reviews and assesses the
8 strength of the animal evidence and also the other
9 experimental studies, including DNA studies and other
10 types of studies. True?

11 MR. GRANNIS: Vague and ambiguous. Overbroad.

12 THE WITNESS: Generally true, and as available.
13 For instance, for painting there were no animal studies
14 and I presume there are no animals that are painting.

15 Q BY MR. METZGER: Okay. Are all of the opinions
16 that you have formed for this case set forth in Exhibit
17 7?

18 A Certainly these are my central opinions. There
19 are probably variations on these that supplement these
20 opinions.

21 For example, to the extent that evidence put
22 forward by let's say Dr. Harrison relies on
23 epidemiological studies, I would expect to critique, as
24 we discussed earlier, on these criteria, those studies
25 that he relies upon.

1 Q Which studies?

2 A I am not -- I can't say that he has identified
3 specifically a set of studies in which he relies.

4 Q Did you read the 200 odd page declaration that
5 he prepared regarding benzene/organic solvents and
6 non-Hodgkin's lymphoma?

7 A I did.

8 Q Okay. And there were a lot of studies
9 identified in that, were there not?

10 A There is a huge number of studies identified --

11 Q Which of those studies do you have --

12 A -- some of which I expect he will specifically
13 identify as key in relying upon. I believe there was
14 one, Hayes. I expect that if he advances his opinions
15 based on Hayes, that I would critique Hayes because I
16 don't think he has.

17 Q All right. What are your critiques of the
18 Hayes study?

19 MR. GRANNIS: Which Hayes study?

20 MR. METZGER: The one that he is referring to.

21 MR. GRANNIS: Well, okay. Vague and ambiguous.
22 Overbroad. Incomplete hypothetical. Argumentative. He
23 did not say "the Hayes study."

24 The witness did not say "the Hayes study." The
25 witness said, "Hayes."

1 Q BY MR. METZGER: I assume that you are
2 referring to the 1997 study by Hayes published in JNCI;
3 is that correct, doctor?

4 MR. GRANNIS: That's not what Dr. Harrison
5 limited himself to.

6 THE WITNESS: Well, in fact that is one of
7 several from the group that includes Yin. I think the
8 same results were published many times.

9 Q BY MR. METZGER: Actually the results regarding
10 lymphoma were published in the Hayes 1997; correct, not
11 in the other --

12 A I don't think that is accurate, but we could
13 check.

14 Q What are your criticisms of the Hayes 1997
15 study?

16 A Well, for one, with respect to NHL there is
17 certain question regarding the actual diagnosis of
18 NHL.

19 Q Really?

20 A In the article --

21 MR. GRANNIS: Excuse me, counsel.

22 Q BY MR. METZGER: Are you serious?

23 MR. GRANNIS: Excuse me, counsel. The witness
24 has not finished his answer. He is entitled to answer
25 your question.

1 Q BY MR. METZGER: I am sorry. I do apologize
2 for interrupting. I was just flabbergasted by the first
3 statement.

4 MR. GRANNIS: Okay. Flabbergasted --

5 Q BY MR. METZGER: Finish your answer and we will
6 go ahead and talk about that.

7 MR. GRANNIS: One thing at a time, exactly.

8 Go ahead.

9 THE WITNESS: For example, you will read in
10 many of the NCI publications that there were panels of
11 reviewers verifying diagnosis and that they looked at
12 pathological specimens for these cases.

13 Do you know how many they had for NHL? Four.
14 So three of which were confirmed, two of which were
15 follicular, one of which was diffuse B. The rest we
16 don't know.

17 I raise the question. I am not saying that I
18 know that those are undiagnosed, but I think there is
19 that sense that the quality of the diagnosis is better
20 than it actually is if you read deeply into the Hayes
21 family of publications.

22 Q BY MR. METZGER: And where do you -- in which
23 Hayes study do you find what you just stated, that there
24 were four that were pathologically reviewed?

25 A I believe it is Travis. May I refer to Exhibit

1 5?

2 MR. GRANNIS: 5.

3 THE WITNESS: 5 or 6.

4 Q BY MR. METZGER: I know the Travis study. That
5 is fine.

6 MR. GRANNIS: But if he wants to refer to it --

7 Q BY MR. METZGER: You could refer to whatever
8 you want. Look at whatever you want. I know what you
9 are referring to.

10 MR. GRANNIS: This is 5 here or there?

11 MR. METZGER: I think this is my set.

12 MR. GRANNIS: Well, I see.

13 All right. Go ahead.

14 THE WITNESS: Travis is there, Travis '94.

15 Q BY MR. METZGER: All right. In fact, regarding
16 the pathology review, the pathology specimens that were
17 the subject of the Hayes study were reviewed by
18 pathologists at the Mayo Clinic, were they not?

19 MR. GRANNIS: Vague. Overbroad. Ambiguous.

20 THE WITNESS: I understand that all four of
21 them.

22 Q BY MR. METZGER: And do you consider -- isn't
23 that a very positive feature of the study, that the
24 specimens were in fact reviewed by pathologists from the
25 Mayo Clinic?

