

SUPERIOR COURT OF CALIFORNIA
COUNTY OF SAN FRANCISCO

-----X
ALAN HARVEY et al., :
 :
 Plaintiffs, :
 :
 v. : No. 312112
 :
 ABB LUMMUS GLOBAL, INC., et al., :
 :
 Defendants. :
-----X

Washington, D.C.

Thursday, May 2, 2002

Deposition of

RICHARD THOMAS

a witness, called for examination by counsel for
Plaintiffs, pursuant to notice and agreement of
counsel, beginning at approximately 1:05 p.m., at
the law offices of Jones Day Reavis & Pogue, 51
Louisiana Avenue, Northwest, Washington, D.C.,
before Shari R. Broussard of Beta Reporting &
Videography Services, notary public in and for the
District of Columbia, when were present on behalf
of the respective parties:

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C O N T E N T S

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EXAMINATION BY:	PAGE
Counsel for Plaintiffs	4
THOMAS DEPOSITION EXHIBITS:	
No. 1 - Disclosure of Expert Witnesses	12
No. 2 - Curriculum Vitae	12

* * * * *

P R O C E E D I N G S

Whereupon,

RICHARD THOMAS

was called as a witness and, having been
first duly sworn, was examined and testified
as follows:

EXAMINATION BY COUNSEL FOR PLAINTIFFS

BY MR. PURCELL:

Q Would you state your full name for
the record, please?

A It's Richard Dean Thomas.

Q What's your current business
address?

A 1307 Dolly Madison Boulevard,
McLean, Virginia.

Q Your business phone?

A (703) 734-1454.

Q I take it that you are you
familiar with the deposition format; is that
fair to say?

A Yes.

Q I believe that to be the case and

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1 so I'm going to dispense with the typical
2 admonitions, Dr. Thomas, except just to
3 remind you that even though we are
4 informally gathered here at the Jones Day
5 office in Washington, D.C., the oath that
6 you just had administered to you by the
7 reporter to tell the truth, the whole truth
8 and nothing but the truth in response to all
9 of my questions here today has the same
10 force and effect as the oath you would give
11 in a court of law to do the exact same
12 thing. You fully appreciate all of that, do
13 you not?

14 A Yes.

15 Q Dr. Thomas, when were you retained
16 in the Alan Harvey matter?

17 A The beginning of this year in
18 January.

19 Q Who retained you?

20 A It was Jones Day, I think Dennis
21 Murphy actually was the contact with me and
22 Paul Reyerson also talked with me about it.

1 Q Did you understand both of them to
2 be calling on behalf of a particular
3 company?

4 A Yes, I did.

5 Q What company?

6 A R.J. Reynolds Tobacco.

7 Q Do you have any understanding that
8 any other company has retained you in this
9 case?

10 A I don't have any understanding of
11 any other company that maybe retained me.
12 My understanding is I work for Jones Day
13 through -- through their contract or the
14 work they're doing for R.J. Reynolds.

15 Q To your knowledge, for example,
16 you are not here on behalf of attorneys who
17 represent Philip Morris in any way, correct?

18 A As far as I know, that's correct.

19 Q Do you have a current CV handy?

20 A I actually turned one in. I think
21 it was transmitted. I didn't bring it with
22 me.

1 MR. MURPHY: Gil, I have copies of
2 that that I brought and I also have a copy
3 of the transmittal of the CV to your office.

4 MR. PURCELL: Yeah, I didn't --

5 MR. MURPHY: That's the same
6 letter that had the 12:30 start time
7 confirmation.

8 MR. PURCELL: I didn't receive
9 this, but may I have a copy of this at some
10 point today?

11 MR. MURPHY: Yeah, I think you can
12 actually keep that one. We've got, you
13 know, the faxed copy that was sent to your
14 office and I think if you need us to work
15 off of that, we can probably do that.

16 BY MR. PURCELL:

17 Q Doctor, counsel has been kind
18 enough to hand me a 20-page document
19 entitled, "Dr. Richard Thomas Curriculum
20 Vitae." I'm going to hand that to you for a
21 moment. Is that a true and correct and
22 accurate copy as of April of this year?

1 A Yes, as far as I'm aware.

2 Q Have you prepared any written
3 reports in the Harvey matter?

4 A No, I have not.

5 Q Do you have any handwritten notes
6 that you've taken when you've reviewed any
7 materials in the case?

8 A No.

9 Q Have you brought with you a file
10 in the case?

11 A Yes, I have.

12 Q Is that what's before you?

13 A That's what I have here.

14 Q May I see that?

15 A Sure. That's just a blank piece
16 of paper.

17 Q You've handed me a manilla folder
18 about a quarter inch thick titled, "Harvey
19 deposition, Jones Day office, WDC, 2002."
20 Is this your complete file in the so-called
21 Harvey matter?

22 A Yes, it is.

1 MR. MURPHY: I mean to be clear,
2 we've got some other materials that we
3 brought in response to the deposition
4 notice, so I just want to make sure that
5 whatever the definition of file is, there
6 are other materials here.

7 MR. PURCELL: Sure.

8 BY MR. PURCELL:

9 Q This file contains the disclosure
10 of expert witnesses from the Shook Hardy
11 firm in this case, the pages specific to
12 Dr. Thomas pages 18 and 19, the Notice of
13 Deposition in our case, an invoice dated
14 April 8, 2002 directed to Mr. Reyerson at
15 Jones Day, a summary of testimony. I take
16 it this would be a summary of depositions
17 and trials you've testified in?

18 MR. MURPHY: I'm going to object
19 at that point because you listed a lot of
20 things and you made a characterization about
21 the disclosure of experts being from the
22 Shook Hardy firm. It's my understanding

1 that's on behalf of Philip Morris and R.J.
2 Reynolds.

3 MR. PURCELL: Yes, it is. It's on
4 the Shook Hardy letterhead.

5 MR. MURPHY: I just wanted to make
6 sure it was clear that was just a Philip
7 Morris disclosure.

8 BY MR. PURCELL:

9 Q This page here, "Richard D. Thomas
10 Trial Deposition Testimony," is that a
11 complete list of the depositions and trials
12 you've given in tobacco?

13 A That's a recent list. It looks
14 like that's '98 through 2002.

15 Q Then a document entitled, "Expert
16 Witness Report References," which is 14
17 pages long. What is this part of your file,
18 doctor?

19 A That's a list of references that I
20 had put together recently of -- that cover
21 many of the topics that we'll be talking
22 about in this particular case.

1 MR. MURPHY: Gil, I don't want to
2 jump in and offer too much, but maybe it
3 will help out that in response to the
4 deposition notice it had asked for some
5 things that Dr. Thomas didn't have
6 necessarily for this case, but he has done
7 federal reports in the past that called for
8 both lists of testimony and somewhat lists
9 of reliance materials and so we actually
10 helped him take that information and get it
11 to you for this case since you asked for it.
12 In other words, there was no existing lists
13 simply listing testimony. We pulled it out
14 of a federal report.

15 MR. PURCELL: That's fine and
16 thank you. What I'd like to do is mark this
17 entire file as Exhibit 1 and attach a copy
18 of it to the deposition and mark his CV as
19 Exhibit 2, attach a copy of it to the
20 deposition. I'm sure we can make
21 arrangements for that later.

22 (Thomas Deposition Exhibit

1 Nos. 1 and 2 were marked for
2 identification.)

3 BY MR. PURCELL:

4 Q Let me ask you, doctor, about your
5 invoices, part of Exhibit 1 there appears to
6 be an invoice number 7281 for \$49,050.40
7 dated in March of this year and a second
8 invoice 7282 for 40,660.67. Are these your
9 only invoices, these two, generated in the
10 case thus far?

11 A Yes.

12 Q You've reviewed your designation
13 of the areas you would likely testify in
14 this case?

15 A Yes.

16 Q Is it accurate?

17 A Yes.

18 Q Is there any area generally that
19 is not mentioned in the designation that you
20 believe you will also testify to?

21 A Why don't I look at the
22 designation out of the folder and -- I

1 don't -- I think the designation pretty well
2 describes the general areas that I would
3 expect to testify in. I don't see -- I
4 can't think of any additional areas that are
5 not included in here.

6 Q Put that back in there if you
7 would.

8 A Okay.

9 Q If I understand your background
10 correctly, you began testifying or working
11 with attorneys for R.J. Reynolds
12 approximately 1985?

13 MR. MURPHY: Objection. Vague and
14 compound.

15 THE WITNESS: I actually started
16 working in answering some questions for
17 attorneys that worked for Jones Day
18 about '84, possibly even '83, so it's --
19 it's approximately the right time frame, but
20 it's a little bit earlier.

21 BY MR. PURCELL:

22 Q Could you indicate for me exactly

1 how that came about, that type of work?

2 A I was approached by Mr. J.C.
3 McElveen, who worked for Jones Day here in
4 the Washington office, who asked me if I
5 would be willing to review some scientific
6 papers for him that dealt with lung cancer
7 and experimental issues involving toxicology
8 and pathology and provide him some opinions
9 about how well the studies were done and so
10 forth.

11 Q Had you worked with him
12 previously?

13 A No.

14 Q What's your understanding of how
15 he came to know of you?

16 A Well, he indicated in the
17 conversation that he had been looking for
18 experts or an expert in this area, that he
19 had talked with several other scientists
20 that he knew both in the Federal Government
21 and outside the Federal Government, at
22 universities, for example, and my name had

1 been repeatedly recommended to him.

