

IN THE CIRCUIT COURT FOR BALTIMORE CITY

IN RE: PERSONAL INJURY *

ASBESTOS LITIGATION *

* * * * *

NAYMAN LAWSON, et al., * January 12, 2010

* Meso Trial Group

Plaintiffs * Consolidated No.

v. * 24-X-08-000279

ACandS, INC., et al., *

Defendants *

* * * * *

CASE AFFECTED: *

ROBERT REHRIG * 24-X-07-000532

LEWIS B. SHIFFLETT * 24-X-07-000313

* * * * *

DEPOSITION OF SHELDON H. RABINOVITZ, Ph.D., C.I.H.

The Deposition of Sheldon H. Rabinovitz,
Ph.D., C.I.H. was taken on Monday, December 7, 2009,
commencing at 2:00 p.m. at the Marriott Springhill
Suites, 9715 Washingtonian Boulevard, Gaithersburg,
Maryland and was reported by Denise M. Thomas,
Notary Public.

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12 Inc.

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1 P R O C E E D I N G S

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3 Whereupon,

4 SHELDON H. RABINOVITZ, Ph.D., C.I.H.

5 A witness herein, called for oral
6 examination in the matter pending, being first duly
7 sworn to tell the truth, the whole truth and nothing
8 but the truth, testified as follows on

9 EXAMINATION

10 BY MR. RUCKDESCHEL:

11 Q Good afternoon, Dr. Rabinovitz. My
12 name is John Ruckdeschel. I am here on behalf of
13 the Shifflett family today. Can you please state
14 your name and your business address for the record?

15 A Sheldon H. Rabinovitz, 14712 Botany
16 Way, North Potomac, Maryland 20878.

17 Q Thank you, sir.
18 When is the last time you gave a
19 deposition?

20 A Let's see. It would have been I think
21 the 17th of November.

1 Q Approximately how many depositions did
2 you give in the month of November, sir?

3 A I don't know the exact number.

4 Q Can you give me an approximation of how
5 many depositions you have given in calendar year
6 2009?

7 A Probably about a little over 20.

8 Q Have you testified in trial in calendar
9 year 2009?

10 A Yes.

11 Q Approximately how many times?

12 A Two times.

13 Q Do you have a list of cases in which
14 you provided deposition and trial testimony, sir?

15 A Yes.

16 Q Okay. Could we mark that list as
17 Exhibit 1, please.

18 A Okay.

19 Q Thank you.

20 (Whereupon, Rabinovitz Deposition
21 Exhibit Number 1 was marked for identification.)

1 BY MR. RUCKDESCHEL:

2 Q How far back does that list go?

3 A This list goes back to 2002.

4 Q Is it complete and accurate, to the
5 best of your knowledge?

6 A Yes.

7 Q Great.

8 Have you seen the copy of the Notice of
9 Deposition in this case?

10 A Yes.

11 Q Do you have a copy of the notice?

12 A Yes.

13 Q Okay. Do you have the Shifflett
14 notice, the Rehrig notice, or both?

15 A I have both.

16 MR. RUCKDESCHEL: Okay. Let's mark
17 those collectively as Exhibit 2, please.

18 (Whereupon, Rabinovitz Deposition
19 Exhibit Number 2 was marked for identification.)

20 BY MR. RUCKDESCHEL:

21 Q Did you bring a CV with you?

1 A Yes.

2 Q Okay. We will mark that as Exhibit 3.

3 (Whereupon, Rabinovitz Deposition
4 Exhibit Number 3 was marked for identification.)

5 BY MR. RUCKDESCHEL:

6 Q Is it up to date?

7 A It is.

8 Q Have you published anything in the
9 peer-reviewed medical or scientific literature
10 concerning asbestos?

11 A No.

12 Q Have you published anything in the
13 peer-reviewed medical and scientific literature
14 regarding any topic?

15 A I have generated some documents while
16 with the EPA and NIOSH. I don't know if you would
17 consider it peer-reviewed literature. I mean, it is
18 peer reviewed and it is out there, but if you are
19 just talking about journal articles, then I don't
20 think I have done any peer-reviewed ones.

21 Q Okay. Let's talk for just a quick

1 second about some of the information in your last
2 answer.

3 Did you work for the Environmental
4 Protection Agency as an employee of the United
5 States Government?

6 A Yes.

7 Q Okay. When did that begin and end?

8 A I started in 1987. It ended full time
9 in 1989. And I continued to work for them part time
10 until 1992. And after that, I did some work for
11 them as a consultant.

12 Q Okay. When in 1987 did you begin?
13 When in the year? Was it the winter, the spring?

14 A I believe it was March.

15 Q And when in '89 did you stop working
16 full time?

17 A I think in February. January or
18 February.

19 Q And what was the reason that you went
20 from full to part time?

21 A Because I took a job with Sandler

1 Occupational Medicine Associates.

2 Q During your part-time work, were you an
3 employee of the United States Government or a
4 contractor?

5 A You know, I am not a hundred percent
6 sure. I think I might have been considered -- you
7 know, I am just not sure.

8 Q Fair enough.

9 And '87 to '89, you were actually an
10 employee of the EPA?

11 A Yes.

12 Q What about NIOSH?

13 A Yes, I was an employee with NIOSH.

14 Q During what time period?

15 A The end of 1983 until I went to the EPA
16 in 1987.

17 Q Now, you mentioned that there may have
18 been some papers that you worked on at the EPA and
19 NIOSH that had been reviewed by others, whether or
20 not they were published in a scientific journal.
21 Can you explain to me what you are talking about?

1 A Well, for example, I worked on several
2 NIOSH criteria documents which go through a
3 peer-review process. I also worked on a hazardous
4 waste guidance manual for how to protect workers at
5 hazardous waste sites. And that would go through a
6 review process. And I also was the chairman of a
7 committee that generated how you select and use
8 respirators in the workplace.

9 And while with EPA, I was responsible
10 for publishing a document on how to protect EPA
11 workers when they were doing asbestos inspections.
12 Those are the ones I can remember offhand that had a
13 specific review process.

14 Q And is performing a review process like
15 was done in those four documents that you have
16 mentioned offhand a relatively standard thing for
17 the EPA and NIOSH to do when they are putting
18 something out for the public or their employees to
19 rely upon?

20 A Yes.

21 Q And that happened with hazmat guidance

1 material, for example?

2 A Well, the document that I was the
3 chairman of the committee, it was an inter-agency
4 document on how to protect workers at hazardous
5 waste sites.

6 Q The EPA asbestos inspection document
7 you mentioned, the fourth publication or document
8 that you mentioned, that related to providing
9 guidance to Environmental Protection Agency
10 employees who would be out in the field in places
11 where there might be asbestos; is that correct?

12 A I think that's a fair characterization.

13 Q Would that include if they were
14 inspecting a garage?

15 A You know, my recollection, it was
16 dealing more with school inspections, so I don't
17 remember if it would be used in a garage. I just
18 don't remember.

19 Q Do you have a copy of it?

20 A I don't have it with me. I may have a
21 copy. I am not even sure if I have a copy of it

1 anymore.

2 Q Okay. Do you have any licenses in any
3 of the fields in which you have professional
4 credentials?

5 A I don't have I think what you would
6 call a license.

7 Q Okay. So you are an industrial
8 hygienist; is that correct?

9 A Yes.

10 Q But you don't get a license to practice
11 industrial hygiene; is that correct?

12 A I am not aware of a licensing
13 requirement.

14 Q Are you a certified industrial
15 hygienist?

16 A Yes.

17 Q When did you first receive your
18 certification?

19 A 1974.

20 Q Do you have to periodically renew your
21 certification?

1 A Yes.

2 Q How often?

3 A It used to be every six years. Now
4 it's every five years.

5 Q When is your next review?

6 A I believe in four years.

7 Q Has there ever been a time since you
8 were initially certified as an industrial hygienist
9 that that certification has lapsed?

10 A It never lapsed. I believe I was late
11 once in paying my dues, but I don't believe it ever
12 lapsed.

13 Q What was the consequence of being late
14 in paying your dues?

15 A I think I had to pay a late fee.

16 Q Fair enough.

17 Other than having to pay a late fee on
18 your dues, have you ever had any adverse action
19 taken with respect to your certification as an
20 industrial hygienist?

21 A I was once audited. It's not

1 necessarily an adverse action. It's that every so
2 often, hygienists get audited.

3 Q Can you give me a little more
4 information about how that came about and why?

5 A My understanding is that each year, 10
6 percent of all submissions of certification get
7 audited.

8 Q So as far as know, that was just a
9 routine spot check?

10 A That's my understanding.

11 Q It was not in response to a complaint
12 or some sort of allegation of misconduct or anything
13 like that?

14 A No. They do that to -- I mean, they
15 pick 10 percent of all hygienists. And it's
16 supposed to be random.

17 Q Okay. Number 3 to the exhibit to the
18 deposition notice requested that you produce at the
19 deposition copies of any publications, books,
20 articles, et cetera, authored by the deponent. Are
21 there such documents, and if so, have you brought

1 them with you?

2 A I have the list of documents that I
3 have authored or prepared, but I just have them
4 listed on my resume. I did not bring them.

5 Q All right. And to the extent that I
6 cannot locate any of the things on your resume, do
7 you have an objection to producing copies that are
8 in your possession?

9 A I do not have an objection to producing
10 anything that I have.

11 Q Okay. Now, what materials were you
12 provided in connection with the Shifflett case?
13 And, sir, let me strike that question and start
14 over.

15 Do you have a copy of your report in
16 the Shifflett case?

17 A Yes.

18 MR. RUCKDESCHEL: Let's mark that as
19 Number 4. And while we are doing that, mark the
20 Rehrig report as Number 5.

21 (Whereupon, Rabinovitz Deposition

1 Exhibit Numbers 4 and 5 were marked for
2 identification.)

3 THE WITNESS: Okay.

4 BY MR. RUCKDESCHEL:

5 Q Are the materials that you were
6 provided in the Shifflett case reflected in your
7 report?

8 A Yes.

9 Q Did you receive any materials in the
10 Shifflett case that are not reflected on the report?

11 A No, I don't think so.

12 Q And did you receive all of the
13 materials that are listed on the report?

14 A The medical records and reports were
15 provided in an E-mail address where I was given a
16 sign-in and a code to put in, which when I did, I
17 could see the information, which I looked at, but
18 that was all I did.

19 Q So you reviewed them online but did not
20 download them?

21 A That's correct.

1 Q All right. Did you review all of the
2 materials listed in your report in the Shifflett
3 case?

4 A I would say I went over them, yes.

5 Q Did you personally read Mr. Shifflett's
6 deposition?

7 A Yes.

8 Q Are there any employees that work with
9 you in your consulting work?

10 A There are.

11 Q That was a very good, concise answer.
12 How many and what do they do?

13 A That's kind of a moving target. I left
14 Sandler Occupational Medicine in June, but because I
15 had signed a non-compete, he required me to continue
16 working through SOMA up until the end of November
17 when we -- I believe we worked out an agreement
18 where I will be on my own and no longer using any
19 personnel at Sandler to assist me.

20 However, Ford was -- I had done some
21 work for Ford prior to starting work with Sandler,

1 and so I was able to work for Ford on my own as soon
2 as I left Sandler.

3 Q Ford was exempted from the non-compete
4 agreement because you had a preexisting relationship
5 with them?

6 A Correct.

7 Q I got it.

8 A And so Ford, I was just doing the work
9 myself. Now, I will not be using SOMA personnel to
10 help me, but I have some other people, and most of
11 them are former Sandler Occupational Medicine former
12 employees who will be working with me.

13 Q Understood.

14 Currently, are you working out of your
15 home?

16 A I am.

17 Q When were you first contacted regarding
18 the Shifflett case?

19 A I believe it was about a couple of
20 months ago. I don't remember the exact date.

21 Q Did you get a transmittal letter or an

1 E-mail or something from Ford or its lawyers asking
2 you to get involved?

3 A I got either a phonecall or an E-mail.

4 Q Have you looked to see which one it
5 was?

6 A I mean, I have gotten a couple of
7 E-mails. I just don't remember now if they also
8 called me.

9 Q Did you bring the E-mails with you?

10 A No, I didn't.

11 Q Was there any substantive information
12 regarding the case contained in any of the E-mails?

13 A No. The E-mails just asked if I would
14 work on these cases. I said I would. And then
15 materials were provided via the E-mail. The access
16 code for the medical was provided via an E-mail. In
17 fact, I believe all information was provided by
18 E-mails, including E-mails asking when I was
19 available for a deposition and then also E-mails
20 confirming today's deposition.

21 Q E-mails were made out to Mr. Johnson at

1 Whiteford, Taylor & Preston in Baltimore. Was it
2 Whiteford, Taylor that was contacting you in these
3 E-mails or somebody else?

4 A The initial contact came from the
5 Wilson, Elser law firm. The materials came from the
6 Whiteford, Taylor & Preston law firm.