1 MR. GRANNIS: Argumentative. Vague and
2 ambiguous. Overbroad.

3 THE WITNESS: I think the intent was good. The
4 reality of any of these studies is not the intent,
5 however. It is what is in the data.

6 Q BY MR. METZGER: Let's talk about --

7 A Noteworthy, since you point out that the Mayo
8 Clinic diagnosed these cases, that the one that -- of
9 the four that is questionably NHL has always been
10 included in the analyses as if it were confirmed, as
11 were the other, what were there, 12 or maybe 20 total.
12 I don't recall the number.

13 But the rest that were not confirmed are all
14 included. And that harkens to your comment on the
15 Rinsky, that there are always cases that might have been
16 in and out.

17 You will find that in the Hayes study that you
18 don't have to remove one or two or more or add one or
19 two more to the referent group that whole statistically
20 significant finding comes apart.

21 Q Can you identify for me any other epidemiology
22 study in which the investigators went to the trouble of
23 attempting to confirm pathological diagnosis on the
24 reports by sending the specimens themselves to the Mayo
25 Clinic for pathological analysis?

1 MR. GRANNIS: Argumentative. Vague and
2 ambiguous. Overbroad.

3 THE WITNESS: I think that the pathological
4 confirmation is much more prevalent in the U.S. and that
5 registry based studies and just the degree of accurate
6 diagnosis is going to be greater in the U.S.

7 I think there were fundamental concerns about
8 the quality of the diagnoses and the data in China and
9 therefore this was implemented to try to address that.

10 I think -- I am not questioning their intent.
11 Again, the reality was that they could not obtain path
12 verification on the vast majority of the cases.

13 Q BY MR. METZGER: And the epidemiologic studies
14 that you have conducted, have you ever sent or arranged
15 for the pathology specimens to be sent to the Mayo
16 Clinic for pathological confirmation of the diagnosis?

17 MR. GRANNIS: Argumentative. Vague and
18 ambiguous. Overbroad.

19 THE WITNESS: I say analogously in my German
20 silica worker study, we sent every single x-ray to the
21 German B-readers to be re-read so that we would have a
22 high quality of diagnosis before we tried to published
23 any paper on the risks -- quantitative risks of
24 silicosis and myelo Class I,I x-ray interpretation.

25 Q BY MR. METZGER: In any of the epidemiologic

1 studies that you have done, did you ever send pathology
2 specimens of patients diagnosed with cancer to the Mayo
3 Clinic to have the Mayo Clinic's expert pathologists
4 confirm the diagnosis?

5 MR. GRANNIS: Argumentative. Vague and
6 ambiguous. Overbroad.

7 THE WITNESS: No, I have not. I have not had
8 the opportunity to do comparable research in a place
9 where I had seriously questions about a diagnostic
10 capability locally.

11 Q BY MR. METZGER: You mentioned that there were
12 some variation on a theme for these opinions.

13 What other opinions do you have for this case
14 that are not set forth on Exhibit 7?

15 MR. GRANNIS: Mischaracterizes his prior
16 testimony.

17 THE WITNESS: These in fact are the main themes
18 and anything that I would testify to as far as I know
19 right now at this moment, given other, you know, usual
20 caveats that things may change or another paper may be
21 published that somehow changes things, my opinions will
22 largely be based on these.

23 They could be -- this is only a few paragraphs.
24 I didn't write a 300-page report, so obviously these
25 could be expanded in detail, but they would be

1 encompassed under these.

2 Q BY MR. METZGER: Are there any opinions that
3 you have formed in this case that are not encompassed in
4 the opinions set forth in Exhibit 7?

5 A No, sir. I did my best to write these as
6 carefully as I could to cover those bases.

7 Q Have you completed your work in this case?

8 A I don't think so.

9 Q What else do you need to do that you haven't
10 done?

11 A I think when it becomes clearer what
12 specifically Dr. Harrison might rely upon -- I have
13 described this before -- I will take a closer, more
14 critical look at it to see whether his conclusions can
15 be substantiated when the quality of the study and the,
16 you know, evaluation of these -- these are things that
17 he did not consider that I could tell for any one of the
18 hundreds of papers that he identified.

19 I would --

20 MR. GRANNIS: "These" being the issues
21 addressed in your summary of opinions?

22 THE WITNESS: Paragraph 1 of my opinions, I
23 would expect to apply that to each and every paper that
24 he puts forward.

25 Q BY MR. METZGER: I'd like to represent to you

1 that the matters on which Dr. Harrison is relying for
2 his assessment of the general causation issue are those
3 papers identified in his 200 odd page declaration, plus
4 the additional papers which supplement that that were
5 published after he prepared that declaration.

6 So with that understanding, are there any
7 opinions that you have for this case that are not set
8 forth in Exhibit 7?

9 A No.

10 Q Okay. And have you -- is there any particular
11 work that you have been asked to perform for this case
12 that you have not yet done?