2 Q Did he enumerate more specifically
3 what exactly he wanted you to do in any kind
4 of writing?

5 MR. MURPHY: Let me just object
6 and it's more a caution. I mean I think
7 this question is fine, but I don't want to
8 go too far into matters that might be, and I
9 don't think we're there yet, but matters
10 that might be consulting and not testimonial
11 expert work, so I just want to caution that
12 we may be getting there and at some point
13 we'll cut it off. But I tink the question
14 is okay.

15 BY MR. PURCELL:

16 Q You may respond.

17 A Can you ask the question again?
18 What was your question?

19 Q Did he ever enumerate more exactly
20 what he wanted you to do in writing?

21 A It's been some years ago, but not
22 that I remember. In the '84 time frame that

1 we're talking about he would typically call
2 and say that he wanted me to take a look at
3 a reference, did I have a copy of it and
4 often I did, so I would take a look at the
5 reference and then talk with him further.

6 Q In that first discussion did he
7 broach the topic of going through a
8 historical review of literature in any way?

9 A No.

10 Q When did that task first arise?

11 A Well, I don't -- again, I don't
12 know the exact dates. My best estimate
13 would be probably around 1987 that rather
14 than looking at one or a few individual
15 scientific references, I was asked to look
16 at a whole field of research.

17 Q How did he communicate the field
18 of research he wanted you to review?

19 A As I remember right, it was,
20 again, verbally by telephone or possibly in
21 a meeting.

22 Q How did he describe the field to

1 you?

2 A I don't know how he described the
3 field. It's been too long ago. We're
4 talking about over, certainly over 15 years
5 ago. I specialize in cancer research and in
6 not only understanding ways of treating
7 cancers to try to cure the cancers, but
8 mechanisms that may cause cancer and so
9 usually his questions were in those areas of
10 my current research.

11 Q Was he in any way more particular
12 to your recollection?

13 A Not to my recollection. Like I
14 say, there -- the area of research involves
15 use of laboratory animals, it involves the
16 use of humans in epidemiologic and clinical
17 studies and to the best of my recollection
18 there was a discussion and we looked at
19 several of those.

20 Q Do you regard yourself to be
21 expert in the field of epidemiology?

22 A Yes, I do.

1 Q More specifically would that
2 include cancer epidemiology?

3 A Yes.

4 Q More specifically still would that
5 include the epidemiology of asbestos-related
6 diseases to occupationally exposed workers?

7 A I haven't done as much work on --
8 for several years on asbestos as I have on
9 some other substances such as tobacco and
10 then metal and air pollution and some of
11 those types of materials, but I'm familiar
12 with the asbestos literature and some of the
13 issues surrounding asbestos.

14 Q Do you believe there to be a
15 synergistic effect in terms of cancer risk
16 between occupational exposure to asbestos
17 and cigarette smoking?

18 A From the research studies that
19 I've examined, this has been an area that
20 has been debated, but it appears there is
21 not a synergistic effect between the two.

22 Q What article or research do you

1 base that view on?

2 A Well, they -- the asbestos
3 literature goes back some time, certainly
4 back to Irving Selikoff, back to some of the
5 work that was done in Europe, so there is a
6 long history of -- of research in this area.
7 Specifically on synergism, I believe that
8 Selikoff was the first one in his 1968
9 publication that proposed there may be a
10 synergistic effect between cigarette smoke
11 and asbestos exposure from an occupational
12 standpoint.

13 There was some difficulty in
14 replicating those studies and in about 1978
15 Hammond and Selikoff were able to replicate
16 most of the findings in Selikoff's earlier
17 study, however, many of the studies such as
18 the Linde study and several of the more
19 recent studies that have looked at this
20 issue, including the National Academy of
21 Sciences, have found that, from an
22 epidemiological standpoint looking at

1 relative risks, that the effects are either
2 additive or at most multiplicative but not
3 synergistic.

4 Q What National Academy of Sciences
5 article or publication are you referencing
6 that would say that?

7 A Well, the National Academy has
8 done several. The one that I worked on, was
9 most involved in was the one that's called,
10 "Nonasbestos Form Fibers." It was published
11 in about 1994, as I remember. It's in the
12 list of publications on my CV.

13 Q Could you locate that on
14 Exhibit 2?

15 A Sure. I don't see it right off in
16 here. The other one that dealt with the
17 same issues as the carcinogenic mixtures,
18 which deals with exposure to mixtures and
19 materials and also references the
20 nonasbestos form document, and that's
21 in 1992 and that was also done at the
22 National Academy of Sciences.

1 Q Could you give me an entry number
2 or page where that's referenced?

3 A I'll give you a page number. It's
4 on page 18, or page 19, I'm sorry, and it's
5 called, "Carcinogenic Mixtures."

6 Q Do you remember anything about the
7 National Academy of Sciences' reference,
8 title, anything that would help us locate
9 it?

10 A Oh, it's -- like I say, it's
11 probably in this list here. If not, it's --
12 it may be in this other list that's in here.
13 Like I say, it's called, "Nonasbestos Form
14 Fibers." That's the title of it.

15 The first reference as to complex
16 mixtures is actually on page 17 and that's
17 the one that specifically deals with
18 asbestos and there's a discussion of
19 cigarette smoking in there and that's 1988.

20 Q To be clear, I'm interested in the
21 references that would tell me that there are
22 additive and multiplicative effects not

1 exponential synergistic effects as between
2 occupational exposure to asbestos, clinical
3 asbestosis and/or cigarette smoking.

4 MR. MURPHY: I just have an
5 objection because I think it's vague from
6 where we started. Do you mean any article
7 or the article on his CV or the articles in
8 his disclosure?

9 BY MR. PURCELL:

10 Q The articles he's relying upon for
11 his testimony in that regard.

12 A I would say a good representative
13 article is, "Complex Mixtures: Methods for
14 In Vivo Toxicity Testing," page 17, halfway
15 down the page.

16 Q For the record that's page 17 of
17 Exhibit 2?

18 A Uh-huh.

19 Q Doctor, you've taken a few minutes
20 to continue looking. Are you able to find
21 anything else?

22 A Well, several of these deal with

1 that conclusion in that that's a pretty
2 widely-accepted conclusion in the scientific
3 community now, but I think one of the best
4 analysis that have been done is in the
5 "Nonasbestos Form Fibers" document or in
6 this "Complex Mixtures" document that I've
7 mentioned on page 17.

8 Q Are there any other articles that
9 come to mind that will tell me that?

10 A Well, I didn't really prepare on
11 asbestos to discuss those types of
12 interactions today, but like I mentioned
13 the 1999, I believe it's the Lindde article
14 that's been published deals with it in some
15 detail. There have been several authors
16 that have looked at the interactions over
17 the years, particularly in the last few
18 years, and have come to the same conclusion.

19 Q Name three authors that you
20 believe come to the same conclusion.

21 A Well, besides the National Academy
22 of Sciences, Lindde is another one, I

1 believe Hans Peter Weitchi has published in
2 this area as well.

3 Q Again, the question is more
4 specific. Not that someone has published in
5 the area, but someone who has published data
6 or the opinion that you just articulated.

7 A Well, like I say, there have --
8 there have been -- put down Hans Peter
9 Weitchi, David Rimsky. You had asked for
10 three. I think that's three. National
11 Academy of Sciences. The Environmental
12 Protection Agency is another agency that's
13 reviewed it and has come to the same
14 conclusions.

15 Q Where does the EPA indicate
16 there's not synergy?

17 A I'd have to go back and look at
18 their report. I can't tell you right now
19 off the top of my head. It's probably in
20 the regulatory recommendations for the
21 standard.

22 Q What standard?

1 A Well, EPA has tried to come up
2 with a standard and -- and basically has
3 come to the conclusion that no -- their
4 recommendation is that no level of asbestos
5 exposure is safe and they have justification
6 for that.

7 Q When you say "the standard"
8 though, what are you referencing
9 specifically?

10 A I'm referencing the publication of
11 federal registry that EPA has discussed
12 asbestos.

13 Q What do they describe the standard
14 as that you're referencing?

15 A They say that no exposure to
16 asbestos is safe. I guess you can say that
17 that standard is zero, if that's what you're
18 asking.

19 Q Is that your opinion?

20 A But that's not -- that's not
21 exactly what they said.

22 Q Do you agree with that? Is that

1 your opinion?

2 A No, I don't agree with that.

3 Q What level of exposure to asbestos
4 occupationally is safe?

5 A I don't think we know what level
6 is safe, as -- as you put it. I do know
7 that we're all exposed on a day-to-day basis
8 to small amounts of asbestos and we're not
9 going to either have the effects of the
10 asbestos such as the fibrosis occur in our
11 lungs or are we going to get cancer from it.
12 So the way EPA deals with a standard where
13 they figure no level is safe, then the level
14 is based on limited detection of the
15 instrumentation and so that's how they said
16 it. If the level of detection is set at,
17 say it's set at .01 fibers per cubic
18 centimeter, then that would be the level
19 that they would measure to.

20 Q Getting back to my question, do
21 you have an understanding that the EPA
22 believes .01 fiber per cc is a safe level of

1 exposure of asbestos in the work place?

2 A That's not what I said, no.

3 Q Do you believe .01 fibers per cc
4 poses any significant risk to
5 occupationally-exposed workers?

6 A I don't know that I could answer
7 your question. Like I say, I haven't
8 reviewed asbestos in sufficient detail for
9 this deposition to try to -- to address
10 occupational exposures per se.