7 Q What was your assignment?

8 A My assignment was to review the
9 materials and come to some conclusions regarding, if
10 I could, the plaintiffs' exposures to asbestos. In
11 particular, look at the plaintiffs' exposures to
12 asbestos from any handling of products supplied by
13 Ford Motor Company and to prepare a report for each
14 plaintiff of my findings and opinions.

15 Q Do you keep copies of your reports from
16 prior cases?

17 A I have copies in the computer.

18 Q And do you keep a file of each report?

19 In other words, have you got a file on
20 your computer that says something like, you know,
21 old reports or something where you throw a copy in

1 of each report?

2 A No. What I do is I have a file of each
3 case which contains the materials that might have
4 been sent to me in that case. And included in that
5 file would -- if a report was requested, that's
6 where I would put it.

7 Q Now, does the file that you currently
8 have on your computer include reports that you were
9 involved with when you were with Sandler?

10 A Well, it certainly has the reports from
11 June on. It does not have the reports earlier than
12 June.

13 Q How much time have you spent on the
14 Shifflett case to date?

15 A I would say I probably spent about a
16 day and a half, in that neighborhood, you know,
17 assuming eight hours to a day.

18 Q Have you produced a bill at this point
19 regarding Shifflett?

20 A Not yet.

21 Q Are you paid by the hour for your

1 consulting work for Ford?

2 A Yes.

3 Q At what rate?

4 A \$250 an hour. They get a special rate.

5 Q What is your rate for non-Ford

6 customers?

7 A Are you asking the rate that Sandler

8 charged for me or the rate that I will be charging

9 now that I am on my own?

10 Q Both.

11 A Sandler while I was there had been

12 charging \$310 an hour for preparation and 425 for

13 testimony. I am not privy to seeing the bills they

14 have generated since June 30th, so I can't be

15 certain what they are charging. I will be charging

16 \$280 an hour for preparation and 325 for testimony

17 going forward.

18 Q All right. Since you left Sandler

19 in -- was it June?

20 A End of June.

21 Q -- end of June, approximately what are

1 your total billings to Ford?

2 A I don't know the number. I would
3 estimate it might be -- I might have sent out bills
4 somewhere around 20, maybe 25,000. I am not sure.

5 Q Total?

6 A Total.

7 Q And approximately how many cases have
8 you worked on for Ford since leaving Sandler?

9 A Again, I don't know the number. I
10 think it might have been about eight or ten.

11 Q Were there any drafts of your report
12 dated November 9, 2009 in the Shifflett case?

13 A There were drafts, but they change in
14 the computer as I finish the report.

15 Q Were any of those drafts shared with
16 counsel for Ford or any representatives of Ford?

17 A I may have sent a draft. I don't
18 really remember. I do recall that they either
19 didn't ask for any change or there were what I would
20 call grammatical suggested changes.

21 Q To whom was the draft, sir?

1 A I believe I probably -- I may have sent
2 it to -- well, I sent it I think to Mr. Johnson.

3 Q Have you spoken to counsel for Ford
4 about the Shifflett case since, say, November 9?

5 A Yes.

6 Q Who and when?

7 A Since November 9th, I talked to
8 Mr. Krause.

9 Q Okay. When and how many times?

10 A I talked to him once just to say hello
11 and set a time to talk about the case, and then I
12 talked to him a second time about the case, and that
13 was last week.

14 Q How long did that take?

15 A I think that that entire conversation
16 took -- discussing the Shifflett and Rehrig case
17 probably took about a half hour.

18 Q On the telephone?

19 A Yes.

20 Q Do you have any materials that you
21 anticipate using at trial in this case in connection

1 with your testimony, be they physical demonstrative
2 aids, PowerPoint presentations, posters? Do you
3 have anything that you expect to use at trial?

4 A At the moment, I don't have anything.
5 I don't know if they are going to ask me to prepare
6 anything or not.

7 Q Have you used, for example, PowerPoint
8 presentations to help illustrate your testimony in
9 the past?

10 A I don't think I have used a PowerPoint
11 presentation. No, I take that back. I have in a
12 trial, but I don't think it was in an asbestos
13 trial.

14 Q When is the last time you gave
15 testimony in an asbestos trial relating to exposure
16 or claimed exposure to asbestos from brakes?

17 A I can tell you the case that pops into
18 my mind as the latest.

19 Q Please do.

20 A And that was a Baltimore case a few
21 years ago.

1 Q Since testifying in Baltimore a couple
2 years ago in a case alleging exposures to brakes,
3 have you testified in trial in any case involving
4 asbestos in brakes?

5 A Well, that's what I was talking about
6 in this Baltimore case.

7 Q Okay. Was that two years ago, five
8 years ago?

9 A I believe it was a couple of years ago.
10 I can't be exact.

11 Q Okay. Is it on your testimony list?

12 A Hopefully.

13 Q So if I find the one from a couple
14 years ago in Baltimore that's a trial testimony, I
15 probably have it?

16 A That's right.

17 Q I got you.

18 In that case, did you use any exhibits
19 or demonstrative aids in connection with your
20 testimony?

21 A I do not recall using any demonstrative

1 exhibits or PowerPoint.

2 Q Did you bring in a brake drum and some
3 brake shoes or anything like that?

4 A No.

5 Q Have you ever had a meeting with the
6 lawyers for Ford or any of your other
7 asbestos-related clients where they recorded you
8 giving questions and answers in preparation for
9 testimony in deposition or trial?

10 A I do not recall them ever recording our
11 discussions.

12 Q That would apply to video recording of
13 any format and audio recording as well?

14 A That would be correct.

15 Q Okay. Now, have you had such
16 preparation sessions with the lawyers for Ford or
17 any of your other asbestos-related clients?

18 A Now, you are specifically asking me
19 have they ever, like, asked me questions that they
20 thought may be -- I might be asked in trial?

21 Q Sure, yeah. You were sitting down with

1 some lawyers and they asked you questions as if they
2 are the plaintiff's lawyer.

3 A Yes.

4 Q When was the last time?

5 A You know, I can't remember a specific
6 time, but I know that has happened.

7 Q Tell me what you and Mr. Krause
8 discussed about the Shifflett and Rehrig cases when
9 you spoke about them in the last month.

10 A Basically what we talked about was what
11 their careers were and then their work with vehicles
12 and then specifically how they replaced brakes and
13 clutches and gaskets and then also how many of those
14 may have been on products supplied by Ford, what the
15 resulting dose may have been and whether it could
16 have contributed to any asbestos-related disease.

17 And then I discussed with him my
18 understanding of the studies talking about the
19 exposures to asbestos, specifically that the
20 exposures are extremely low and why it is that they
21 are low.

1 I also went over with him my personal
2 experience from having changed hundreds of brakes
3 myself, most of them on Ford vehicles. And
4 basically, that was what we talked about.

5 Q Had you ever spoken to Mr. Krause
6 before?

7 A Yes.

8 Q In your half-hour conversation related
9 to these two cases, did you really go back over your
10 understanding of what the studies say?

11 A Just very briefly.

12 Q Maybe to the extent that you said they
13 hadn't changed?

14 A Well, I talked about, you know, the
15 very low numbers and -- I mean, I don't think I
16 would have said that they have changed because the
17 numbers are what the numbers are.

18 Q All right. I mean, you didn't have to
19 tell Mr. Krause what your understanding of the
20 studies was, did you? He has known that for a long
21 time, hasn't he?

1 A Well, it was more to make sure he knew

2 I knew what they were.

3 Q I got you.

4 Now, you were never a professional

5 vehicle mechanic; am I correct?

6 A Not professional. I have just been

7 working on cars for about 50 years.

8 Q I understand.

9 And you saw Mr. Shifflett's testimony

10 that -- and vehicle list -- that he had had a lot of

11 cars and done, I think his testimony was, at least a

12 hundred brake jobs?

13 A I saw the number of a hundred, yes.

14 Q You don't find anything unusual about

15 that, given your personal experience, do you?

16 A No.

17 Q All right. And with respect to whether

18 exposure to asbestos from brake repair work could

19 cause or contribute to disease, is it fair to say

20 that your opinions in that regard have not changed

21 in the last decade?

1 A I would say that is true, however,
2 there has been additional studies that provide more
3 understanding which only strengthens my opinions, I
4 believe.

5 Q So, for example, you cited Reference 9
6 and 10 in your report, the Blake and Weir, W-E-I-R,
7 articles which were published in 2003 and 2001,
8 correct?

9 A Yes.

10 Q And those came out in the last decade?

11 A That's correct.

12 Q Those reports, however, did not change
13 your opinions with respect to the potential
14 exposures for the brake work; is that fair to say?

15 A I think that's fair. It would be
16 better to say they complimented.

17 Q All right. So, for example, if I were
18 to review a deposition of yours from 1998 in which
19 you testified that it wouldn't matter if you did
20 brake repairs every day for 30 years, you are not
21 going to get sick from it, that's an opinion you

1 still hold?

2 A You know, assuming they do brakes in a
3 normally foreseeable manner, yes, I think even if
4 you did them on a daily basis, you wouldn't be
5 exposed to a dose of asbestos that could increase
6 your risk of getting an asbestos-related disease.

7 Q What dose of asbestos is the lowest
8 dose that would increase the risk of an individual
9 contracting an asbestos-related disease?

10 A Well, the first thing is it's dependent
11 on fiber type. And everything I have seen is that
12 the brakes in this country use chrysotile when they
13 used asbestos in brakes. And my understanding is
14 that one must be exposed to levels equal to or
15 exceeding 20 or 25 fiber years before one would see
16 an increased risk of getting an asbestos-related
17 disease.

18 Q 20 to 25 fiber years. Is that any
19 particular length of fiber you are talking about
20 there?

21 A Yes, it would be anything greater than

1 five microns which is what I have always said in the
2 past. I believe some of the recent work by Berman
3 and Crump suggests it may even require a fiber
4 longer than five microns to increase the risk of
5 getting disease.

6 Q What work are you talking about,
7 Doctor?

8 A Berman and Crump have done some risk
9 assessments where they attempted to do meta-analysis
10 on a number of cohort epidemiology studies. And
11 they attempted to go a little further in defining
12 fiber type and fiber morphology.

13 They have a recent paper I think in
14 2008 where they talk about the results of their
15 latest work in attempting to describe the risks
16 associated with exposure to asbestos by fiber
17 morphology. And I believe they have that conclusion
18 in there. I believe they also had that conclusion
19 in their assessment that they provided to the
20 Environmental Protection Agency in around 2003.

21 Q Okay. I appreciate your explanation

1 there, sir.

2 The assessment that was provided to the
3 EPA was never adopted by the EPA, correct?

4 A My understanding is it was accepted to
5 the point of being distributed, but it was never --
6 I believe it was taken off the EPA site and was
7 never finalized.

8 Q And, in fact, it underwent a peer
9 review; is that correct?

10 A I am assuming it underwent peer review.

11 Q Do you know whether the peer review
12 noted that there were many problems with the
13 incomplete nature of the data?

14 A I did not go through the peer review
15 process, so I don't know.

16 Q With respect to the 2008 publication by
17 Berman and Crump, they were essentially looking at
18 the same data that they looked at in 2003; is that
19 correct?

20 A I believe there was -- I am not sure
21 how much additional work they did. I do know that

1 they went a little further than some other studies
2 in attempting to identify the morphology of
3 exposure.

4 Q And what information did Berman and
5 Crump have regarding the morphology of the fibers
6 that were measured or that were present in the
7 historical settings that were studied in the studies
8 that they meta-analyzed?

9 A Well, I believe that in some cases,
10 there were actually some filters that were analyzed
11 by TEM that had originally been analyzed by PCM, and
12 that they also looked at some other studies where
13 they attempted to utilize TEM data to better detail
14 what types of exposures might have occurred in some
15 of the studies, some of the epi studies where PCM
16 data or even possibly some dust counting data was
17 used.

18 Q A lot of the historic epidemiology
19 studies that provide the mortality data had samples
20 that have been selected by midget impinger, correct?

21 A If they were midget impinger, then yes,

1 it would be a dust sample. I do believe there is a
2 fair amount of information by PCM, but I believe
3 some of the data was impinger data.

4 Q And one of the things that Berman and
5 Crump did in 2008 was take dust samples that had
6 been analyzed by electron microscopy from various
7 job sites and to assume that the sampling they saw
8 by transmission electron microscopy at those job
9 sites were comparable to the historic distributions
10 that may have been in place at the sites where the
11 epidemiological information came from, correct?

12 A There were assumptions made in
13 attempting to use some TEM data and attempt to
14 assign fiber types and morphology to past studies.

15 Q And are you familiar with Dr. Dement's
16 recent reanalysis of historic samples by electron
17 microscopy?

18 A I have seen his report. It's a little
19 while since I read it, but I did review it.

20 Q And in that report, Dr. Dement and his
21 colleagues looked at dust samples from a particular

1 factory and then used that information to examine
2 outcomes at that particular factory, correct?