13 A No. I have not been asked to do anything more
14 than what I have described here.

15 Q Were there any materials or publications that
16 you wanted to read for this case but which were not
17 available to you so you could not consider them in
18 reaching your opinions?

19 A That is a very good question. I appreciate
20 that. I believe that I to date have been able to find
21 and consider any of those materials that arose in the
22 course of my review.

23 Q Okay. Is your opinion in this case limited to
24 opinions on the subject of general causation or are you
25 also opining regarding specific causation?

1 A Well, that construct is -- translates into
2 epidemiologically causation determination because
3 epidemiology we tend to focus on determining general
4 causation.

5 Q Right.

6 A Where general causation is substantiated and a
7 conclusion can reasonably be determined, there are
8 epidemiological approaches to addressing specific
9 causation.

10 Q Have you done that in this case or have you not
11 because you do not believe that general causation is
12 satisfied?

13 A Well, I am confident that general causation is
14 not met with respect to the B -- diffuse-B, whether it
15 is in the thyroid or not, that has not been determined.

16 There is additionally evidence that risk
17 factors that Mr. Reese has evidence of do cause that
18 disease or are strongly associated with it in
19 epidemiologic terms.

20 Q Well, I guess my question is, are you going to
21 be testifying at trial that Mr. Reese's exposure to
22 benzene was insufficient to cause hematologic disease?

23 A I am not aware that that is the question in
24 this case. I think that Mr. Reese has a specific
25 disease and I think that the epidemiological evidence is

1 insufficient to conclude that those exposures caused
2 that disease.

3 So I will specifically address that causation
4 at that level.

5 Q General causation but not --

6 A I will apply the general causation to the
7 specific facts in this case that because -- and I think
8 it is captured here.

9 Because it does not support a general causation
10 conclusion, the claim that these alleged exposures
11 actually caused or substantially contributed to his
12 diffuse large cell B -- B-cell thyroid lymphoma cannot
13 be supported. That is that specific causal conclusion.

14 Q I understand what you are saying, but it's not
15 a specific causal assessment in the sense that you are
16 basing it on a specific dose assessment or a specific
17 latency or anything of that sort which usually goes into
18 specific causation because you don't even believe that
19 there is general causation; right?

20 MR. GRANNIS: Argumentative. Vague and
21 ambiguous. Overbroad.

22 THE WITNESS: It is my turn to gasp. That is
23 illogical. Of course I am talking about specific
24 causation.

25 Q BY MR. METZGER: Have you -- all right. It

1 doesn't matter.

2 We are done. I will get you a check.

3 I will propose that the court reporter can
4 forward the original transcript to Mr. Grannis; that he
5 will make it available to you; you can read and sign it
6 under penalty of perjury so you don't have to have it
7 notarized.

8 I would ask you to make any corrections or
9 changes that you have on the pages where the testimony
10 occurs and then to list them on the correction sheet at
11 the end of it so we may know where they are.

12 If you would then forward the original
13 transcript -- you could have 30 days to do this. If you
14 would then forward the original transcript to
15 Mr. Grannis, he will notify all counsel of changes, if
16 any; and then forward the original transcript on to me;
17 we will preserve it and lodge it with the court in
18 advance of trial; if the original is lost or not signed,
19 a certified copy may be used with full force and effect.

20 So stipulated?

21 MR. GRANNIS: I would just simply suggest
22 cutting out the middleman on one of those transmittals
23 and having the reporter transmit the original directly
24 to Dr. Mundt in Amherst with a pre-addressed pre-stamped
25 return envelope to my office so that I accomplish the

1 things that you have suggested in your proposed stip.

2 MR. METZGER: That is fine.

3 So stipulated?

4 ALL DEFENSE COUNSEL: So stipulated.

5 (ENDING TIME: 12:10 P.M.)

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STATE OF CALIFORNIA)
) ss

COUNTY OF LOS ANGELES)

I, the undersigned, declare under penalty of perjury that I have read the foregoing transcript, and I have made any corrections, additions or deletions that was desirous of making; that the foregoing is a true and correct transcript of my testimony contained therein.

EXECUTED this _____ day of _____,
20____, at _____, _____
(City) (State)

KENNETH A. MUNDT, Ph.D.

1 REPORTER'S CERTIFICATION

2
3 I, SHERI A. PLY, CSR No. 6507, a Certified
4 Shorthand Reporter in and for the State of California do
5 hereby certify:

6 That the foregoing proceedings were taken before
7 me at the time and place therein set forth, at which
8 time the witness was placed under oath by me;

9 That the testimony of the witness and all
10 objections made at the time of the examination were
11 recorded stenographically by me and were thereafter
12 transcribed;

13 That the foregoing transcript is a true and
14 correct record of the testimony so taken.

15 I further certify that I am not a relative or
16 employee of any attorney or of any of the parties, nor
17 financially interested in the action.

18 I declare under the penalty of perjury under the
19 laws of the State of California that the foregoing is
20 true and correct.

21
22 Dated this 21st day of October, 2009.

23
24 _____
25 SHERI A. PLY, CSR No. 6507