11 Q Do you know what the Federal OSHA
12 position on that is?

13 A From memory I believe Federal OSHA
14 position is .1 fibers per cubic centimeter.

15 Q If that's the case, what do they
16 say about exposures at that level in terms
17 of risk?

18 A Well, that's the level that they
19 have set for an 8-hour day for a 40-hour
20 week and they're saying that that level is
21 safe or acceptable.

22 Q Do they say that it poses a

1 significant risk to workers?

2 A I don't know. I'd have to go back
3 and look at the -- like I say, I haven't
4 done that before this deposition. That's
5 just based on my memory. It may be .01, but
6 I think it's .1.

7 Q Whether it's .1 or .01 fibers per
8 cc, do you subscribe to that view, that
9 exposures at that level poses a significant
10 risk to workers?

11 A I don't know. I haven't looked at
12 it for some time. I would have to think --

13 Q Well --

14 A I'm sorry. If I could finish.
15 I'd have to think about what the actual
16 levels are that were exposed on a day-to-day
17 basis and then look at the epidemiologic
18 studies to determine whether I see an
19 increase in the risk of either fibrillolytic
20 changes in the lung or the development of
21 cancer and -- and decide for myself what I
22 think is safe and I haven't done that.

1 Q I thought you had finished your
2 answer. You lowered your voice. I
3 apologize.

4 A Okay.

5 Q Is that an aspect of risk
6 assessment in the Harvey case as to which
7 you're not going to be offering opinions?

8 A I'm going to be talking about the
9 risks that Mr. Harvey would have from
10 asbestos exposure occupationally based on
11 the epidemiologic studies that I've reviewed
12 in addition to other types of risk factors.

13 Q Focusing on that, then, I presume
14 you're prepared to talk about that in
15 Harvey's case, correct?

16 A Yeah, about the risk factors that
17 Mr. Harvey would have.

18 Q What's the incidence of idiopathic
19 malignant mesothelioma in the United States?

20 A I don't know, not off the top of
21 my head. Like I say, I haven't reviewed
22 that before this.

1 Q In your earlier answer where you
2 believed everybody suffers some background
3 level of exposure to asbestos and none of us
4 are going to get cancer from it, did you
5 include in that mesothelioma?

6 MR. MURPHY: Objection to the form
7 of the question.

8 THE WITNESS: I don't think I even
9 understand your question. If you want to
10 restate it. It seemed like to me you're
11 going from a very vague answer to a very
12 specific conclusion and I don't understand
13 what you're trying to ask.

14 BY MR. PURCELL:

15 Q I'm trying to ask you if you
16 intended to include mesothelioma in your
17 opinion that nobody is going to suffer
18 cancer from background exposure levels to
19 asbestos that you believe everyone suffers.

20 A You know, again, that's a very
21 vague question and you're mixing
22 mesothelioma and cancer and those are

1 actually two different diseases. We do have
2 a certain amount of spontaneous disease in
3 the population, although diseases such as
4 mesothelioma are fairly rare.

5 Q Doctor, I assure you I'm not
6 mixing up anything about those diseases.
7 What I want to know is did you include
8 malignant mesothelioma in your prior answer,
9 yes or no?

10 A I don't know what -- what you're
11 referring to now. What prior answer? That
12 people in the United States have a risk of
13 developing lung cancer?

14 Q I'll try and be very clear again.
15 Earlier you allowed as how in your view
16 everybody suffers a background level of
17 exposure to asbestos and yet in your view
18 none of us, I believe was your phrase, will
19 ever get cancer from it. Do you recall
20 that?

21 MR. MURPHY: Objection to the
22 form.

1 THE WITNESS: What I said was that
2 statistically, based on a very low level of
3 background exposure, that, statistically,
4 none of us will get lung cancer from
5 asbestos. That doesn't mean that there
6 isn't a small proportion that may develop
7 some spontaneous disease, which may have
8 been tied either indirectly or directly to
9 the asbestos. So generally we're exposed to
10 a lot of different substances that are
11 carcinogenic, including asbestos, including
12 chemicals such as vinyl chloride even in
13 this room, and we're not statistically going
14 to develop disease from that.

15 BY MR. PURCELL:

16 Q If I understood you now, you were
17 intending to address your earlier remark
18 just to lung cancer and not toward malignant
19 mesothelioma; is that correct?

20 A I'm talking about the development
21 of lung cancer, yes.

22 Q Thank you. Would that be true for

1 all major histologic types of lung cancer?

2 A Would what be true?

3 Q Your view about risk of lung
4 cancer from background exposures.

5 A I don't know what view you're
6 characterizing other than we know that
7 there's a background exposure to a lot of
8 different substances and we have a,
9 generally, small background of people who
10 get lung cancer but most people don't.
11 That's my view. I don't know what you're
12 characterizing, if you're characterizing
13 that different than that, but that's what my
14 view is.

15 Q Do you believe that secondhand
16 smoke has been demonstrated to be a risk
17 factor for lung cancer?

18 A No.

19 Q What's the highest relative risk
20 or SMR you've seen reported?

21 A For SMR?

22 Q For secondhand smoking.

1 A For secondhand smoking.

2 Q Lung cancer risk.

3 A The typical levels that I see
4 reported are between 1.1 and 1.4. The
5 higher levels tend to be around 1.4.

6 Q What levels would you need to see
7 for you to believe a risk has been
8 established?

9 A I typically like to see levels
10 that are twice backgrounds, so until I see
11 risks that are approaching at least two,
12 which is twice background, I'm not convinced
13 that they're not simply a statistical
14 anomaly.

15 Q Do you get a magazine called
16 "Chemical Week"?

17 A Yeah, I think that's one that I
18 receive.

19 Q For how long have you received
20 that?

21 A I couldn't tell you, it's. Been
22 for several years.

1 Q What trade organization is behind
2 that journal, if you know?

3 A I think that that's American
4 Chemical Society, but I'm not sure.

5 Q Are you a member of that society?

6 A Yes.

7 Q Your Ph.D. is in chemistry,
8 correct?

9 A That's correct.

10 Q In your assessment what are the
11 top five most hazardous chemicals in R.J.
12 Reynolds products, tobacco products?

13 MR. MURPHY: Objection to the
14 form.

15 THE WITNESS: The top five
16 hazardous products?

17 BY MR. PURCELL:

18 Q Most hazardous chemicals.

19 A I don't know how you're defining
20 "hazardous" because it's defined differently
21 depending on which agency we're talking
22 about. I think I'll take my jacket off.

1 Q How do you define "hazardous,"
2 doctor?

3 A Well, I define it differently
4 depending on whether I was doing project
5 work for EPA or for Food & Drug
6 Administration or the World Health
7 Organization to try to answer your question.

8 Q Well, let's use the WHO
9 definition.

10 A Well, typically "hazardous" is
11 where a material is tested first in
12 laboratory animals and shows an increase of
13 either one or several diseases in what's
14 called a dose response curve that supports
15 that increase. If that occurs, then that
16 material is called hazardous and it can be
17 ranked based on its relative hazard compared
18 with other materials.

19 Q Using the WHO definition of
20 hazardous, what are the five most hazardous
21 chemicals in R.J. Reynolds tobacco products?

22 MR. MURPHY: Objection to the

1 form.

2 THE WITNESS: You'd have to tell
3 me which definition you want to use in WHO.
4 WHO actually has different ones as well.

5 BY MR. PURCELL:

6 Q Would that change which of the
7 chemicals would be the top five?

8 A Yes, it would.

9 Q Give me an example.

10 A Well, isoflavones, for example,
11 are found in plant material and are found in
12 tobacco. Isoflavones may or may not produce
13 tumors in laboratory animals. For example,
14 in one test you may get tumors produced, in
15 another test renal tumors especially, in
16 another test you may not. So if the
17 definition is that two animal species are
18 required to show hazard, then one would say
19 it was not hazardous and then if another one
20 says only one animal species is required,
21 then they would define it as being
22 hazardous. So you need to -- you need to

1 have a definition and also the ranking of
2 relative hazard. You know, are we talking
3 about the most hazardous, the least
4 hazardous. Water is hazardous, but it's not
5 a high hazard.

6 Q Can you give me an example, as you
7 understand it, of working WHO definitions of
8 hazardous that would take a chemical out of
9 the top five most hazardous chemicals in
10 R.J. Reynolds products?

11 MR. MURPHY: Objection to the form
12 of the question.

13 THE WITNESS: Yeah, I don't -- do
14 you want to restate that? I think you've
15 got two double negatives -- you've got two
16 negatives. I don't understand what you're
17 asking me now.

18 BY MR. PURCELL:

19 Q Let me ask it this way then so
20 it's clear: Give me the top five most
21 hazardous chemicals in R.J. Reynolds
22 tobacco products under any WHO definition.

1 MR. MURPHY: I have the same
2 objection to the form.

3 THE WITNESS: You want to be more
4 specific as to what you're referring to as
5 "products"?

6 BY MR. PURCELL:

7 Q Cigarettes.

8 A So you're going to call all
9 cigarettes products?

10 Q Sure.

11 A You're -- it's very difficult to
12 try to answer your question. I'm trying to
13 answer it because hazard doesn't tell you
14 anything about whether it's going to produce
15 a toxic effect. That's based, again, on the
16 dose and -- because, generally, in
17 cigarettes, it varies from cigarette to
18 cigarette, there are several hundred to, in
19 fact, several thousand substances, many of
20 which have been classified, for example mas
21 carcinogens, but they're at very low
22 concentration. So from the hazard

1 standpoint they're carcinogens, but the
2 exposure is very low. So it's -- it's
3 actually quite hard to answer your question
4 because I'm -- without combining hazard with
5 exposure, you don't really have a risk, so
6 you typically don't judge things based on
7 hazard, you judge them based on what risk
8 they pose.