3 A Again, it's been a little while since I
4 have looked at it, so I really would have to look at
5 it again before I can comment on what they did.

6 Q Fair enough.
7 Did you look at any of Mr. Shifflett's
8 deposition on DVD?

9 A Yes. Well, I mean, through the
10 computer.

11 Q And you also saw a picture of
12 Mr. Shifflett as opposed to reading the transcript?

13 A Yes. I remember seeing some pictures
14 of him as a younger man.

15 Q Okay. And did you view any of his
16 actual testimony in the format that it was recorded,
17 in other words, watching him on the television
18 screen as opposed to reading it?

19 A No, I only read.

20 Q Other than the E-mails that you have
21 referenced, the one from Wilson, Elser and

1 subsequent E-mails from -- to and from Whiteford,
2 Taylor & Preston, are there any other written
3 communications between you and Ford or its lawyers
4 in connection with the Shifflett case?

5 A No, I don't think so.

6 Q Are there any in connection with the
7 Rehrig case other than that type of communication?

8 A No.

9 Q How many proceedings are reflected on
10 the testimony list that we marked as Exhibit 1?

11 A How many entries?

12 Q How many depositions and trials total.

13 A I have never totaled them.

14 Q How many pages is the list?

15 A The list is 16 pages long.

16 Q Have you ever in that time period from
17 the time period the list begins through today
18 provided testimony at the request of an individual
19 suffering from an asbestos-related disease?

20 A No.

21 Q And when is the first time that you

1 provided expert witness testimony in any

2 proceedings?

3 A It would have been I think around the

4 mid '70s.

5 Q Tell me what types of things you did.

6 A It was while I was an employee of Ford

7 Motor Company, and it was a carbon monoxide claim.

8 Q Somebody had gotten sick from carbon

9 monoxide they claim came from their Ford vehicle?

10 A I think they died.

11 Q That's pretty sick.

12 And you were an employee of Ford and

13 testified on Ford's behalf?

14 A Yes.

15 Q Was that a deposition or a trial, or

16 both?

17 A I believe I have done both. I know I

18 have provided trial testimony.

19 Q I apologize, sir, I don't have your CV

20 in front of me. Can you just give me the years that

21 you worked for Ford?

1 A '73 through '78.

2 Q And when you left Ford, where did you
3 go?

4 A I went to -- it was called JRB
5 Associates which was a subsidiary of SAIC, Science
6 Applications, Incorporated.

7 Q Right.

8 Was it Incorporated or International?

9 A International. I think it's
10 International.

11 Q Okay. I got you. I am familiar with
12 that.

13 Why did you leave Ford?

14 A Because SAIC offered me a lot more
15 money.

16 Q It sounds like a pretty good reason.

17 When is the first time you provided any
18 expert witness services, whether it resulted in
19 testimony or just consulting, regarding asbestos?

20 A I believe that would have been in
21 around 1984, 1985.

1 Q While you were working for NIOSH?

2 A Yes.

3 Q And who was requesting you provide

4 expert witness services?

5 A General Electric.

6 Q Was that a crane brake case?

7 A It was.

8 Q GE or its lawyers hired you?

9 A Yes.

10 Q What was the alleged condition?

11 A When you say condition --

12 Q Medical condition.

13 A You know, I don't recall with

14 certainty, but it might have been mesothelioma.

15 Q All right. Now, did you have to go

16 through any procedures with NIOSH to get approval

17 for working as an expert witness with General

18 Electric on an issue relating to occupational

19 health?

20 A Yes.

21 Q What type of things did you have to do?

1 A You had to get approval for an outside
2 consulting activity.

3 Q Can you describe for me the process, in
4 general terms, that you were required to follow to
5 get that approval?

6 A You would fill out a form and submit
7 it, and then the Agency would either approve it or
8 not approve it.

9 Q And I assume they approved it?

10 A Yes.

11 Q You did the work, so --

12 In doing that work or in seeking that
13 approval, were you required to inform NIOSH the
14 substance of what your anticipated testimony would
15 be?

16 A Well, I certainly wouldn't be telling
17 them what the substance of my testimony was because
18 at that time, I wouldn't have known what it was.

19 Q I understand.

20 Were you required after you formed your
21 opinions in that case -- let me start over.

1 Am I correct that the approval was
2 sought before you had formed opinions in the case?

3 A The approval was sought before I
4 started working on the activity.

5 Q Right.

6 And before you started working on the
7 activity, you did not have opinions already formed;
8 am I correct?

9 A Correct.

10 Q And were you required after you formed
11 opinions to tell NIOSH the substance of those
12 opinions and seek any additional approval?

13 A No.

14 Q So in '84, '85, there is the case that
15 you get hired by GE for regarding crane brakes. And
16 is the friction material that was used in overhead
17 cranes the same type of material in terms of
18 composition as that used in automobile brakes?

19 A My understanding is that is correct.

20 And, in fact, I have had overhead crane brakes
21 analyzed, and those that contained asbestos, it was

1 chrysotile.

2 Q And the binders and other materials
3 that make up the non-asbestos portion of the
4 friction material is essentially similar to those in
5 car brakes?

6 A I did not have a complete analysis. My
7 assumption is that, you know, while there may be
8 some variations in the binder, it essentially serves
9 the same function and would behave similarly in
10 terms of binding the asbestos.

11 Q What other crane brake companies or
12 companies that provided materials for crane brakes
13 have you provided testimony for?

14 A I believe I have provided testimony for
15 Eaton/Cutler-Hammer, and there probably were some
16 others, but I don't know the names of them at this
17 time.

18 Q How about Bucyrus?

19 A That name does not sound familiar to
20 me.

21 Q Erie? I think I saw a reference to

1 Erie in one of the old depositions I was looking at.

2 A I have never done, that I remember,
3 work for Erie. Now, you are talking about crane
4 manufacturers?

5 Q Yes, sir.

6 A Pardon?

7 Q Yes, sir.

8 A I have done work with Reading Crane,
9 Harnischfeger cranes.

10 Q Okay. After the first GE case, what
11 was the next type of asbestos material that you
12 provided expert witness services for?

13 A You know, I don't know what that would
14 be because I wasn't keeping a good record at that
15 time. The next one that comes to mind would have
16 been in the late 1980s where I did -- I know I think
17 I started doing some work with Bendix at that time.

18 Q And at the time, was the company that
19 was hiring you to talk about Bendix brakes
20 technically called Allied Signal?

21 A You know, I don't know exactly when

1 Allied Signal purchased Bendix brakes, so I can't
2 tell you for sure, but at some point, I was doing
3 work for Allied Signal who did own Bendix.

4 Q And that was in the late '80s?

5 A Again, I don't remember when Allied
6 Signal purchased Bendix brakes.

7 Q I am sorry. I asked a poor question,
8 and it led to an ambiguous answer.

9 I was trying to say when --
10 approximately when was the first time you started
11 performing consulting work relating to Bendix
12 brakes?

13 A And, again, I think it was the late
14 1980s.

15 Q Do you believe it was during the time
16 that you were an employee of the Environmental
17 Protection Agency?

18 A That's possible, yes.

19 Q And you worked as a direct employee of
20 the EPA through February of '89 or so?

21 A As a full-time employee, yes.

1 Q Right.

2 And then as a part-time employee or
3 maybe a contractor, that continued until '92?

4 A Correct.

5 Q Do you recall whether before you got
6 involved in providing consulting services for Bendix
7 relating to brakes, you had to seek approval of that
8 consulting work from the EPA?

9 A The EPA was a little different than
10 NIOSH. I obtained official permission to do outside
11 activities not for each case, like NIOSH required,
12 but just to do it in general.

13 Q In obtaining that permission, describe
14 the process to me.

15 A My recollection is I wrote a letter to
16 my supervisor, and he submitted it to someone else,
17 where I talked about the types of things I
18 anticipated doing. And I received permission to do
19 it.

20 Q Who was your supervisor?

21 A My direct supervisor at EPA was a man

1 by the name of David Weitzman.

2 Q When is the last time saw Mr. Weitzman?

3 A I believe it might have been around a
4 year ago.

5 Q He is still alive, to the best of your
6 knowledge?

7 A Yes. He is younger than me.

8 Q Does he still work at EPA, to the best
9 of your knowledge?

10 A No, he does not work at EPA at this
11 time.

12 Q Where is the most recent place that you
13 are aware of him working?

14 A He works at the Department of Energy.

15 Q And do you know what he does at DOE?

16 A He is an industrial hygienist.

17 Q In the letter where you described the
18 types of activities you would be doing, can you tell
19 me whether any substantive information was included
20 regarding what your opinions might be?

21 A You know, I don't remember what was in

1 that letter at this time, but I am fairly confident
2 it talked about what I would do, not what my
3 opinions were.

4 Q Understood.

5 When you wrote that letter at EPA, was
6 it in connection with wanting to begin doing work
7 for Bendix or were there other consulting, outside
8 consulting things that you were involved in at the
9 time at the genesis of the letter?

10 A I did various things. And I don't
11 believe the letter talked about anything specific.
12 That's my recollection.

13 Q Okay. With respect to companies
14 involved in litigation concerning allegations of
15 exposure to asbestos from brakes, in addition to
16 Bendix and any corporate successors to Bendix, can
17 you tell me what companies you provided consulting
18 expert witness services to?

19 A So you are asking me for a list of
20 companies that made or supplied brakes that were
21 involved in litigation and asked me to evaluate

1 potential exposures?

2 Q Yeah, that's a good way to put it.

3 A Let's see. We have already mentioned
4 General Electric, Eaton/Cutler-Hammer, Abex,
5 Westinghouse, Griffin Wheel Company.

6 Q Ford?

7 A Ford, General Motors, Chrysler. I
8 believe I was retained by Honda once.

9 Q What about Toyota or Nissan?

10 A That I don't think so.

11 Q Borg-Warner?

12 A Oh, yes, Borg -- well, they are not
13 brakes.

14 Q Did Borg retain you for clutches?

15 A Yes.

16 Q All right. What about
17 Maremont/Grizzly?

18 A I believe I had a muffler case for
19 Maremont, but I don't know if I had a brake case.

20 Q All right. Firestone?

21 A No.

1 Q Wagner?

2 A I don't think so.

3 Q Any others that come to mind? How
4 about Caterpillar?

5 A Oh, I don't think so, but Mack Truck.

6 Q Mack.

7 All right. International Harvester?

8 A No.

9 Q Any truck or trailer manufacturers
10 other than Mack?

11 A Oh, Rockwell International.

12 Q As we sit here today, is that as
13 complete a list as we can get at this point of the
14 companies that you have provided consulting services
15 to relating to brakes?

16 A That's what I remember, what is coming
17 to mind at this time.

18 Q Any other companies relating to
19 clutches than Borg-Warner?

20 A No, I can't think of any other company
21 other than Borg-Warner. And also, I know I have

1 done some work with a couple of brake relining

2 smaller companies, but I don't know the names.

3 Q Let me ask you about a couple of other

4 companies.

5 Western Auto?

6 A No, I don't recall that.

7 Q Sears?

8 A Sears?

9 Q Yeah.

10 A I think I did a tile case from them,

11 but I don't think brakes.

12 Q Vinyl asbestos tile?

13 A Yes.

14 Q What about Genuine Parts, NAPA?

15 A You know, I can't say with 100 percent

16 certainty I never did, but it's not ringing a bell.

17 Q J.C. Penney?

18 A No.

19 Q What about gaskets? Have you provided

20 consulting services to companies relating to

21 asbestos in gaskets?

1 A Yes.

2 Q Which companies?

3 A Now, these are not companies that made
4 the gaskets, they are companies that used gaskets?

5 Q I would like to do both.

6 A Well, the companies that made gaskets,
7 I have done some work with Crane in the past, but I
8 haven't done anything for them for quite a while.

9 Q Okay. Now, just so the lawyer for
10 Crane Company on the phone doesn't have a heart
11 attack, are you talking about John Crane Company or
12 Crane Company?

13 A Actually, I would be talking about
14 both.

15 Q Okay.

16 A But the one that I talked about having
17 not done anything in a long time would be John
18 Crane.

19 Q All right. What about Garlock?

20 A I don't think I have ever done anything
21 for Garlock.

1 Q A.W. Chesterton?

2 A I don't remember, but I am not as sure.

3 Q Goodyear?

4 A I think I may have done something with

5 Goodyear. I just -- I think so. I am not sure.

6 Q Durabla?

7 A No.

8 Q Flexitallic?

9 A No.

10 Q Are there any other gasket-related

11 companies?

12 A Yes. It's not coming to me. Velumoid.

13 Q Right.

14 A And I believe there is one more company

15 that made head gaskets that the name isn't coming to

16 me.

17 Q It's not Mr. Gasket, is it?

18 A No. It's not coming to me.

19 Q All right. I will just put down head

20 gasket company.

21 What about valve packing?

1 A I have done work for companies that
2 made valves that used packing.

3 Q Okay. What companies, sir?

4 A Crane, Leslie Control. I can't think
5 of the name of it. But a company that made steam
6 traps and valves. Yarway.

7 Q Right.

8 A There may be a few more that just
9 aren't coming to mind.

10 Q Understood.

11 We have covered brakes, clutches,
12 mufflers, gaskets and valve packing. Are there any
13 other types of asbestos products or
14 asbestos-containing products which you have provided
15 expert witness consulting services?

16 A Well, pumps and electrical equipment.

17 Q Pumps.

18 What about joint compound?

19 A Yes.

20 Q Let's start with pumps. What companies
21 for pumps?

1 A ITT, Goulds.

2 Q Warren?

3 A I think I have done Warren.

4 Q Worthington?

5 A I don't think so. Those are the ones I
6 remember.

7 Q Ingersoll-Rand?

8 A I don't think so. I can't be sure, but
9 I don't think so. Oh, Gardner Denver.

10 Q All right. Let's go to electrical
11 equipment. What types of electrical equipment and
12 what companies?

13 A Turbines, motors, electrical control
14 equipment. Eaton/Cutler-Hammer, General Electric,
15 Square D, Allen-Bradley. Those are the ones I
16 remember.

17 Q Westinghouse?

18 A Yeah, Westinghouse.

19 Q Allis Chalmers?

20 A No.

21 Q Now it's happening to me. There is one

1 that's escaping me. Well, it will come to me.

2 What types of electrical controls are
3 you talking about when you say electrical controls?

4 A They are generally equipment and panels
5 that are controlling the distribution of
6 electricity.

7 Q What are the allegations of exposure
8 that relate to those types of materials?

9 A Generally, it will be arc chutes and
10 hard electrical insulating panel boards.

11 Q Have you performed any consulting
12 services for the manufacturers or sellers of
13 asbestos-containing phenolic resins used in
14 electrical equipment?

15 A I have not done any testing on behalf
16 of the manufacturers of Bakelite-type materials.

17 Q And we have got Bakelite with a capital
18 B? That's Union Carbide, right?

19 A Yes, that's my understanding.

20 Q And you have not done work for them
21 relating to their product?

1 A That is correct.

2 Q Have you tested Union Carbide Bakelite?

3 A I have tested Bakelite-type materials.

4 I don't necessarily know who supplied it.

5 Q Understood.

6 Have you done any work for Durez or

7 Plenco?

8 A Could you repeat that?

9 Q Durez?

10 A No.

11 Q Plenco Plastics Engineering?

12 A No, that doesn't sound familiar.

13 Q Now, with regard to the testing that

14 you performed on phenolic resin material in

15 electrical applications, have you found that they

16 release asbestos dust during their manipulation?

17 A I have found that they either don't

18 release or release levels that are extremely low.

19 Q What type of manipulation was being

20 performed in the testing that you are aware of?

21 A And in this, I am also including

1 testing of arc chutes, some of which are phenolic,
2 and others are ceramic based. And the types of
3 operations are normal operation, breaking the parts
4 into pieces, sweeping and cleaning and inspecting.

5 Q Okay. Are you aware of testing of the
6 drilling of those materials?

7 A I am aware of testing of drilling. I
8 have not done it.

9 Q Have you performed any testing of
10 sawing the materials with a reciprocating saw, a
11 power jigsaw?

12 A I am aware of sawing studies. I have
13 not done it.

14 Q Are you aware of any studies cutting
15 the material with a circular saw?

16 A You know, I am aware of a study where
17 these materials were abraded with various tools. I
18 don't remember exactly which tools were used.

19 Q Okay. Talking about joint compound,
20 what consulting work have you provided regarding
21 joint compound and asbestos?

1 A I have been asked to look at testimony
2 regarding the use of joint compound and try to
3 evaluate the exposures associated with that use.

4 Q What companies have you performed such
5 work for?

6 A UGL, Bondex and Kaiser-Gypsum, and I
7 think I may have done some work for Georgia-Pacific
8 and U.S. Gypsum.

9 Q What about National Gypsum?

10 A That doesn't sound familiar.

11 Q All right. So we have got brakes,
12 clutches, mufflers, gaskets, valves, pumps,
13 electrical equipment and joint compound. Are there
14 any other products that contain asbestos that you
15 have performed expert witness consulting in
16 connection with?

17 A Steam traps and -- I just had it. Wait
18 a second. Steam traps and one other. It just went
19 out of my head.

20 Q Any steam trap manufacturers other than
21 Yarway?

1 A Armstrong.

2 Q Have you ever done any work for any
3 manufacturers of boilers?

4 A Yes.

5 Q Who?

6 A Burnham, American Standard, Kewanee,
7 Cleaver-Brooks.

8 Q Did you do any boiler work for Crane?

9 A I am not aware of Crane making any
10 boilers.

11 Q What about National U.S. Radiator or
12 Federated?

13 MS. HAUSSLER: Objection to form.

14 A No.

15 Q Foster Wheeler?

16 A No.

17 Q Babcock & Wilcox?

18 A No.

19 Q Combustion Engineering?

20 A No.

21 Q Going back to turbines, did you ever do

1 any work for Seamans, Demag, Delaval?

2 A No.

3 Q Did you do any work regarding ceiling
4 tiles or floor tiles?

5 A Yes.

6 Q I think you mentioned you might have
7 done a floor tile case for Sears. Any other floor
8 tile?

9 A Kentile, Congoleum, Goodyear. In fact,
10 Goodyear might be the only -- I think I talked about
11 Goodyear for brakes. It might have been tile.

12 Q Right.

13 A Those are the ones I can think of.

14 Q Ever do any work for Cycloid?

15 A It doesn't sound familiar.

16 Q What about ceiling tiles?

17 A I believe I did some work for ceiling
18 tiles for U.S. Gypsum.

19 Oh, I remember. Furnace cement.

20 Q Oh, yes.

21 Whose furnace cement?

1 A Hercules.

2 Q Any sprayed insulation or texturing
3 product manufacturers, W.R. Grace or --

4 A Yes. I am -- it's a spray insulation
5 on beams, fireproofing. I can't think of the name
6 right now. It's a product that came from England.

7 Q Limpet?

8 A Limpet, that's it.

9 Q Armstrong Contracting and Supply?

10 A I believe they then supplied it from
11 Canada, but that wasn't the client. The client that
12 I worked for or was retained by to provide opinions
13 was a contractor that purchased Limpet and then
14 applied it.

15 Q Right.

16 Any other fireproofing spray companies?

17 U.S. Mineral?

18 A I also have done work for Armstrong
19 World Industries, primarily -- a little bit for
20 their tile but primarily when they had their
21 contract division for insulation installation.

1 Q Right.

2 In connection with any of your work
3 regarding any of these types of asbestos-containing
4 products, have you at any time provided testimony at
5 the request of an individual alleging an
6 asbestos-related injury?

7 A Not that I can recall.

8 Q Have you ever been asked to do so?

9 A That's possible.

10 Q Is it possible for you to approximate
11 for me, sir, your total earnings from expert witness
12 services from the time between 1984 or '85 when you
13 first worked with GE to the present date?

14 A No.

15 Q Are you currently, meaning since you
16 left Sandler, doing any consulting work that is not
17 related -- any professional work that is not related
18 to asbestos?

19 A Yes.

20 Q What other types of things are you
21 working on?

1 A I think I have a welding case, and
2 there might be a few other litigation cases not
3 involving asbestos.

4 Q What percentage of your current
5 activities is related to asbestos?

6 A The majority.

7 Q 80 percent, 90 percent?

8 A Probably at this time, it's 90 percent,
9 possibly even a little more.

10 Q Now, can you approximate for me, sir,
11 the total amount of billings for your work since
12 June of this year when you left Sandler?

13 A Let's see. I think it's about 140,
14 130,000.

15 Q And of that 140 or 130,000, can you
16 tell me what portion of that is related to brakes?

17 A No. That I can't tell you.

18 Q More than half?

19 A No, I just don't know. It may not be.

20 Q Okay. Going back -- we are moving on
21 to a new topic, sir.

1 A While back, you indicated that I
2 think your opinion is it takes between 20 and 25
3 fiber years of exposure to chrysotile asbestos to
4 cause or contribute to disease?

5 A To certain asbestos-related diseases,
6 yes.

7 Q Okay. What diseases?

8 A Specifically, asbestosis and lung
9 cancer.

10 Q What about mesothelioma?

11 A No. Mesothelioma -- based on what I
12 have reviewed, it is possible that chrysotile does
13 not increase the risk of causing mesothelioma. But
14 if it does have the -- if it is possible that
15 chrysotile asbestos can increase the risk of getting
16 mesothelioma, it would require a dose that is higher
17 than 20 to 25 fiber years.

18 Q Am I correct that this has not been --
19 this topic has not been the subject of original
20 research by you?

21 A Not original, no.

1 Q Okay. I would like you to tell me what
2 information it is that forms the basis of your
3 opinion that it takes more than 20 to 25 fiber years
4 of exposure to chrysotile asbestos to cause or
5 contribute to a mesothelioma.

6 A From literature that I have reviewed
7 over the past, primarily epidemiology studies and
8 summaries of epidemiology studies.

9 Q Do any of those studies or summaries of
10 those studies state specifically what you just said,
11 that it takes more than 20 to 25 fiber years to
12 cause or contribute to mesothelioma?

13 A I believe they do.

14 Q Okay. Can you tell me which ones so
15 that I can look them up?

16 A You know, I don't remember if that was
17 the exact wording, but I think even in some of
18 Berman and Crump's evaluation, Liddell's studies of
19 Quebec. I don't know if it has that exact wording,
20 but I think that there may be that type of
21 implication.

1 Q Liddell study. What year, approximate
2 year are you talking about?

3 A I think there is one in 1997 where he
4 is reviewing the cohorts in Quebec mining studies.

5 Q I have got a '97 Liddell article, the
6 1891 to 1920 birth cohort of Quebec chrysotile
7 miners. Is that what you are talking about?

8 A That may be the one.

9 Q Okay. Are you familiar with the recent
10 article by Pintos and others, including Bruce Case,
11 from October of this year that looked at the risk of
12 mesothelioma in Montreal?

13 A You know, I may have seen it. I don't
14 remember at this moment.

15 Q Any other articles that you believe
16 state that it takes at least 20 to 25 fiber years of
17 exposure to chrysotile to cause or contribute to
18 mesothelioma?

19 A Again, you know, I can't -- I don't
20 know if it's exactly that wording, but there is a
21 study by Yarborough, a study by Goodman. Some of

1 those may be more related to actually looking at
2 cohorts of people working on brakes. And so they
3 may have been zeroing in more on lower exposures to
4 chrysotile. And they are concluding that certainly
5 that work would not increase the risk of getting any
6 asbestos-related disease. I don't remember now if
7 Yarborough looked at higher exposures.

8 Q When you are talking about
9 Yarborough -- was I interrupting you, because --

10 A No, I am done.

11 Q When you are talking about Yarborough,
12 are you talking about his 2006 article, Chrysotile
13 as a Cause of Mesothelioma: An Assessment Based on
14 Epidemiology?

15 A I think that's right.

16 Q Mr. Yarborough works for a company
17 called Exponent?

18 A I don't remember for sure, but I think
19 that's correct.

20 Q What do you know about Exponent and its
21 connection to Ford, General Motors and Chrysler?

1 A I don't know. I believe they may have
2 done contract work for Ford, but that's all I would
3 know.

4 Q Now, you mentioned Goodman. Are you
5 referring to Goodman and other articles purporting
6 to be a meta-analysis of various studies that
7 relates to the allegations that asbestos in brakes
8 can cause mesothelioma and lung cancer?

9 A Yes.

10 Q Were you referring to any other paper
11 authored by Goodman?

12 A No. That's the one I think I was
13 referring to.

14 MR. RUCKDESCHEL: Folks, we have been
15 going for a bit here. Can we take a five-minute
16 comfort break?

17 THE WITNESS: Sure.

18 MR. KRAUSE: Sure.

19 (Whereupon, recess taken -- 3:28 p.m.)

20 (Whereupon, after recess -- 3:32 p.m.)

21 BY MR. RUCKDESCHEL:

1 Q Dr. Rabinovitz, at what temperature
2 does the process of water being driven off from
3 chrysotile tend to occur?

4 A It starts coming off actually at fairly
5 low temperatures, but the conversion becomes fairly
6 quick at around 7 to 800 degrees Centigrade.

7 Q Back in 1998 -- I reviewed a deposition
8 of yours from back in 1998 where you indicated --
9 let me just pull it up so I make sure I am getting
10 it right.

11 In the past, you have indicated that
12 water starts to get driven off from the asbestos
13 fiber somewhere around 500 degrees Centigrade. Is
14 that still your opinion?

15 A Well, again, water is starting to be
16 driven off at -- 700 to 800 is when it really comes
17 off fairly quickly. So it would still be my
18 testimony that at 500, some water is being driven
19 off, but not as quickly.