9 Q Let me ask you then to enumerate
10 the top five in terms of risk.

11 MR. MURPHY: I object if that's
12 the end of the question and it's vague and
13 ambiguous.

14 THE WITNESS: Yeah, could you tell
15 me which risk you're talking about?

16 BY MR. PURCELL:

17 Q Relative risk for lung cancer.

18 A Well, the problem with cigarettes,
19 and I'd like to answer your question, but
20 the problem with cigarettes is we don't know
21 the answer to that as yet and that's why,
22 for example, it's very difficult if -- to

1 design a safer cigarette because we don't
2 know quite what to reduce in a cigarette.
3 If you use common sense and you say, well,
4 the amount of tar in the cigarette is in
5 some way related to the level of lung
6 cancer, then by reducing the tar, common
7 sense would tell you that you're reducing
8 the risks, but since we don't know what in
9 cigarette smoke may be causing an increase
10 in lung cancer in humans, I don't know how
11 to answer your question because that's not
12 known.

13 Q Is tar a chemical?

14 A Tar is a mixture of chemicals.

15 Q My question asked for chemicals.
16 Does that help you in your ability to answer
17 my question?

18 A No, it doesn't help because,
19 again, it's based on the concentrations of
20 the chemical to understand risk and in
21 cigarette smoke we haven't been able to
22 identify a specific chemical or five

1 chemicals that explain an increase in lung
2 cancer in humans.

3 Q When did R.J. Reynolds first try
4 to reduce any chemical in their cigarette
5 products?

6 A Yeah, I don't know the answer to
7 that. I don't know the internal workings of
8 how RJR designed their products and when
9 they decided to, say, try to reduce tar in
10 cigarettes.

11 Q Is nicotine a chemical?

12 A Yes.

13 Q When did R.J. Reynolds first try
14 to reduce nicotine in their products?

15 A I don't know.

16 Q In April of 1999 you were asked
17 about whether or not you had requested that
18 you be provided with internal company
19 documents and in the Engle case you
20 testified that you had not been provided any
21 internal Reynolds company documents nor had
22 you asked to be provided any internal R.J.

1 Reynolds company documents, what I'd like to
2 ask you is have you since asked to be
3 provided those or been provided those?

4 MR. MURPHY: Objection to the
5 form.

6 THE WITNESS: First of all, you're
7 characterizing something that I may have
8 said in testifying in Engle and I'm not sure
9 that that's accurate. I think --

10 BY MR. PURCELL:

11 Q Is there some doubt in your mind
12 about that?

13 A No, I think, though, the way to
14 answer your question, and I assume the
15 context that that was in was I for the Engle
16 case or did I during the Engle case ask to
17 see internal company documents and the
18 answer is no.

19 Q Have you since then?

20 A I have not seen internal company
21 documents except as part of trial exhibits
22 that were being used by plaintiffs in a

1 trial that I was testifying in, but I
2 haven't received company documents separate
3 from that.

4 Q I understand. I appreciate that
5 clarification. Other than what documents
6 you may have been shown during trials, have
7 you ever asked to have access to all
8 in-house or internal company documents from
9 R.J. Reynolds concerning risks of tobacco
10 smoke?

11 A No, I've not.

12 Q Do you have any intentions of
13 doing that as you sit here today?

14 A No.

15 Q What have you reviewed in the
16 Harvey matter?

17 A The materials that are in the box
18 that I brought based on the request that you
19 provided.

20 Q What is included in the box?

21 A These are medical records,
22 depositions, some associated records.

1 There's some insurance records, there are
2 some expert reports. That's pretty well
3 what's in the box.

4 Q Is everything in the box
5 everything that you reviewed specific to the
6 Harvey case?

7 A Everything that I received to
8 review specific to the Harvey case is in the
9 box.

10 Q Are there any notes on any of the
11 documents in the box?

12 A Not from me.

13 Q Do you dispute any of the medical
14 diagnoses in the case?

15 A Again, that's kind of vague. I'm
16 not quite sure how to answer that in that
17 there were somewhat different diagnosis that
18 were given from time to time. I mean
19 there's -- there's some inconsistencies in
20 the medical records themselves, so I have
21 looked at the pathology myself on Harvey and
22 come to the conclusion as to what I think

1 pathology describes and I think it's
2 consistent with what most of the physicians
3 that treated him, you know, diagnosed him as
4 having.

5 Q What would that be?

6 A Adenocarcinoma of the lung.

7 Q Have you formed any opinion as to
8 the causes of his adenocarcinoma of the
9 lung?

10 A Well, I tend to talk less about
11 causes and what the risks are or the things
12 that may have been a cause statistically,
13 but I have come to a conclusion about things
14 that he was exposed to that would be a risk
15 for him developing adenocarcinoma of the
16 lung.

17 Q I want to be clear. Is it true or
18 is it not true as to whether you are going
19 to be offering an opinion as to the causes
20 of his adenocarcinoma of the lung?

21 MR. MURPHY: Object to the form.

22 THE WITNESS: I think as stated in

1 the disclosure, all the things I'm going to
2 describe are the risk factors associated
3 with the development of the disease.
4 Whether you want to define that as cause or
5 not, that's up to you, but those are
6 typically how scientists refer to this
7 information and that's how I'll be
8 testifying.

9 BY MR. PURCELL:

10 Q Actually the first enumerated
11 numerical item in your designation says,
12 "Causation of cancer," et cetera. Are you
13 going to be speaking about the causation of
14 Mr. Harvey's cancer?

15 A To what -- to whatever extent we
16 understand it. I'm just looking for --
17 here's the disclosure.

18 Yes, as indicated in the
19 disclosure, I'll be talking about the
20 causation of cancer, mechanisms by which
21 cancer develops, that scenario that I
22 specialized in for over 25 years.

1 Q What were the causes of
2 Mr. Harvey's adenocarcinoma of the lung in
3 your opinion?

4 A Well, as indicated in the
5 disclosure, the general risk factors
6 associated with the development of disease
7 including lung cancer include the
8 occupational exposures and environmental
9 exposures, lifestyles, family history, and
10 those are the types of areas that I will be
11 talking about for Mr. Harvey and will be
12 describing the risk factors associated with
13 those.

14 Q Risk factors are different than
15 causation, correct?

16 A Well, yeah, causation is a very --
17 that's true, causation is a very vague term
18 that means a lot of different things. Risk
19 factor is a statistical term that relates it
20 more directly to a compilation.

21 Q I'll be happy to move on if you
22 indicate you are not going to be testifying

1 about causation or the causes of
2 Mr. Harvey's adenocarcinoma of the lung
3 recognizing you intend to speak about risk
4 factors for his lung cancer.

5 MR. MURPHY: Objection to the form
6 of the question.

7 THE WITNESS: The way you have
8 stated it risk factors describe for us the
9 various aspects of how a disease may have
10 been caused, so from that standpoint I will
11 talk about Mr. Harvey about how his disease
12 may have been caused.

13 BY MR. PURCELL:

14 Q What were the causes of
15 Mr. Harvey's lung cancer in your opinion?

16 A Well, again, I -- I will describe
17 his occupational exposures.

18 Q To what?

19 A He -- well, he -- first he had
20 various positions, but he worked on a
21 diesel-powered submarine in the engine room
22 for approximately two years, of which he had

1 asbestos exposure, had probably exposure to
2 diesel and some other fumes as well. In
3 fact, it's noted in the depositions that he
4 had those exposures. Then he worked for
5 more than 37 years as a mill right and
6 during that time would have had occupational
7 exposures to several materials that may have
8 led to the development of his adenocarcinoma
9 and those are the main ones that I would
10 focus on in that that's most of his working
11 life.

12 Q Doctor, I'm looking for material
13 substances. Are you saying diesel fumes and
14 asbestos and nothing else? Are you
15 intending to include other items, other
16 materials, other compounds, other chemicals?
17 That's what I'm trying to determine.

18 A To answer your question about
19 specific substances that he would have been
20 exposed to in these occupations, asbestos is
21 one.

22 Q Again, I don't mean to interrupt

1 you, but I am not interested in an
2 articulation in what he may have been
3 exposed to. My question is farther down the
4 road. I'm asking in your considered
5 professional opinion what were the causes of
6 his lung cancer? That's all I'm asking.

7 MR. MURPHY: Let me object to the
8 form of the question.

9 THE WITNESS: Well, all I can do
10 is tell you what he was exposed to and what
11 his risks were of developing lung cancer and
12 that I don't know how his lung cancer
13 specifically developed, but I do know that
14 he had high risks for the development of
15 adenocarcinoma from his occupational
16 exposures and from other potential risks
17 that -- that should be considered in
18 considering how he may have developed or how
19 he developed adenocarcinoma.

20 BY MR. PURCELL:

21 Q Exposures to what?

22 A Well, I tried to answer the

1 question and you cut me off, so --

2 Q Doctor, you know, I haven't cut
3 you off. I've been very cordial, as have
4 you, and I suggest we keep it on that level.

5 MR. MURPHY: I think we can keep
6 it cordial, but he did start to mention
7 substances and you indicated that that's not
8 the answer you were looking for and you went
9 on.