20 Q That's almost exactly what you said
21 back then. And just so the record is clear, let me

1 read your whole answer from back then. I think it
2 will make it easier.

3 Your answer is, "A Centigrade number
4 would be much lower than a Fahrenheit number, but in
5 terms of Centigrade, the water is starting to be
6 driven off the asbestos fiber starting at around --
7 somewhere around 500 degrees Centigrade. And by the
8 time the temperature reaches between 7 and 800
9 degrees Centigrade, the water is driven off rapidly
10 and the asbestos quickly is being transformed into
11 forsterite."

12 Is that still your opinion today?

13 A Yes.

14 Q Okay. Would you burn your hand if you
15 touched a brake that was 500 degrees Centigrade?

16 A Yes.

17 Q Does sanding or hand filing of a brake
18 generate heat anywhere in the range of 500 degrees
19 Centigrade?

20 A I would not think that normal sanding
21 would generate a temperature that high.

1 Q For example, an individual like
2 Mr. Shifflett sanding a brake by hand with
3 sandpaper, you would not expect to get anywhere
4 close to 500 degrees Centigrade, would you?

5 A You know, I have never made that
6 measurement, but just asking me, my gut opinion
7 would be that it wouldn't get that hot.

8 Q If the brake was getting up to 500
9 degrees Centigrade from hand sanding, Mr. Shifflett
10 would have been able to tell from the temperature
11 coming through the sandpaper, wouldn't he?

12 A You mean if he is not holding it in a
13 block?

14 Q Right.

15 A Yes.

16 Q And the same questions for filing with
17 a hand file. You wouldn't expect that to create
18 temperatures anywhere close to 500 degrees
19 Centigrade, would you?

20 A Again, while I have never made any
21 measurements, I would think the typical quick filing

1 that was described would not generate temperatures
2 that hot.

3 Q How long does it take an average person
4 like Mr. Shifflett to bevel the edge of a single
5 brake shoe with a hand file?

6 A Well, you know, that depends on how
7 much of an edge he wants to put on. I have never
8 beveled the edges of brake linings in all the years
9 I have been doing it. And I found if you put the
10 shoes on correctly, you don't have squealing. So I
11 would think that you wouldn't have to have much of
12 an edge and it would just be the very top of the
13 edge, so it could be done fairly quickly.

14 Q Would it be fair to say Mr. Shifflett
15 was not asked how long it took him?

16 A You know, I don't remember the specific
17 testimony for that.

18 Q I just looked up -- and I will
19 confess -- on Wikipedia how hot 500 degrees Celsius
20 was in Fahrenheit, and it showed me it's about 930
21 degrees Fahrenheit. Is that roughly what your

1 understanding is?

2 A Well, again, I would have to do the
3 calculation, but that sounds like it would be right.
4 But, again, I haven't done the calculation.

5 Q In about that order of magnitude,
6 though?

7 A You know, it sounds about right.

8 Q All right. That's good enough for this
9 hand grenade question.

10 Now, with respect to OSHA, under the
11 OSHA fiber counting rules, am I correct that only
12 fibers longer than five microns are counted?

13 A Yes.

14 Q When did that counting convention take
15 effect?

16 A Well, my understanding is it was
17 thought that fibers shorter than five microns in
18 length were not considered to be toxic even before
19 OSHA was created. But the phase contrast microscopy
20 analytical method really can't accurately count
21 fibers less than five microns in length due to

1 limitations in the method.

2 So it kind of turns out to be
3 advantageous to have a method that really can't
4 count fibers less than five microns in length to
5 have fibers less than five microns in length not to
6 be considered toxic.

7 Q I am going to have some questions for
8 you about various information in that answer, but my
9 question was different, and I don't think you
10 answered it. And that is when did the five micron
11 in length convention come into effect under OSHA?

12 A Well, I believe it was when they first
13 promulgated their standard in '72 which used the
14 phase contrast method as the method to determine
15 exposure.

16 Q Is there anything in the documentation
17 that adopted that counting convention under the OSHA
18 that states that the purpose for adopting that
19 counting convention is that fibers under five
20 microns do not cause harm?

21 A Now, I don't remember whether it

1 specifically says that, but the reality is that's a
2 limitation of the method.

3 Q All right. Now, thank you for that
4 answer. Let's go back to your answer a couple ago.
5 You indicated that -- and this is a paraphrase. So
6 I am not trying to recharacterize your statement.
7 Something about that before OSHA was enacted, there
8 was some belief that short fibers less than five
9 microns couldn't hurt you. What is the basis for
10 that?

11 A You know, I don't remember the specific
12 information where that came from. I believe Stanton
13 was doing some of his work at NIH around that time.
14 I don't remember the exact dates that work was
15 published.

16 Q Is it fair to say that as we sit here
17 today, sir, you cannot identify for me any study or
18 document that I can go and look at that predates
19 OSHA and states that fibers less than five microns
20 are biologically inert?

21 A You know, I can't give you a cite right

1 now. Stanton is one of the earlier ones that I'm
2 aware of. But I believe in all the reading I have
3 done, I have come across that conclusion earlier.
4 But as I am sitting here right now, I can't tell you
5 where it was.

6 Q Okay. When you began at Ford in
7 1973 --

8 A Yes.

9 Q -- did Ford have any rules or
10 regulations whether its mechanics were permitted to
11 use compressed air when cleaning out brake drums and
12 brake drum -- drum brake assemblies?

13 A I do not remember when Ford started
14 telling mechanics not to use compressed air.

15 Q Have you seen documentation in
16 connection with your consulting work of internal
17 Ford policies regarding exposure to asbestos during
18 brake repair?

19 A You know, I have bought Ford repair
20 manuals, and I know I have seen warning statements
21 about asbestos, but I don't remember the dates of

1 those repair manuals.

2 Q Did those manuals actually use the word
3 warning?

4 A You know, I don't remember the exact
5 warning, but it was certainly saying -- talking
6 about avoiding exposure to asbestos. Again, I just
7 don't remember the dates of those manuals.

8 Q Now, if Ford instituted policies
9 internally in the early 1970s that their mechanics
10 were not to use compressed air, is that something
11 you are just not familiar with?

12 A That is correct. I am not aware of
13 exactly when Ford starting telling -- warning about
14 using compressed air.

15 Q And you have never seen any memoranda
16 from Ford Motor Company from the 1970s that
17 discussed that product as you can recall today?

18 A I believe I saw something at a later
19 time talking about some memos suggesting that
20 compressed air not be used, but I don't remember
21 right now the dates of those memos.

1 Q All right. Have you ever seen an
2 instructional course called "General Brake Theory
3 and Operation" from 1994 produced by the Ford Motor
4 Company?

5 A I have seen a video talking about
6 replacing brakes from Ford. I don't know if that's
7 the same one you are referring to, but I have seen
8 one.

9 Q Was it a video, the premise of which
10 was a female police officer whose brakes failed, and
11 they were using that as the vehicle for telling the
12 instructional story?

13 A Yes, that is the one.

14 Q Okay. Did you notice the date of that?

15 A You know, I might have at the time. I
16 don't remember right now.

17 Q When did you see that?

18 A I think I saw that maybe about four or
19 five months ago.

20 Q Who showed it to you?

21 A It was sent to me by attorneys from

1 Wilson, Elser.

2 Q Do you remember which?

3 A That's the law firm.

4 Q Why did they send it to you?

5 A I guess for my general knowledge.

6 Q Did you have any discussions with them
7 about it before or after you viewed it?

8 A You know, I had some opinions about it,
9 but I don't know if I ever shared it with them.

10 Q Would it be fair to say that your
11 opinions about that video was it was telling people
12 things they didn't need to be afraid of?

13 A You know, my problem is I don't
14 remember exactly what my opinions were. I do
15 remember I disagreed with things that were said in
16 that video.

17 Q Do you recall a scene in the video
18 where a gentleman is looking at some brake parts
19 laid out on a table and he is wearing a
20 dual-cartridge respirator?

21 A You know, I think I remember him using

1 a respirator, but I don't remember exactly what it
2 was.

3 Q Do you remember the woman playing the
4 police officer and one of the gentlemen either
5 playing a mechanic or who was a mechanic inspecting
6 a brake and wearing dual-cartridge respirators while
7 they were doing that?

8 A Now, it's possible, but, again, I just
9 don't remember a lot of the specifics.

10 Q What do you think in general your
11 opinions were about that video?

12 A Well, again, I believe they incorrectly
13 assessed the hazards associated with working on
14 brakes.

15 Q So that video, according to what it
16 says, was created in or about 1994?

17 A Are you there?

18 Q Yeah, I am here. That was somebody
19 else's phone causing us problems.

20 Would it be fair to say,

21 Dr. Rabinovitz, that Ford had hired you to give

1 asbestos-related testimony in litigation prior to
2 1994?

3 A You know, I don't think they did.

4 Q Would it be fair to say that by 1994,
5 Bendix had hired you to give testimony in
6 asbestos-related cases?

7 A Yes.

8 Q And the information regarding the
9 potential exposures of asbestos to individuals in
10 performing brake repair was sufficiently developed
11 at that time for you to have reached the conclusion
12 that people were not in danger; is that correct?

13 A It would be correct that from the
14 normal, foreseeable replacement of brakes, I don't
15 think there is an increased risk to persons doing
16 that without wearing respiratory protection.

17 Q And the epidemiological evidence and
18 other medical evidence that you rely upon in
19 concluding that no increased risk arises from that
20 work was also largely developed by 1994, correct?

21 A That I am not as sure of whether I had

1 as much epidemiological information. I mean,
2 certainly some came after 1994.

3 Q Well, there was enough developed by '94
4 when you were consulting with Bendix that you had
5 concluded there was no increased risk, correct?

6 A Yes. I am just saying that more came
7 later.

8 Q I understand. But, for example, the
9 McDonald study and the Teta study were published
10 before that?

11 A Yes. I mean, there was some
12 information. Right now, I am familiar with a number
13 of studies, and I don't always remember just when
14 they were published.

15 Q Did you ask Ford or its lawyers why it
16 was in 1994 they put out a video that indicates you
17 need to wear a dual-cartridge respirator if you are
18 just looking at brakes on a table?

19 A I did not ask that specific question.

20 Q Did you ask them anything about why it
21 is they created that tape and distributed it amongst

1 their dealers?

2 A Well, I don't know, but it's my
3 understanding that sometimes there are parts of Ford
4 that might do things independently, sort of like the
5 left hand doesn't know what the right hand is doing.

6 Q Is it your understanding that Ford no
7 longer subscribes to the factual information
8 contained in that video?

9 A I don't know exactly what Ford's
10 position is. I have my own positions.

11 Q Would you agree as an industrial
12 hygienist that it's important not to warn about
13 things that aren't dangerous?

14 A Yes. My experience is that when
15 working with -- in the occupational setting, that
16 you have a limited opportunity to influence employee
17 behavior, and it should be reserved for providing
18 them with warnings that are important.

19 Q It's the don't cry wolf problem, for
20 lack of a better phrase?

21 A To some extent, yes, that's true.

1 Q Or the Chicken Little phenomenon would
2 be a different way to put it?

3 A Yes.

4 Q All right. I saw in one of your prior
5 depositions, sir, a discussion of some testing that
6 you were involved in in Postal Service garages.

7 A Yes.

8 Q Can you describe for me how that
9 discussion came about?

10 A I was working at JRB or SAIC and won a
11 contract with the Eastern United States Postal
12 Service division to conduct air sampling studies in
13 56 vehicle maintenance facilities to determine the
14 mechanics' exposure to asbestos from replacing
15 brakes and also to take area samples around where
16 the mechanic was working to determine what exposures
17 might be experienced by other workers in the garage.

18 And we went into each of those 56
19 facilities once every six months for 18 months, so
20 we went into each one three times, where they would
21 have a mechanic who would be working on brakes for

1 the day, and sometimes they were working on cars,
2 sometimes they were working on the Jeeps that
3 deliver mail, and sometimes they were working on
4 trucks. And we took peak samples and time-weighted
5 average samples and personal breathing zone samples
6 and area samples, and then we analyzed them.

7 And wherever we got -- they were
8 initially analyzed by phase contrast microscopy.
9 And any time the exposure exceeded .1 fibers per cc
10 for an eight-hour time-weighted average, we had them
11 reanalyzed by electron microscopy.

12 And the results of all of the studies
13 were that if you used the electron microscopy
14 results for those PCM results where levels above .1
15 were found, we found no exposures that exceeded .1
16 fibers per cc.

17 Q On a time-weighted average?

18 A On a time-weighted average.

19 Q Did you find exposures that exceeded
20 one fiber per cc on a peak?

21 A You know, I don't remember what the

1 highest peak sample was.

2 Q In taking peak samples, did you seek
3 the OSHA timeframe for what constituted a peak
4 sample?

5 A We did this in the early '80s, so it
6 was while the eight-hour time-weighted average would
7 have been 2. So I am assuming at that time the peak
8 would have been 10, 5 or 10, I am not sure which.
9 So I am pretty sure we never exceeded the peak.

10 Q Sure.

11 But there was, at least in the past,
12 two OSHA regulations for exposure, one for a peak of
13 15 minutes, and the other for an eight-hour
14 time-weighted average; is that correct?

15 A Well, the eight-hour time-weighted
16 average is the average, and the 15 minute is the
17 peak.

18 Q Right.

19 Were the peak samples collected during
20 15-minute time periods?

21 A They may have been taken for less. I

1 would have to go back. The peak activity was when
2 the nuts were removed, the wheel taken off and then
3 the drum removed. And I don't remember if that
4 always took 15 minutes.

5 And I believe we may have stopped the
6 exposure when that peak activity ended so that we
7 would be truly measuring what the peak exposure was
8 and not continuing to run the sample when there
9 would be lower levels. I just don't remember if it
10 always was 15 minutes.

11 Q When you say the peak exposure involved
12 those three activities, are you saying that those
13 were the three activities that generated the highest
14 level?

15 A It would be that and then if you used
16 compressed air to blow out the residual dust on the
17 backing plate.

18 Q Did the sampling for the peak samples
19 include any blow-out that occurred?

20 A Yes, because I remember doing it once,
21 and I analyzed the filter myself, and the filter was

1 quite loaded. It was quite difficult to count.

2 Q And did you all find that there were
3 exposures in removing the lugs from the Postal
4 Service vehicles?

5 A Well, again, we didn't isolate it down
6 to just removing the lugs, but when you use an
7 impact wrench and you remove the nuts, you can see
8 visible dust.

9 Q And the same for when you take the
10 wheel off and remove the drum?

11 A Correct.

12 Q Now, was compressed air used for
13 cleaning out the backing plates and the brake
14 assembly that's attached to the backing plates in
15 all of the Postal Service garages?

16 A No. I think it was only done
17 sparingly, but I happened to be doing one of the
18 studies myself when that was done.

19 Q Am I correct that the Postal Service
20 employees that were performing this work were
21 required to wear respiratory protection?

1 A Some of them did and some of them
2 didn't.

3 Q Were they supposed to?

4 A You know, I don't remember whether it
5 was voluntary or not. I just don't remember what
6 their specific requirements were at the time.

7 Q When you all were measuring by PCM, am
8 I correct you used the OSHA counting convention, you
9 counted fibers longer than five microns?

10 A Yes, we certainly only counted fibers
11 longer than five microns.

12 Q And only those with the appropriate
13 aspect ratio to qualify under OSHA?

14 A Correct, the 3 to 1.

15 Q All right. Dr. Rabinovitz, back to the
16 Postal Service, am I correct that there was no arc
17 grinding, riveting, filing or sanding in the studies
18 that you all did at the Post Office?

19 A You know, I think I only did about ten
20 or 12 myself. There was no grinding or filing on
21 the ones I did. I don't remember now whether there

1 was in any of the others.

2 Q Okay. At least as we sit here today,
3 you have no recollection of there being any study in
4 the Post Office samples of arc grinding, riveting,
5 filing or sanding of the brake shoes?

6 A I cannot say that that happened during
7 some of these samples.

8 Q Understood.

9 Now, your report contains various
10 statements regarding the length of fibers in brake
11 dust. When you use brake dust in your report, are
12 you discussing wear debris that collects inside the
13 drum?

14 A Wait. I am not sure what you mean by
15 that.

16 Q Well, I am not sure what you mean by
17 brake dust in your report. So at some times, it
18 seems like you are talking about the dust that
19 collects inside the drum from the wearing down of
20 the brake during the braking process.

21 A Yes. I mean, that would be the debris

1 that's generated from the braking process.

2 Q In using the term brake dust in your
3 report, are you also referring to the dust created
4 by filing or sanding brakes?

5 A No, I don't think so.

6 Q Are you aware of studies that have
7 characterized the distribution of sizes of the
8 fibers created from the filing or sanding of brakes?

9 A I think there is a study by Frank Weir
10 where he did characterize that. And my recollection
11 was he found that they were mostly short fibers.

12 Q Now, is that the Weir study cited at
13 Reference 10 in your report?

14 A I think that is, yes.

15 Q Do you know who paid for that report?

16 A I don't know at this time.

17 Q Do you know whether Dr. Weir stated in
18 his paper whether it was funded by a company that's
19 defending brake cases?

20 A I don't remember.

21 Q Do you think that if it was, that that

1 is something he should have disclosed?

2 A Well, I believe that he should have
3 reported accurately what he did. And the test of
4 determining the validity of the study would be based
5 on what he said he did, not by who funded it.

6 Q All right. The report acknowledges
7 that it was supported in part by a grant from
8 Hennessy Industries. Do you know who Hennessy
9 Industries is and what their connection to brake
10 litigation is?

11 A No, I don't.

12 Q Have you ever performed any studies
13 regarding the dust created from arc grinding
14 machines?

15 A I have not done that. I have done a
16 study on drilling brake pads.

17 Q Was that study published in any
18 publication available to the public?

19 A No.

20 Q Do you have that report?

21 A I have it someplace.

1 Q Who was it performed for?

2 A Otis Elevator.

3 Q So just to be clear, we have to go back
4 and add Otis to the list of the companies you
5 performed asbestos-related consulting for, correct?

6 A Correct.

7 Q Any other elevator companies?

8 A No.

9 Q What about roofing materials?

10 A I have actually done a study on a
11 roofing mastic.

12 Q Who did you do that for?

13 A Gibson-Holman.

14 Q What about CertainTeed, did you ever do
15 any work for them?

16 A No.

17 Q I am just looking at my notes here,
18 sir. It will actually speed things up if I do that
19 and take a break from asking you questions. It will
20 take about a minute.

21 A Okay.

1 Q Do you have any understanding, sir,
2 about who manufactured the friction material that
3 was used on brakes sold by Ford Motor Company in
4 boxes that said Ford?

5 A I don't know specifically who actually
6 manufactured the brakes.

7 Q Have you ever seen any Ford Motor
8 Company original equipment replacement brakes?

9 A I never bought any myself because they
10 were too expensive. Whether I have seen them on
11 shelves at Ford dealerships, I don't know, but I
12 have never purchased any.

13 Q Sir, in performing a brake job, have
14 you ever wondered whether a car needed its brakes
15 replaced and then checked the brakes to see?

16 A Yes.

17 Q And have you done so in cars that had
18 drum braking?

19 A Well, you don't have to take the
20 brake -- I mean, you just do that with drum brakes.
21 You can look and see if a disc brake needs

1 replacing.

2 Q Correct.

3 So on a disc, you can look and see if
4 there is enough of a pad left?

5 A Yes.

6 Q With a drum brake, am I correct that
7 you need to take the drum off the braking assembly
8 in order to see whether there is enough friction
9 material left on the drums, the shoes that --

10 A Yeah. I have always had to take the
11 drum off the axle.

12 Q So in order to do that, you have got to
13 take the wheel off first, right?

14 A Sometimes on the rear brake, you can
15 take the drum -- well, actually, the front brake --
16 in the older cars where you had replaceable
17 bearings, you could take the drum and the wheel off
18 as an assembly by just sliding out the bearings and
19 then pulling the whole hub off.

20 Q Right.

21 So you would have to take off the wheel

1 and the drum, and the wheel and the drum might be
2 attached together that you can take them off at
3 once, or you might have to take them off separately?

4 A Right.

5 Q But in any event, in order to determine
6 whether the drum brake shoes are worn down so much
7 you have to replace them, you have to remove the
8 drum?

9 A That's the only way I know of.

10 Q Right.

11 You can't -- unless you were Superman
12 and had X-ray vision, you wouldn't be able to see
13 through the steel drum to see how much friction
14 material was left?

15 A That's my understanding.

16 Q Have you ever taken the drum off and
17 seen that there was enough friction material left on
18 the shoes that you did not have to replace them?

19 A Yes.

20 Q Would you go buy brakes before pulling
21 the drum and seeing how much friction material was

1 left when you were doing that work?

2 A I might or I might not. It depends on,
3 you know, how much time I had and whether I -- I
4 wouldn't want to put the drum back on and then have
5 to take the drum back off if I needed to replace the
6 brakes.

7 Q So if you were pretty sure you needed
8 new brakes, you would go buy a set, and if you
9 weren't, you might wait until you got the drums off
10 to see?

11 A And you might want to take the brakes
12 off first just so when you went to buy the
13 replacement brakes, you could make sure you were
14 getting the right ones.

15 Q Right. You want to take the old shoes
16 in with you and match them up to the shoe the guy
17 gives you?

18 A Right. And then you can get your core
19 deposit back right away.

20 Q Right. You can hold the new shoe and
21 the old shoe together and make sure the holes lined

1 up and that the metal parts were the same length?

2 A That's correct.

3 Q All right. And back in the day when
4 people still had core deposits for shoes, you would
5 have to take your old shoes back so they could be
6 remanufactured later; is that right?

7 A Yes. Shoes you have deposits on, pads
8 you don't.

9 Q So am I correct that there were times
10 when you were replacing brakes where you would pull
11 the drum before you had the box for the replacement
12 shoes?

13 A There might have been times I did that.
14 I suspect most of the time I probably got the brakes
15 beforehand.

16 Q But if you pulled the drums to check
17 whether you needed new brakes before you went to buy
18 the new brakes, then you wouldn't have the box with
19 you; is that fair to say?

20 A Well, that's true.

21 Q In Reference 3 in your report --

1 MR. RUCKDESCHEL: Once again, whoever
2 just did something with their phone, it's being
3 disruptive. Please try and avoid doing it again.
4 Call in on a different phone, for example.

5 BY MR. RUCKDESCHEL:

6 Q Dr. Rabinovitz, Reference 3 in your
7 report is to the McDonald study of a friction
8 products plant, correct?

9 A Yes.

10 Q And you cite Reference 3 on page eight
11 of your report in the second to last paragraph under
12 the heading expert opinion, correct?

13 A Yes.

14 Q That sentence that I cited says,
15 "Specifically, chrysotile has been shown to have
16 little, if any, potential for causing mesothelioma
17 in several valid epidemiology studies." And then
18 you cite Footnote 3, correct?

19 A Yes.

20 Q All right. Am I correct there is only
21 one study listed in Footnote 3?

1 A There is, although I actually -- when I
2 supplied references, I also included the Liddell
3 study. I only had that one reference, but I do rely
4 on other studies.

5 Q All right. Other than the McDonald
6 study cited there and the Liddell study that you
7 believe is from 1997, what other studies?

8 A I could also put in the -- some of I
9 think it was Darnton and Hodgson and Berman and
10 Crump. And there are others.

11 Q Okay. What publication by Hodgson and
12 Darnton?

13 A You know, I don't remember which one.
14 I believe it's the one where they talk about the
15 potential exposures of 1 to 100 to 500 between the
16 different fiber types.

17 Q All right. And that would be their
18 paper from 2000 titled "The Quantitative Risks of
19 Mesothelioma and Lung Cancer in Relation to
20 Asbestos?"

21 A That sounds familiar.

1 Q Have you seen any more recent
2 publications by Hodgson and Darnton on the topic?

3 A You know, I think I have. I just don't
4 remember at this moment.

5 Q Okay. Would you agree that the
6 exposure information considered by Hodgson and
7 Darnton in their 2000 paper is a substantial problem
8 in the validity of their numerical analysis?

9 A Well, you know, again, I would have to
10 reread that to comment on what you are asking.

11 Q You say you are not prepared to comment
12 on it today?

13 A That's correct.

14 Q Fair enough.
15 The same for Liddell and the Berman and
16 Crump?

17 A Well, it has been a while since I have
18 seen some of those articles. And, again, what I am
19 doing is using -- if you lump them all together,
20 there is just it seems like an overwhelming amount
21 of information to suggest the lack of toxicity of

1 chrysotile compared to amphiboles in increasing the
2 risk for getting mesothelioma.

3 Q Would you agree, sir, that it is the
4 position of the EPA, NIOSH, OSHA, the Center for
5 Disease Control, IARC, World Health Organization,
6 the United States Public Health Service that
7 chrysotile asbestos is capable of causing
8 mesothelioma in humans?

9 A You know, I haven't reviewed all of the
10 positions for all the agencies recently, but I
11 believe that they all have stated that position.

12 However, I think you would have to look
13 at where they are coming from and how they go about
14 making those recommendations. I don't think that
15 changes the fact of the data of the overwhelming
16 amount of information suggesting that there is
17 significant differences in the potency of different
18 asbestos fibers.

19 Q You would agree, sir, that reviews like
20 Hodgson and Darnton take old midget impinger samples
21 and try and convert them to fiber per cc

1 measurements?

2 A I am aware that they have done that. I
3 am aware that there is a lot of variability in doing
4 that, that it's not a precise conversion.