10 BY MR. PURCELL:

11 Q Substances.

12 A We have mentioned diesel, we have
13 mentioned asbestos. He would have been
14 exposed as well to chromium from welding,
15 mill rights, he was a certified industrial
16 welder and he would have been welding
17 stainless steel, so he would have been
18 exposed to chromium, exposed to nickel and
19 nickel compounds, he was supposed to acid
20 aerosols from the welding flux, welding
21 materials, he was exposed to silica from
22 grinding and sandblasting. That, again, is

1 done by mill rights or that mill rights are
2 involved in. He was exposed to various
3 solvents from paints, degreasing agents that
4 are used in degreasing such things as
5 turbines and grinding agents.

6 Let me think for just a moment.

7 He had been, of course, exposed to
8 combustion products from the welding and
9 from grinding. He would be exposed to metal
10 fibers and in addition to the diesel from
11 the submarine, he would have been exposed to
12 diesel fumes. Often diesel equipment was
13 used to move heavy pieces of equipment for
14 mill rights, so he would have had exposures
15 to that. I think those are the main things
16 that -- that I would pick out of his
17 occupational exposure.

18 Q Do you believe each were
19 contributing causes of his lung cancer?

20 A Each of those can contribute to
21 the development of lung cancer and are -- we
22 know that mill rights, as a group of

1 workers, have a much higher level of lung
2 cancer, including adenocarcinoma, and that
3 his risks would have been elevated based on
4 his long -- his 37 plus years working as a
5 mill right in that he would have been
6 exposed to these materials during that time
7 period. We also know that some of the
8 things that I mentioned that mill rights do
9 such as welding, we know that welders as a
10 class of people also have an increased level
11 of lung cancer, which are thought to be
12 related to their exposure to any of those
13 individual chemicals.

14 Q Getting back to my question, do
15 you believe that each were contributing
16 causes of Mr. Harvey's lung cancer?

17 A They were certainly contributing
18 factors.

19 Q The question is causes.

20 A Well, again, causes doesn't -- is
21 pretty vague and I'm not quite sure what
22 you're referring to. If you're equating

1 cause with risk factor, I guess you could
2 use it that way, it's used pretty broadly,
3 but the way I would describe those is those
4 are risk factors in that we know that cancer
5 is -- is a multi factorial disease, which
6 means it's caused by many different things,
7 not by one thing.

8 Q In your opinion are each
9 substantial factors in producing his lung
10 cancer?

11 MR. MURPHY: Object to the form of
12 the question.

13 THE WITNESS: Well, we know that
14 each of these materials, based on the
15 earlier question, would be termed hazardous
16 and many of these are highly hazardous
17 materials. We know that within that
18 profession that after a long exposure to
19 those materials, that they have an increase
20 in lung cancer. I don't think that
21 scientifically and certainly
22 epidemiologically that we can separate out

1 those individual materials to say that it
2 was only chromium or it was only combustion
3 products, but it appears that it was a
4 combination of those, not individual
5 substances.

6 Q What definition of hazardous were
7 you just using?

8 A The same one that you had
9 suggested that, you know, if we just use a
10 general definition, that, you know, let's
11 take, for example, chromium. If animals are
12 exposed to chromium, do they develop lung
13 cancer? The answer is yes. Is there a dose
14 response? Yes, there's a dose response. So
15 in a vague definition of hazardous, if you
16 accept that as showing a hazard, then you
17 would say that chromium was hazardous.

18 Now, if -- the chromium has
19 actually been shown to do that in several
20 different animal species, so that's accepted
21 by the World Health Organization as being
22 carcinogenic and that's the definition I was

1 using.

2 Q Are there any other substances or
3 materials that you implicate as substantial
4 risk factors for his lung cancer?

5 A I didn't say those were
6 substantial risk factors. I just said that
7 those are risk factors and I don't know what
8 substantial means the way you're using it,
9 but we do know that those are risk factors,
10 are part of developing the overall risk
11 factor for mill rights. I was just thinking
12 if there were some others. I think I
13 mentioned the main ones. Others don't come
14 to mind right now. For example, mill rights
15 do use x-ray equipment and they do use
16 radioactive sources in doing measurements
17 and making sure that they have proper
18 clearances on metals that are being cut. I
19 could list also radiation in that that has
20 been a concern in some of these industries,
21 but I think the ones that I gave you
22 represent the most important ones.

1 MR. MURPHY: Just so I'm clear,
2 we're still within the occupational realm?
3 I mean I know that's that area where we've
4 started, but I don't know if we've moved out
5 of that or not.

6 MR. PURCELL: We've never been so
7 limited.

8 MR. MURPHY: Okay. It's late, but
9 I'll pose an objection to the question then
10 because it was vague and I understood that
11 we had started in the occupational realm and
12 may not have moved out of it.

13 BY MR. PURCELL:

14 Q Do you believe that animal
15 modeling and testing has shown each of these
16 substances or materials to be causes of
17 cancer?

18 A Some of them have been shown to be
19 causes of cancer. Some have not been shown
20 specifically to be causes but to pose a risk
21 for developing cancer and since for one
22 reason or another the studies were not as

1 good, we have not been able to label those
2 as causes, but we know that people exposed
3 to those have an increased risk, but we
4 don't quite understand why yet.

5 Q Do each satisfy causes Koch's
6 postulates for causation for lung cancer?

7 A No, not each one of those
8 satisfies Koch's postulate.

9 Q You're pronouncing it Koch?

10 A Well, it's Koch or Koch.

11 Q K-O-C-H?

12 A Yeah. If your German it's Koch.

13 Q The fellow who did the
14 tuberculosis work?

15 A Yes.

16 Q Do you implicate his cigarette
17 smoking history as a risk factor for his
18 lung cancer?

19 A Yes.

20 Q Have you ranked any of these risk
21 factors in terms of their significance in
22 his specific case and his specific cancer?

1 A Have I -- I'm not quite sure what
2 you mean by "ranked." I've gone through and
3 read the information in the medical records
4 and so forth that is contained in the box
5 that I brought in and I've come to an
6 understanding as to what I feel his
7 exposures are and what many of the risks are
8 that he was exposed to.

9 Q What have you concluded?

10 A Well, we've mentioned cigarette
11 smoke as being a risk factor, mentioned the
12 occupational exposure to the various
13 materials that I gave you as being a risk
14 factor, we haven't as yet talked about
15 environmental exposures, which are also risk
16 factors, we haven't talked about some life
17 style issues, for example, his alcohol
18 consumption is a risk factor, and another
19 one that I think is important for him is the
20 family relationship to others that may have
21 developed cancer. We know that cancer tends
22 to run in families.

1 Now, in addition there are some
2 chronic developing diseases that themselves
3 could be listed as risk factors, but are
4 more consistent with his exposures to some
5 of the materials that we've talked about
6 from his occupational exposures and from the
7 environmental exposures and possibly based
8 on his family genetics.

9 Q As amongst his history of
10 cigarette smoking, do you implicate his
11 entire dose or do you disregard aspects of
12 his total dose?

13 A Well, when I initially read
14 through this, I tried to understand what his
15 total dose would have been, in other words,
16 his total cigarette consumption was
17 typically measured in pack years, and he had
18 approximately a 40-pack year history, which
19 is an indication of his dose. That's the
20 main thing that I considered for his risks
21 from cigarette smoking or developing
22 adenocarcinoma.

1 Q Have you made any calculation or
2 formed any opinion as to implicating any
3 subsets of his total cigarette history as
4 dose in contributing to his lung cancer
5 outcome?

6 A Well, there are some other issues
7 that come out of this case and I had been
8 asked, and these, again, relate to
9 individual products, the fact that he has
10 smoked for a short time period an R.J.
11 Reynolds for less than five years, probably
12 around two to three, maybe four years he
13 smoked Camels when he first started smoking
14 and then switched over to another company's
15 product later. I had been asked what his
16 risks would have been from that first three
17 or four years worth of smoking. So that's
18 one issue.

19 In addition, he actually quit
20 smoking, I believe, based on the records on
21 three different occasions for approximately
22 a year and-a-half, so his smoking was

1 interrupted for a time period at three
2 different times. I thought about well,
3 suppose he had, when he stopped smoking, for
4 example, in the '80s, when he moved, if he
5 hadn't smoked anything further and continued
6 not to smoke, what would his risks be, I
7 thought about those types of issues, so we
8 call that diminishing risk.

9 Q What conclusions specific in this
10 case have you drawn on those issues you've
11 just stated?

12 A Well, first of all, if we were to
13 separate out one product versus another
14 product and we were to focus, as I did,
15 which was focused in this disclosure
16 statement, on Camel brand cigarettes, which
17 were the ones that were manufactured by R.J.
18 Reynolds, he only smoked those when he first
19 started smoking for about, let's say,
20 approximately three years. If he hadn't
21 smoked anything else other than those three,
22 his risk of developing lung cancer at

1 age 61, when he was diagnosed, would be the
2 same as a person who never smoked and that's
3 what was referred to here as diminimus. If
4 he had not -- if he had stopped smoking and
5 had not started back to smoke at any of the
6 other time periods, we know that as a person
7 stops smoking, within 5, usually 10 years,
8 their risk starts to drop rather rapidly by
9 the first 5 years and by 10 years it's
10 dropped considerably, so by about 15 years
11 it's nearly back to a person who has not
12 smoked. That's referred to as diminishing
13 risk. So if he had stopped smoking and
14 hadn't continued in those other time
15 periods, he would be back similar to or at
16 the same level as a person who never smoked.