5 Q The conversion, as reported by Dr. Peto
6 at least, essentially can vary by as much as a
7 couple orders of magnitude, depending on which study
8 you are looking at?

9 A I don't know the exact magnitude, but I
10 know that there is a lot of variation. I agree with
11 that.

12 Q In fact, Hodgson and Darnton used the
13 term guesstimates with respect to a lot of the
14 exposure information in their paper, don't they?

15 A Well, you know, I don't remember them
16 specifically using that word, but when you are using
17 data from that time period, you know, the data
18 collected back then, the amount, the methodology,
19 it's different than what we do today.

20 Q On page nine of your report, you
21 indicate that in the heading Asbestos Emissions

1 During Brake Replacement, the primary exposure to
2 dust occurred removing the drum, removing the
3 springs and cleaning operations. Do you see that?

4 A Yes.

5 Q Do you agree that for an individual
6 like Mr. Shifflett, there is also opportunities for
7 exposure to airborne asbestos from the filing and
8 sanding of brakes as he described?

9 A I would say there is a potential for
10 some exposure, but I think he really didn't describe
11 grinding and light sandpapering and some initial
12 beveling with a file. I do not think that would be
13 a significant emission.

14 Q Do you have a reference for me for
15 anywhere in his deposition where he used the phrase
16 "light sanding"?

17 A Well, there is no reason not to do
18 light sanding. You are just roughing the edge or
19 removing any grease if it happened to get on there.
20 I mean, I don't recall him describing saying that
21 the linings were too thick and that he had to remove

1 a lot of lining.

2 Q But light sanding is your phrase, not
3 his, right?

4 A You know, that's possible, but I would
5 think that's what he would have done.

6 Q What I am asking you, sir, is a very
7 narrow question. You can't tell me in
8 Mr. Shifflett's testimony where he used the phrase
9 light sanding; is that correct?

10 A I would have to go back, but at this
11 moment, I can't remember him using that specific
12 term.

13 Q Now, with respect to the studies of
14 exposure that you have considered that were
15 conducted by NIOSH as referenced on page 11 of your
16 report at References 15 and 16 --

17 A Well, the references of 15 and 16 are
18 not NIOSH studies. I didn't actually include the
19 specific NIOSH studies. I just indicated that such
20 studies do exist.

21 Q Okay. And that was going to be the

1 question. And I guess that's what it says. The
2 results are consistent with other studies, including
3 surveys conducted by NIOSH where mechanics'
4 exposures to asbestos were evaluated while replacing
5 brakes, and then you cite Cheng and Rodelsperger?

6 A Yes.

7 Q Which of the NIOSH studies examined
8 individuals that filed or sanded brakes?

9 A You know, I would have to go back and
10 look. I do not know right now if they included
11 that.

12 Q Okay. So I can't ask you questions
13 about that today?

14 A That's correct. I have some of those
15 studies, but I haven't looked at them recently.

16 Q All right. And would you agree that
17 many of the NIOSH studies were looking at garages to
18 determine how effective dust control measures were?

19 A Again, I would have to go back and read
20 it to determine what procedures were being used when
21 they took their samples.

1 Q So as far as today goes, those aren't
2 questions that I can ask you about today?

3 A I do not recall the specifics of what
4 happened on any given survey where NIOSH was taking
5 air samples.

6 Q Did they file and sand brakes in either
7 the Cheng or Rodelsperger studies cited at 15 and
8 16?

9 A You know, I would have to go back and
10 review it. I haven't read those in a little while.

11 Q Do you have them with you today?

12 A I have them in the computer. I brought
13 a computer, and I could probably bring them up. Did
14 you want me to do that?

15 Q I am taking a look at it here to see,
16 sir.

17 What is the current eight-hour
18 time-weighted average allowed by the OSHA standards?

19 A .1 fibers per cc.

20 Q Now, if an individual had an eight-hour
21 time-weighted average of .13, that would be over the

1 current OSHA standard?

2 A Yes.

3 Q Does the current OSHA standard purport
4 to protect from cancer or simply to reduce the risk?

5 A My understanding is that OSHA is still
6 using some outdated risk assessments, and they have
7 concluded that adherence to their study reduces the
8 risk but does not eliminate it.

9 Q Doctor, they have calculated that there
10 will be several cancers per hundred thousand workers
11 exposed at that level?

12 A I think it's three and a half per
13 hundred, but that's based on an outdated study, in
14 my opinion.

15 Q Have you ever written OSHA and
16 suggested that they redo it?

17 A I have talked to some OSHA people,
18 including when I was a -- let's see. When I was at
19 SAIC, I talked to some of them when they were
20 planning on doing their rule-making for the 1986
21 standard. I don't remember the exact conversation

1 or whether I brought it up then or not.

2 Q Have you ever written them since then?

3 It's been decades since 1986. Have you ever thought
4 that maybe it would be a good idea for you to write
5 something to them saying you better update your risk
6 assessment?

7 A No, I have not.

8 Q Have you ever published anything about
9 it?

10 A No.

11 Q You are not an epidemiologist, are you,
12 sir?

13 A No.

14 Q You have never designed and conducted
15 an epidemiological study?

16 A I did help design an epidemiological
17 study.

18 Q When and what?

19 A It was a study that FMC was doing at a
20 phosphorous plant in Idaho. And I was assisting in
21 attempting to -- how they would evaluate exposures

1 of the cohort.

2 Q FMC is Food Machinery Corporation?

3 A Yes.

4 Q And why was it important to evaluate
5 the exposures of the cohort?

6 A Because in an epidemiology study, you
7 would like to look at incidence of disease as
8 compared to exposure or exposure dose.

9 Q Okay. Why?

10 A Because you would like to see if there
11 is an increased incidence with increasing exposures.
12 That provides some information to suggest if you are
13 on the right track of correlating an adverse effect
14 associated with exposure to a given material.

15 Q What was the general design of the
16 study that FMC was considering doing? Was it a
17 case-control study, was it a cohort study?

18 A You know, I don't remember at this
19 time.

20 Q What year or decade did that work
21 occur?

1 A I believe that was in the 1990s.

2 Q And do you know whether that study was,
3 in fact, performed?

4 A I don't know.

5 Q And I take it, then, you don't know
6 whether the results of the study were ever made
7 available?

8 A I do not know.

9 Q Would you agree that if you are
10 performing an epidemiological study to evaluate
11 whether a particular exposure can cause a particular
12 disease, you would want to know whether the people
13 were actually exposed to the substance?

14 A Yes, you would want to know that.

15 MR. RUCKDESCHEL: Sir, I don't have any
16 further questions. The lawyer for the Rehrigs may
17 have some questions for you. And I may have a few
18 follow-up. But at this point, I will pass the
19 witness.

20 EXAMINATION

21 BY MR. OLIVER:

1 Q Good afternoon, Doctor. My name is

2 Kevin Oliver. I am here for the Rehrig family.

3 It would not be necessary for me to

4 re-ask you the questions that Mr. Ruckdeschel asked

5 you about your background and your previous

6 testifying history, would it?

7 A I certainly would be happy with you not

8 asking those questions.

9 Q Good. I wasn't planning to.

10 I am going to just focus on some

11 specific issues. You have reviewed this case and

12 have formulated opinions only for Ford in the Rehrig

13 case; is that true?

14 A Yes.

15 Q You have no opinions to express today

16 regarding any other potential exposures that did or

17 did not increase Mr. Rehrig's risk for disease; is

18 that correct?

19 A Not really, no.

20 Q Tell me what is incorrect about what I

21 said.

1 A Well, I mean, I have some opinions
2 about certain products and in general whether they
3 are capable of causing an increased risk of disease.

4 Q As to friction materials found in brake
5 linings and clutches, your opinion would be those
6 are not, in your opinion, capable of generating
7 exposures that increase risk of disease; is that
8 correct?

9 A As the work involving those products,
10 if it's done in a foreseeable manner, that is
11 correct, I don't see the potential for exposures
12 that would increase the risk of getting an
13 asbestos-related disease.

14 Q And that is an opinion that you held
15 for some time prior to becoming involved in the
16 Rehrig case, correct?

17 A That's true.

18 Q Are all the materials that you reviewed
19 in connection with the Rehrig case listed in your
20 report, which is one of the reports that are marked
21 as Exhibit 5, collectively?

1 A Yes.

2 Q Can you think of any materials that you
3 reviewed in connection with the Rehrig case that are
4 not listed in Exhibit 5?

5 A No.

6 Q The same situation that you described
7 with regard to medical records in connection with
8 the Shifflett case whereby you were provided with
9 some Internet address to go to to review medical
10 records, but you did not download them, did you use
11 that same procedure to review medical records in the
12 Rehrig case?

13 A Yes. In fact, it was set up that when
14 I logged in, they were both available.

15 Q Okay. Were they separated in some way
16 so that it was clear when you stopped looking at
17 Shifflett and began looking at Rehrig, or vice
18 versa?

19 A Yes. You logged on to each name or,
20 you know, highlighted each name to get the
21 materials.

1 Q I see.

2 Were you first contacted in the Rehrig
3 case at the same time that you were first contacted
4 in the Shifflett case?

5 A Yes.

6 Q In other words, the assignment for
7 these two cases came together and in the same
8 format?

9 A Yes.

10 Q Can you get us any closer than you have
11 previously been able to regarding the date on which
12 that assignment first came in?

13 A No. I would have to go back to the
14 E-mails to see when the first one was.

15 Q Once you heard that Mr. Rehrig claimed
16 exposure to asbestos as a result of work performed
17 from working with brake linings of vehicles, did you
18 know everything you needed to know in order to
19 conclude that your opinions were going to be that
20 work did not increase his risk?

21 A You are saying that after I read his

1 depositions so that I would have an understanding of
2 what he did, did I have enough information to draw
3 my conclusions?

4 Q Well, I will get to that in a minute.
5 But first of all, when you heard that he had done
6 brake mechanic work and that's where he was alleging
7 his exposure from Ford, did that tell you everything
8 you needed to know in order to know that you were
9 likely going to conclude that his work did not
10 increase his risk?

11 A Well, all I had to do was to find out
12 that he did it in a foreseeable manner and didn't do
13 anything that I wouldn't expect and there were no
14 unusual conditions, and then yes, I would have at
15 that point thought it was likely that I would find
16 he would not have been exposed to a harmful dose of
17 asbestos.

18 Q And when you reviewed Mr. Rehrig's
19 materials, you found that the work was done in what
20 you considered to be a foreseeable manner, correct?

21 A Not only that, but he would have done a

1 limited amount of work involving actual
2 Ford-supplied products, far less than a full-time
3 mechanic.

4 Q I appreciate that, but let me ask my
5 question again. When you reviewed the Rehrig
6 deposition materials, you found that the work he
7 described was done in what you considered to be a
8 reasonably foreseeable way?

9 A He talked about some sanding. And I
10 don't remember, it might have been some -- I would
11 have to look and see whether he talked about filing
12 also.

13 While I do know many mechanics have
14 said they do that, just from my own experience, I
15 find that that really isn't necessary.

16 Q By saying it's not necessary, you are
17 not saying that it was not foreseeable, are you?

18 A I am saying that I know that some
19 mechanics do that. I am just saying I don't really
20 think it's necessary.

21 Q Okay. Are you including blowing-out

1 activities in what you consider to be normally
2 foreseeable?

3 A Well, I know mechanics, at least during
4 a certain time period, did use compressed air, but I
5 don't believe he used compressed air.

6 Q All right. Did you include sweeping up
7 after your work within the realm of what you would
8 believe would be normally foreseeable work?

9 A Yes, there is some sweeping that's
10 normally done afterwards when it's done inside. And
11 I believe he may have been in a garage earlier when
12 he worked at somebody else's garage, but I don't
13 think -- I think he may have done it outside later
14 in life.

15 Q All right. Did I understand your
16 testimony correctly that since the time you have
17 been on your own, so to speak, you have had
18 somewhere on the realm of eight to ten cases for
19 Ford?

20 A Around that. I don't know the exact
21 number.

1 Q And would it be fair to say that in
2 each of those eight to ten cases, the persons
3 involved in those cases were claiming to have an
4 asbestos disease as a result of exposure to
5 asbestos-containing products that they believed to
6 be supplied by Ford?

7 A I think that's correct.

8 Q And in each of those cases, you
9 concluded that their work with those products did
10 not increase their risk?

11 A You know, it might be that one of them
12 settled so fast that I don't know if I looked at the
13 materials or much of it, but in general, that would
14 be true.

15 Q Okay. The discussions that you told
16 Mr. Ruckdeschel about earlier -- was there ever an
17 occasion when you discussed the Rehrig case in a
18 separate conversation than those you described
19 earlier with regard to the Shifflett case?

20 A No. I think each time I had a
21 discussion, it would have included both.

1 Q I would assume you have not prepared
2 any demonstrative materials or PowerPoint that you
3 intend to use at trial in the Rehrig case?

4 A I have not.

5 Q Okay. It appeared to me in my brief
6 review that you cited the same reference materials
7 in your footnotes in your report in the Rehrig
8 report as those that you had cited in the Shifflett
9 report.

10 A I think that's correct.

11 Q Is there any reference that you
12 reviewed in Rehrig that you did not also review in
13 Shifflett?

14 A No. Essentially, it was, you know, a
15 similar analysis. I believe that Mr. Shifflett may
16 have replaced more brakes than Mr. Rehrig, but
17 Mr. Shifflett bought cars from salvage facilities
18 and did not use OEM replacement brakes. So, in
19 fact, as far as Ford-supplied equipment was
20 concerned for both of them, there was very, very few
21 brake jobs done by either one.

1 Q Which report did you write first? Do
2 you know?

3 A You know, I would be guessing. I am
4 thinking Rehrig, but I am not a hundred percent
5 sure.

6 Q Well, let me tell you why I am asking.
7 It appears to me that the discussion -- once you
8 leave the sort of case-specific analysis and you
9 discussed the background information -- let me try
10 to be sort of specific.

11 Once you begin the discussion of the
12 section, for example, that you have titled analysis,
13 it appears to me that the analysis section of the
14 reports is virtually verbatim. Am I right about
15 that?

16 A That might be the case. And, again,
17 that is because when you talk about -- they were
18 both not career mechanics, limited amount of Ford
19 products and actually talked about replacing brakes
20 doing some similar things.

21 Q Okay. I know that the conclusion

1 section is different, the initial background section
2 is different, but there is a chunk in the middle
3 that appears to be verbatim in both reports.

4 A And that would be because, there again,
5 the number and methodology was very similar, so the
6 same analysis would apply to both.

7 Q My question is did you create that
8 verbatim section in your reports that you used in
9 Shifflett and Rehrig for either the Shifflett or
10 Rehrig reports, or did you have that text already on
11 your computer from some other source?

12 A I would have had some of that text
13 already available. And I take that text and then I
14 go through it and modify it to fit the specific
15 circumstances.

16 Q So do you have a template that you
17 start with or a form that you start with for your
18 reports that involve brake mechanic or friction
19 work?

20 A I have some older reports, and
21 sometimes I will go through and take a part of this

1 and a part of that and fit it together and then go
2 over it and then make it specific for the situation
3 that I am dealing with. So it ends up being
4 different, but it starts out with some parts from
5 other reports.

6 Q All right. And so you just don't know
7 whether you went through that process for the first
8 time with the Shifflett report or for the first time
9 with the Rehrig report?

10 A It's true I can't be sure, but it is
11 likely that whatever one I did first, I would have
12 thought to myself, gee, this is close enough that
13 this will serve as the start for the next one, and
14 then I will read through it and change it as is
15 necessary.

16 Q Okay. What was the date of your report
17 in the Shifflett case?

18 A I see they are both November 9th.

19 Q All right. And you said it would just
20 be guessing for you to say whether you prepared the
21 Shifflett report first or the Rehrig report first?

1 A That's correct.

2 MR. KRAUSE: Asked and answered twice.

3 A Again, I said I am not sure. It's
4 possible it was Rehrig, but, again, I am just not
5 sure.

6 Q Do you have any opinions regarding
7 Robert Rehrig's exposures relating to Ford products
8 that were not summarized in your November 9 report?

9 A I mean, I believe I put my opinions
10 regarding Ford -- I mean, I have, I believe, a fair
11 amount of knowledge about asbestos exposures from
12 vehicles, and I have some knowledge about Ford, and
13 that information was used in writing this report and
14 putting the conclusions and opinions.

15 But to say that it represents
16 everything I know about brakes and Fords, no, that
17 would not be true. There are probably other pieces
18 of information I know. I can't just tell you
19 everything I know about asbestos and exposures
20 associated with brakes.

21 Q All right. Do you believe your

1 November 9 report represents a fair summary of the
2 opinions you have to express regarding Robert Rehrig
3 and his allegations of exposure to Ford products?

4 A I think it represents the major points
5 that would be necessary in demonstrating a lack of
6 exposure to a dose of asbestos that could cause him
7 harm from Ford products. But, again, it's not
8 expressing everything I know about asbestos, brakes
9 and Ford products.

10 MR. OLIVER: Okay. Thank you. That's
11 all the questions I have for you this morning.

12 RE-EXAMINATION

13 BY MR. RUCKDESCHEL:

14 Q Dr. Rabinovitz, this is John
15 Ruckdeschel again. I have a few follow-up questions
16 for you, a couple that relate to questions that were
17 just asked and a couple that looking over my notes I
18 wanted to touch base with you on.

19 You talked about Ford-supplied
20 materials a little bit with counsel for the Rehrigs.
21 Would you agree that when you go to a car

1 dealership, Ford supplies you with a car?

2 A You mean when you are buying a brand
3 new car?

4 Q Yeah.

5 A If you are buying a brand new Ford at a
6 Ford dealership, I think that what I just said is
7 yes, you are buying a new Ford product.

8 Q Okay. And the car comes with a braking
9 system, right?

10 A Unless you want to drive into a tree,
11 yeah.

12 Q It's kind of integral to the car? You
13 can't safely operate it unless it's got brakes,
14 right?

15 A I believe that's true.

16 Q Okay. And the braking system has a
17 number of components to it, would you agree?

18 A Yes.

19 Q There is a backing plate, a cylinder,
20 some springs. If we are talking about a drum
21 braking system, there is a drum, right?

1 A Yes.

2 Q What else?

3 A There is a master cylinder, there is
4 lines, there is brake fluid, there is a pedal, there
5 is brake lights, circuit breakers. Well, fuses.

6 Q There is brake shoes as well, right?

7 A And brake shoes, yes.

8 Q And is it fair to say that the car is
9 designed to outlast the original pair of shoes?

10 A And depending on how you drive, most
11 people will have to replace their brakes before they
12 would consider the car ready for the junkyard.

13 Q Sure. I mean, I guess if you are the
14 kind of person that trades in their new car every
15 two years or three years, you might make it through
16 a set of brakes, make it through that period with an
17 original set of brakes if you didn't drive much or
18 didn't drive fast, right?

19 A That's possible.

20 Q The useful life of the car is designed
21 to be longer than the useful life of the first set

1 of brake shoes, would you agree?

2 A I would agree with that.

3 Q All right. And the braking system has
4 a number of components that over the useful life of
5 the car can expect a need to be replaced or at least
6 repaired, would you agree?

7 A I mean, sometimes yes and sometimes no.
8 I mean, are you talking about like wheel cylinders
9 or calipers? Are you talking about that?

10 Q Sure.

11 For example, brake fluid, in the useful
12 life of a car, it's probably going to have to be
13 replaced or at least supplemented at some point?

14 A Brake fluid, yes.

15 Q Okay. And at least in the past,
16 cylinders often would develop a leak in a drum
17 braking system and need to be either rebuilt or
18 later on just swapped out for a new one, would you
19 agree?

20 A Yes.

21 Q All right. And, again, these are all

1 things that are replaced in the ordinary life of the
2 car?

3 A Yes.

4 Q Okay. The same for the brake shoes,
5 the brake shoes get replaced during the ordinary
6 life of the car? You don't have to get a new car
7 every time the brake shoes wear out, right?

8 A Right.

9 Q Do you have any expertise, sir,
10 regarding the design of the braking system and the
11 friction material used in the braking system?

12 A I do not consider myself an engineer
13 who has expertise in how you design -- for example,
14 I would not be an expert to know how much surface
15 area you need, no. I don't consider myself an
16 expert in that area.

17 Q Have you reviewed the "Don't Blow It"
18 video that came out from the EPA around the time of
19 the original "Gold Book" pamphlet?

20 A I don't know if I have seen a video on
21 that. I may not have.

1 Q Did you see Mr. Shifflett's testimony
2 regarding blowing dust off the brake assembly using
3 his own breath?

4 A Yes.

5 Q In blowing out a brake drum assembly
6 with compressed air in a commercial garage, do you
7 have any idea what the pounds per square inch of the
8 compressed air hose is?

9 A I think OSHA usually wants to see like
10 30 pounds of pressure, but I know they often go up
11 to 90 pounds of pressure.

12 Q Okay. And you observed the blowing out
13 of brake assemblies with compressed air before in
14 your professional life?

15 A Again, I took air samples while someone
16 was doing it.

17 Q Understood.

18 How long did it take per wheel to get
19 the brake assembly cleaned out with compressed air,
20 approximately?

21 A About a minute, approximately.

1 Q There are a lot of nooks and crannies
2 in there?

3 A There are some.

4 Q Do you have any idea, sir, how much
5 asbestos Mr. Shifflett breathed in when he was
6 blowing the dust off of the brake assemblies using
7 his lung power?

8 A Again, I believe it would be very
9 little because, number one, you don't get much air
10 using your mouth. That just isn't a very efficient
11 mechanism for removing debris. And, again, I
12 measured exposure using compressed air, and it was
13 still low.

14 Q You would agree it would take a number
15 of breaths to clean out a brake assembly if you were
16 blowing with your lungs, wouldn't you?

17 A I would just think it would be a very
18 inefficient way to do it.

19 Q Okay. And you would agree, sir, it
20 would take a number of breaths to do that?

21 A I would think you could use a number of

1 breaths.

2 Q All right. And after you did the first
3 breath, when you took in the next big breath so you
4 could get a good blow on the brake assembly, how
5 many asbestos fibers would Mr. Shifflett have
6 inhaled when he took that big breath in?

7 A Well, again, after he blew, he
8 certainly may have moved his head back. And it's
9 certainly possible that when he inhaled, again,
10 because of the fact that the velocity or -- the
11 amount of air exhaled and the velocity wouldn't have
12 been that high, it's certainly possible that he
13 breathed very little asbestos, especially when you
14 know that there is so little asbestos in the dust to
15 begin with. So it's certainly possible he breathed
16 very little, if any.

17 Q What measurements have you seen of
18 anybody testing that?

19 A Again, I have done the studies where
20 compressed air was used, and the exposures were not
21 high.

1 Q What measurements, sir, have you seen
2 on how much asbestos dust is released when placing
3 your face close enough to a brake assembly to blow
4 dust off with your own breath and how much dust is
5 released into the breathing zone of the individual?

6 A I have never seen a study where a
7 measurement was taken where someone was actually
8 attempting to remove debris by blowing. But from
9 the analysis I just provided, I believe that such a
10 situation would not result in a harmful level of
11 exposure.

12 Q Now, sir, when drum brake systems were
13 using asbestos-containing brake shoes, was there any
14 way to take the drum off without releasing some
15 asbestos into the air?

16 A Well, again, I don't know of any way to
17 really -- I mean, there are containment systems that
18 were made to capture any dust emitted. But, again,
19 if you aren't using those and you are removing a
20 drum, some dust will get in the air.

21 But it's important to remember just how

1 little asbestos, especially asbestos -- free
2 asbestos fibers where the fibers are greater than
3 five microns in length, how little is present in
4 that dust.

5 Q And all of the historical measurements
6 by phase contrast microscopy done under the OSHA
7 counting rules, the only fibers that are getting
8 counted are longer than five microns, correct?

9 A Yes.

10 MR. RUCKDESCHEL: Okay. I don't have
11 any more questions for you.

12 MR. KRAUSE: Anything further?

13 MR. OLIVER: I am done, too.

14 (Deposition concluded at 4:53 p.m.)

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1 State of Maryland

2 Harford County

3 I, Denise M. Thomas, a Notary Public of the
4 State of Maryland, Harford County, do hereby
5 certify that the within-named witness personally
6 appeared before me at the time and place herein set
7 out, and after having been first duly sworn by me,
8 according to law, was examined by counsel.

9 I further certify that the examination was
10 recorded stenographically by me and this transcript
11 is a true record of the proceedings.

12 I further certify that I am not of counsel
13 to any of the parties, nor an employee of counsel,
14 nor related to any of the parties, nor in any way
15 interested in the outcome of the action.

16 As witness my hand and seal this 9th day
17 December, 2009.

18
19 Denise M. Thomas

20 My Commission Expires 7-21-10.

21

INDEX

Deposition of Sheldon H. Rabinovitz, Ph.D., C.I.H.

December 7, 2009

EXAMINATION BY:	PAGE
Mr. Ruckdeschel	5, 128
Mr. Oliver	114

EXHIBIT	DESCRIPTION	PAGE
1	List of testimony	6
2	Notices of Deposition	7
3	Curriculum vitae	8
4	Shifflett report	17
5	Rehrig report	17

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1 ERRATA AND SIGNATURE SHEET

2 I, SHELDON H. RABINOVITZ, Ph.D.,
3 C.I.H., have read the foregoing and verify the same
4 to be stenographically accurate with the exception
5 of the following changes (if any):

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18 () I have no corrections.

19
20 _____

21 Signature of Deponent