17 MR. MURPHY: When you get a good
18 chance --

19 BY MR. PURCELL:

20 Q I appreciate all of that. I'm
21 interested in not somebody else and someone
22 else's smoking history that could have

1 tracked portions or aspects of Mr. Harvey's.
2 I'm interested specifically in Mr. Harvey's
3 actual dose and history.

4 Is there anything about the
5 analysis that you just mentioned that allows
6 you to back in Mr. Harvey's specific case
7 and disregard the dose he received from
8 Camel as being contributing to his risk
9 factors for lung cancer?

10 MR. MURPHY: I object to the form
11 of the question.

12 BY MR. PURCELL:

13 Q You may respond.

14 A Yeah, I'm trying to think what
15 your question -- what you're asking. If
16 you're asking that when he stopped smoking
17 Camels, if he didn't smoke any other
18 cigarettes, the smoking of Camels would not
19 have contributed statistically to him
20 developing cancer at age 61.

21 BY MR. PURCELL:

22 Q No, that's not what I'm asking you

1 at all.

2 A Then I don't understand your
3 question.

4 Q Do you view prospective risk
5 analysis for cancer to be the same
6 analytical construct as retrospective
7 causation analysis?

8 A I don't know what retrospective
9 causation analysis is. I know what
10 prospective and retrospective epidemiologic
11 studies are and they don't have anything to
12 do with causation. They -- so I don't --
13 I'm not quite sure I understand what your
14 question is. There are different constructs
15 for prospective and retrospective
16 epidemiologic studies if that's what the
17 question is.

18 Q I'm interested to know is there
19 anything about the disciplines with which
20 you are very familiar and well trained
21 regarding risk analysis that allows you to
22 in any way disregard the dose from Camel

1 smoking as being a risk factor specific in
2 Mr. Harvey with all that you know about him?

3 MR. MURPHY: Objection to the form
4 of the question.

5 THE WITNESS: I think what you're
6 asking -- I'm trying to answer your
7 question -- is that if we segment dose into
8 various parts and even into different
9 factors, do we do that in epidemiologic
10 studies, the answer is yes. That is the
11 process that we go through in trying to
12 illuminate Nate confounding factors, that's
13 the process that we use to try to understand
14 risks of various ages and to even try to
15 understand such things as adaptivity and
16 synergism and so forth. So we do segment
17 does and say, you know, suppose this had
18 happened or let's take -- if we're looking
19 at lung cancer, let's take cigarette smoking
20 out or let's take asbestos exposure out and
21 see what the risks are. So we do that all
22 the time.

1 MR. PURCELL: I guess we could
2 take a break if you would like to.

3 MR. MURPHY: Thanks.

4 (Recess)

5 BY MR. PURCELL:

6 Q Back on the record, doctor. Have
7 you formed any opinion that any aspect of
8 Mr. Harvey specifically, his smoking dose
9 were not risk factors for his lung cancer
10 development?

11 MR. MURPHY: Objection to the form
12 of the question. It's vague.

13 THE WITNESS: I'm trying to think
14 how to answer your question. Like I say,
15 before I broke I talked about segmenting
16 dose into various parts. It is possible, we
17 do it in epidemiologic studies, in trying to
18 eliminate or consider various factors. I
19 started out with the initial basis that he
20 was approximately a 40-pack per year smoker
21 and, as I indicated, if he had only smoked
22 for, say, approximately three years and

1 never smoked again when he was young, then
2 he would not have had any risk at all at
3 age 61 of developing lung cancer based on
4 that three years of exposure earlier. If
5 that answers your question, I'm trying to
6 answer it the best I can.

7 BY MR. PURCELL:

8 Q Actually it doesn't, but I
9 appreciate your effort. I'm not trying to
10 talk at all about someone other than
11 Mr. Harvey and what their risks might or
12 might not have been from a smoking history
13 that would in some way parallel pieces of
14 Mr. Harvey's smoking history. I'm intending
15 to ask you specific to Mr. Harvey and his
16 development of lung cancer. Have you formed
17 any opinion about his dose of cigarette
18 smoking and his history where you have
19 implicated some periods of smoking history
20 as risk factors for his lung cancer that he
21 developed and excluded others or are you
22 taking his total approximate 40-pack year

1 dose?

2 A Well, for comparison with other
3 risk factors I would take his total 40-pack
4 year dose.

5 Q Do you believe that occupational
6 exposure to asbestos causes mesothelioma?

7 A Yes.

8 Q Do you believe that cigarette
9 smoking has not been identified as a cause
10 or risk factor for mesothelioma?

11 A Yes, it has not been identified as
12 a risk factor or a cause for mesothelioma.

13 Q Are you aware of any animal models
14 that have shown asbestos to cause
15 mesothelioma?

16 A Yes.

17 Q Which ones?

18 A Well, like I say, I didn't prepare
19 to discuss asbestos in that much detail, but
20 they have been able to produce in the
21 interstitial fibrosis that you see in
22 mesothelioma in rats, they've actually been

1 able to produce it in some strains of mice.

2 Q When you say "they" --

3 A These are researchers.

4 Q Do you have a name or --

5 A No, I didn't go through it in that
6 detail. I just know that laboratory animal
7 studies have been done and they have been
8 successful of producing the interstitial
9 fibrosis that we see in humans that are
10 exposed in asbestos, in animals that are
11 exposed to asbestos.

12 Q My question was focusing on the
13 specific response of malignant mesothelioma.
14 Do you know of any animal experiments or
15 studies that have shown inhalation of
16 asbestos to produce malignant mesothelioma?

17 A Like I say, the laboratory animal
18 studies have produced mesothelioma and they
19 have produced lung cancer in animals, so the
20 answer is yes.

21 Q Can you give me a name or a
22 citation to any of them?

1 A No, not at this point. Like I
2 say, I didn't prepare to go into asbestos in
3 that kind of detail.

4 Q Do you understand these to be
5 inhalation studies or other types of animal
6 modeling?

7 A There have been inhalation
8 studies, but many of the studies have, and
9 this is just based on my memory, have
10 actually been done where the fibers have
11 been introduced in the body through
12 injection, for example, injection in the
13 peritoneal cavity of the animal. So it's
14 been introduced in different ways in
15 addition to inhalation. However, if you
16 look at the inhalation, the models have
17 shown fibrosis in animals.

18 Q Do you believe a fibrotic response
19 has anything whatsoever to do with a
20 malignant mesothelioma response?

21 A I believe the fibrotic response
22 that we see in humans exposed to asbestos

1 does usually precede the development of lung
2 cancer.

3 Q Do you consider it to be an
4 obligate precursor for an asbestos-induced
5 lung cancer?

6 A That's been a debate for several
7 years and I first a few years ago thought
8 that we'd almost have to see fibrotic
9 changes, pleural thickening and so forth
10 that you see first before the cancer
11 developed. In the most recent studies they
12 actually have seen lung cancer in
13 individuals that have not shown the
14 fibrosis. But I think they're more commonly
15 linked, but we do see it from time to time
16 it appears. So one is not necessarily
17 absolutely a precursor for the other one.

18 Q If I understand you correctly, you
19 recognize that it's more common for there to
20 be both fibrotic changes in someone who
21 developed an asbestos-induced lung cancer
22 but that it is not a biologic obligate

1 precursor; is that your current view?

2 A Yes, that's correct.

3 Q I've read a little about your
4 inhalation studies on dogs involving tobacco
5 smoke.

6 A Yes.

7 Q Again, what years were you doing
8 those studies?

9 A Late 1970s, early 1980s.

10 Q My understanding is that as your
11 studies ran their course, you were not able
12 to get cancer in the lungs of the dogs; is
13 that right?

14 A That's correct.

15 Q For how long did you follow the
16 exposed dogs?

17 A So this is a folder that has been
18 copied --

19 Q Yeah.

20 A So that's the exhibit. I don't
21 remember the exact time and we also had what
22 are called serial sacrifices where dogs were

1 killed at various intervals and then the
2 lungs were examined. I believe the longest
3 dogs, again, to try to answer your question,
4 were a little over three years.

5 Q Did you publish any of the data?

6 A I didn't publish the data. These
7 were put together in reports and submitted
8 to the National Cancer Institute.

9 Q What are those reports entitled
10 generally so I could find them?

11 A Well, generally, they're titled
12 tobacco inhalation studies of beagle dogs.
13 They were done at both Battelle and Boriston
14 Laboratories.

15 Q Why weren't you able to get cancer
16 in the lungs of the beagle dogs?

17 A I don't know the answer to that.
18 We -- part of the reason those studies were
19 conducted was to try to replicate
20 Dr. Auerbach's studies he had done in beagle
21 dogs where he felt that he had an increase
22 in tumors and so we were asked to try to

1 replicate those studies, in other words, to
2 try to produce tumors as well, and we were
3 unsuccessful.

4 Q Have you ever expressed any view
5 as to why?

6 A Have I ever -- I was trying to
7 figure out -- not to my recollection. I
8 think the -- I basically said I don't know
9 why we were not able to produce tumors. We
10 and others were not -- were never able to
11 replicate the studies that were done by
12 Auerbach, so we actually weren't the only
13 one. Others had tried the same thing but
14 were unsuccessful.

15 Q Do you believe your studies
16 support the view that tobacco smoke does not
17 cause lung cancer?

18 A It supports that fact from the
19 standpoint of not understanding the
20 mechanism of lung cancer. That's not to say
21 that there aren't a lot of human studies
22 that show consistent increases in lung

1 cancer based on cigarette smoking, but we
2 have been unsuccessful at developing a
3 laboratory animal model, of which the beagle
4 dogs were a part of that attempt.

5 Q Do you believe cigarette smoking
6 to cause lung cancer?

7 A Well, again, it depends on how you
8 describe cause and there's a lot of
9 different ways. If we were to say well,
10 cause is based on the fact that we have
11 repeated epidemiologic studies and clear
12 statistical studies in humans to show that
13 there's an association between cigarette
14 smoke and developing lung cancer, I would
15 say yes. As a scientist, we try to develop
16 a laboratory animal model and understand how
17 it's developed and so from the Koch's
18 postulates that you referred to earlier we
19 would say no because we don't under the
20 mechanism and, in fact, we don't have the
21 laboratory animals yet we that can use to
22 understand it, so we're at a clear

1 disadvantage.

2 Q Do you agree or disagree with the
3 statement, "There is an overwhelming medical
4 and scientific consensus that cigarette
5 smoking causes lung cancer, heart disease,
6 emphysema and other serious diseases in
7 smokers"?

8 A I don't know what that's from. If
9 that's from the Surgeon General's report,
10 the Surgeon General gave the definition that
11 I would call a public health definition that
12 there are epidemiologic studies that clearly
13 link cigarette smoking with lung cancer. I
14 would agree that that's true, but we don't
15 have laboratory animal studies even as yet
16 that helps us understand what that link is.

17 Q If I'm reading from a tobacco
18 company publication, does that affect
19 whether you would agree with it or not?

20 A No, it doesn't affect whether I
21 agree with it. It's just, like I say, based
22 on what that was -- how cause was defined.

1 Q Do you understand that to be R.J.
2 Reynolds' current position and thinking?

3 A I don't know what R.J. Reynolds'
4 current position and thinking is regarding
5 cigarette smoking.

6 Q Have you been asked to go back and
7 historically review that?

8 A Not in R.J. Reynolds. As I
9 indicated, I haven't gone back and tried to
10 review R.J. Reynolds' documents.

11 Q Have you done that regarding any
12 manufacturer of tobacco products?

13 A I have gone back and reviewed the
14 scientific literature, how cancer research
15 has been done over the years, including how
16 cigarette studies have been conducted and
17 what laboratory animal studies, what human
18 studies have been published, and I've
19 gone -- I've reviewed tens of thousands of
20 articles in that area, and I think I have a
21 pretty clear understanding as to how the
22 science has developed over the years.

1 Q Do you have any opinion specific
2 to R.J. Reynolds or Philip Morris and when
3 they actually knew of the propensity of
4 cigarette smoke to cause lung cancer?

5 MR. MURPHY: Objection. Vague and
6 ambiguous.

7 THE WITNESS: Well, I can't speak
8 as to when, "a company" knew about anything
9 and the company is made up of a lot of
10 different people and researchers that are
11 active. I have over the years seen
12 researchers in R.J. Reynolds and Philip
13 Morris and Lorillard and other companies that
14 have published in the scientific literature
15 studies and, as I indicated earlier, I
16 haven't reviewed internal documents in these
17 companies to try to understand what their
18 thought processes were at a particular time
19 period, but in comparison with what was
20 being published in the literature, I assume
21 that their scientists were keeping up and
22 had their own opinions about what was being

1 stated in the literature.

2 BY MR. PURCELL:

3 Q Other than that, would it be fair
4 to say you're not going to be offering any
5 company-specific opinions or views; is that
6 correct?

7 A Only to the state that it deals
8 with the science at the time that maybe a
9 statement was made. Just as you read me a
10 statement, somebody could read me a
11 statement that was written by R.J. Reynolds
12 or by the Surgeon General and say, you know,
13 in 1960, based on the science, that this
14 makes sense to state that, I can say yes or
15 no. Only from that standpoint. I wouldn't
16 testify about internal documents.

17 Q Let me ask you what opinions you
18 have formed and intend to express in the
19 Harvey trial.

20 MR. MURPHY: If that's the end of
21 the question, I object as vague, overbroad,
22 overwhelming.

1 BY MR. PURCELL:

2 Q You may respond.

3 A It would be a lot easier to answer
4 that if you were a little more specific
5 about which you would like me to address.

6 Q Rather than my going through it in
7 another way, my preference is to just have
8 you indicate for me the opinions that you
9 have formed and are prepared to testify
10 about here today that you will be giving in
11 the defendants' case in chief and my intent
12 is to have a list of them so that I can know
13 what you're going to say at trial.

14 A I understand.

15 MR. MURPHY: Same objection.

16 THE WITNESS: Yeah, I understand
17 what you're -- I think you're trying to do.

18 BY MR. PURCELL:

19 Q In fairness, doctor, you know, I'm
20 not going to quibble about minutia or
21 detail, I want the big topic opinion
22 details, if you will.

1 A Well, just looking at the
2 disclosure that I provided, and there are --
3 I think I could probably summarize it, and,
4 again, this is just a summary, is that
5 first, and this is the first bullet in here,
6 number one, that I probably would be asked,
7 and, again, I don't know what the attorneys
8 are going to ask me to do, but I could very
9 well testify about this research in cancer
10 and how it's been carried out and
11 specifically for lung cancer and exposure to
12 cigarette smoke both in laboratory animals
13 and in humans starting, say, back in
14 the 1930s even up to today. Then, secondly,
15 I could testify about Mr. Harvey's risk
16 factors for developing adenocarcinoma of the
17 lung. We have talked in some detail about
18 the occupational exposures that he had, his
19 mill right and his submariner, and I would
20 also describe his environmental factors, his
21 lifestyle factors, such as the consumption
22 of alcohol, the risks related to his family,

1 for example, that his father had also not
2 only had lung cancer but died of lung
3 cancer, and when they xeroxed this, they cut
4 this off. Sorry.

5 Q I have another copy if you would
6 like to see --

7 A Yeah, I was just looking to see if
8 I was consistent with this disclosure.
9 Yeah, it's got this next page on it.

10 Mr. Harvey also had a progressive
11 development of interstitial fibrosis, which
12 appears to have started fairly early. It
13 may have started based on the initial
14 asbestos exposure, but was certainly seen
15 before the cancer was diagnosed, for
16 example, in 1995, the fibrotic lesion,
17 pleural thickening, scar formation were
18 seen, and that is an important basis
19 biologically for the development of
20 especially adenocarcinoma and so I would
21 testify about the potential links between
22 the scarring of the lung and the development

1 of adenocarcinoma.

2 BY MR. PURCELL:

3 Q Do you believe his exposure to
4 asbestos in the work place played any role
5 in developing his pleural thickening and
6 pleural scarring?

7 A I think that was one of the
8 risk -- the risk factories for him
9 developing it, but I don't think it's the
10 only risk factor. There were others as well
11 that I mentioned before, all of which
12 produce scarring of the lungs and could have
13 contributed to development of the
14 adenocarcinoma.

15 Q Anything else?

16 A What I tried to do is summarize
17 the, probably three areas then: First is
18 history of cancer research; second, the
19 individual risk factors for Mr. Harvey; and
20 then probably third, the mechanisms of the
21 damage that we see in the lung associated
22 with these various exposures and how those

1 can lead to the development of
2 adenocarcinoma, which is the mechanistic
3 aspects.

4 Q Would any of your opinions change,
5 as you describe them in these three areas,
6 if you were asked to assume that Mr. Harvey
7 had a nonsmall cell carcinoma?

8 MR. MURPHY: Objection to the
9 form.

10 THE WITNESS: Well, adenocarcinoma
11 is a nonsmall cell. Nonsmall cell is a
12 designation given to anything but small
13 cell, so in some of his early diagnoses that
14 were given were simply nonsmall cell.

15 BY MR. PURCELL:

16 Q So the answer is no?

17 A Well, it -- the fact he had
18 adenocarcinoma is more specific to scarring.
19 Nonsmall cell could be several different
20 types and so the scarring may have been less
21 important if it was nonsmall cell, although
22 what I would try to do is simply not leave

1 it as nonsmall cell but try to get a better
2 understanding of what it actually was rather
3 than just a vague description of the
4 pathology.

5 Q Would it in any way change your
6 evaluation of the significance of pleural
7 thickening and pleural scarring as important
8 factors for his cancer?

9 MR. MURPHY: Objection to the
10 form, vague and unintelligible.

11 THE WITNESS: Again, that's
12 difficult to answer. To try to respond, if
13 it was simply diagnosed as nonsmall cell,
14 because that's a broader set of tumors, of
15 potential cell type tumors, that would put a
16 little more uncertainty into it than the
17 fact that it was an adenocarcinoma and we
18 know that adenocarcinomas are often
19 associated with scarring.

20 BY MR. PURCELL:

21 Q Would you still associate or
22 implicate his optional exposure history to

1 asbestos as a risk factor?

2 A Yes.

3 Q Would the same be true if this was
4 described pathologically as a nonsmall cell
5 carcinoma with squamous cell features?

6 A Again, you're actually asking two
7 different questions. Nonsmall cell is a
8 group which includes adenocarcinoma. It's
9 not uncommon to find some mixed cell types
10 in a tumor and if it were an adenocarcinoma
11 predominantly with some squamous cell cancer
12 as well associated with it, that wouldn't
13 change my analysis.

14 Q Do you believe there to be any
15 health benefit to smoking light or low tar
16 cigarettes?

17 MR. MURPHY: Objection to the form
18 of the question. I think it's vague and I
19 think it's unintelligible.

20 THE WITNESS: I mentioned earlier
21 that one of the things the cigarette
22 companies could do just based on common

1 sense is to reduce the amount of tar in
2 cigarettes and, in fact, that's been done
3 over the years. Because we don't have a lot
4 of laboratory animal models to test that,
5 we're not quite sure whether that really
6 reduces the risks or not, but there have
7 been the introduction of low tar cigarettes
8 and so forth into the market partly with the
9 intention of trying to reduce the risks
10 associated with cigarette smoking. Like I
11 say, the problem is that we don't have
12 laboratory animal models to test that, so we
13 don't know if that assumption is correct or
14 not.

15 BY MR. PURCELL:

16 Q So do you believe there are health
17 benefits to smoking light and low tar
18 cigarettes?

19 A Well --

20 MR. MURPHY: Same objection as I
21 had before.

22 THE WITNESS: Like I say, I don't

1 know because I have no way of testing it.
2 My common sense would say that there are,
3 but that's not what I usually do my analysis
4 based on, common sense.

5 BY MR. PURCELL:

6 Q Are you familiar with any medical
7 data that would suggest tar for light
8 cigarettes to be much worse than regular
9 cigarettes?

10 A I have seen studies. Again, I
11 read the scientific literature. I've seen
12 studies that have proposed that cigarettes
13 that are lighter tar cigarettes for one
14 reason or another may actually introduce tar
15 deeper in the lung than cigarettes that are
16 not light cigarettes. I don't think that's
17 been proven yet, but that's one of the
18 speculations that I see particularly in the
19 epidemiologic literature, but it's never
20 been shown in the laboratory. So based on
21 that, then you would say well, these
22 cigarettes are not less hazardous, but may,

1 in fact, be more risky.

2 Q You have no view on that currently
3 because of your understanding of the state
4 of the science; is that correct?

5 A Yeah, based on the state of the
6 science, we don't know how to test that,
7 so -- and any attempts to test it have been
8 unsuccessful. So at this point it remains
9 speculation.

10 Q Are filtered cigarettes more
11 mutagenic than regular unfiltered
12 cigarettes?

13 A Well, mutagenic means a lot
14 different things. You have to tell me what
15 you mean by mutagenic. For example, do you
16 mean based on Ames test or --

17 Q Exactly, yes.

18 A Well, many years ago when Ames
19 testing was more popular and used more
20 extensively, there were some filtered
21 cigarettes that tended to show some
22 increases in mutagenicity over those that

1 were not filtered cigarettes, however, later
2 studies weren't able to show that to be
3 true. In fact, when they examined it in
4 detail, they found that, in fact,
5 cigarettes -- filtered cigarettes tended to
6 be less mutagenic than those that were --
7 didn't have filters, so in a repeat of those
8 studies the Ames test have not been used as
9 much lately because we have found out that
10 they're -- they're not really that useful in
11 anything but be a preliminary screening.

12 Q Where are those results published?

13 A Which results?

14 Q The results you were just
15 referencing regarding the Ames?

16 A The Ames testing, the most recent
17 analysis was done by the National Institute
18 for Environmental Health Sciences
19 and 1996 -- I can't remember the author, but
20 it's available actually on line -- discusses
21 the weaknesses of the Ames and other in
22 vitro tests as a way to actually show that

1 something is carcinogenic as -- as opposed
2 to other types of tests such as whole animal
3 tests and those -- that discusses what I
4 just mentioned.

5 Q Getting back to your areas of
6 opinion in the case, could you be more
7 specific about the specific opinions that
8 you formed and intend to express in those
9 areas in the Harvey case?

10 MR. MURPHY: Objection to the
11 form, overbroad.

12 THE WITNESS: Would you like to
13 mention one of the areas and I'll try to be
14 explain it?

15 BY MR. PURCELL:

16 Q Sure, we can take them in order.
17 The first category was research on cancer
18 from cigarette smoke spanning from the 1930s
19 to date on both enveloping animal and human
20 studies, the history of that research, and
21 let me try, and out of deference of
22 counsel's objection, make this a more

1 manageable area and say that if you have
2 previously articulated your views in this
3 area, for example, in the Engle direct
4 testimony you provided in April of 1999, you
5 don't have to repeat that now. I'm happy to
6 just incorporate that by reference. I'm
7 interested to just know what the opinions
8 are so that I'm not surprised at trial by
9 them.

10 MR. MURPHY: Just for
11 clarification, are you limiting it to Engle?

12 MR. PURCELL: Well, if there's a
13 difference, I'm happy to incorporate other
14 transcript so that the doctor is comfortable
15 that it covers the universe of his first
16 category. In other words, in Exhibit 1 if
17 he wanted to point out other trials and say,
18 you know, if you read the testimony I gave
19 in this trial, this trial and this trial,
20 that's going to do it, that would be fine.

21 THE WITNESS: Engle was one of the
22 more complete descriptions that I did of --

1 of the historical development of the science
2 and I think reflects a lot of what I would
3 refer to here probably in less detail than
4 in Engle, but in some of these others I have
5 given various aspects of that such as in the
6 Kenyon case, a most recent case, and in the
7 Mehlman case, I gave less detail but
8 sometimes more specific information on the
9 development and how it may have referred to
10 that specific case, and I think those --
11 those three, Kenyon, Mehlman and Engle,
12 probably would cover everything that I would
13 cover in this for the first area.

14 BY MR. PURCELL:

15 Q Can you think of anything that you
16 would be offering as an opinion in this area
17 in the Harvey case that isn't stated in
18 those three transcripts?

19 MR. MURPHY: Again, just so it's
20 clear, because I got burned on this earlier
21 in a deposition, you're limiting that
22 question to this one subject area?

1 MR. PURCELL: Yes, this is the
2 first category, research on cancer from
3 cigarette smoke historically from --

4 MR. MURPHY: Because I think it
5 gets confusing when it's eliminated and then
6 you get down to one and I think that
7 happened earlier.

8 MR. PURCELL: No, this has to do
9 with the first category of opinions.

10 THE WITNESS: Yeah, based on the
11 first category I think those three years
12 would describe my testimony with the
13 exception of any newly-published references
14 that may become available since I testified
15 in Kenyon that deal specifically with such
16 issues as animal studies and so forth, and
17 this is an evolving science, it's a
18 developing science, and there's still a lot
19 of publication that's being done. But I
20 don't think it will substantially contribute
21 to that, that may be offered as an
22 additional reference for support.

1 BY MR. PURCELL:

2 Q Do you have any in mind right now?

3 A No.

4 Q Taking that representation, and I
5 thank you for it, doctor, I'm happy to move
6 to the second category overall of your
7 opinion areas in the Harvey case that was
8 described by you as a general topic category
9 of Mr. Harvey's risk factors for
10 adenocarcinoma of the lung. You've already
11 discussed considerations regarding his being
12 mill right, on a submarine. Could you
13 expand and give me, without revisiting what
14 you've already stated, what opinions you
15 formed in this category that you intend to
16 express specific in the Harvey case?

17 MR. MURPHY: You don't want him to
18 go over the mill right and sub?

19 MR. PURCELL: I think he's covered
20 those okay for my purposes. I'm interested
21 in the environmental factors, the lifestyle
22 factors, family risk areas or what other

1 areas he hasn't yet mentioned.

2 MR. MURPHY: Well, I don't want to
3 cut you off, but he mentioned smoking. Do
4 you want to do that or do you want to make a
5 list? I don't want to leave --

6 MR. PURCELL: Smoking is fine.
7 This is the opportunity to --

8 MR. MURPHY: Well, he did talk
9 about it. I just don't know, given your
10 qualifications of some things he talked
11 about before, I just want to --

12 BY MR. PURCELL:

13 Q You need not repeat what you've
14 already talked about here this afternoon,
15 doctor.

16 MR. MURPHY: Okay.

17 THE WITNESS: Yeah, we've -- we've
18 talked about the mill right, we've talked
19 about the submariner, we've talked about the
20 various exposures during those occupational
21 activities, so we'll set those aside.

22 In the environmental, if we take a

1 new area that we actually haven't discussed
2 in detail, Mr. Harvey lived in Middlesex,
3 New Jersey, in an area that had considerable
4 pollution. Not only was there a on the lot
5 of pollution, but he lived for over 21 years
6 within a mile -- three different addresses;
7 South Lincoln, his address there, his Cook
8 address and also when he lived on 2nd
9 Street. He lived at those addresses for
10 over 21 years and those are all three within
11 a mile of a major Superfund site which was
12 well known in the area and had extensive
13 radioactive waste, such things as radium,
14 thorium, plutonium, that led that to be a
15 major Superfund site and has currently been
16 taken over by the Department of Energy to
17 clean it up. So that should be considered
18 in his -- the analysis of his potential
19 exposures to materials that may cause
20 pulmonary fibrosis and lung cancer.

21 A couple of the other
22 environmental areas that I would mention is

1 the radon. He lived on the edge of the
2 Reading Prong, where radon is released from
3 the rocks, and he lived right -- he was in a
4 medium to a high area of radon exposure and
5 we know that radon is a risk for developing
6 lung cancer.

7 Probably the other environmental
8 one that I think may be important and I,
9 frankly, have not quite decided how to
10 classify these with the other risks, is the
11 area of ozone exposure. Ozone is a common
12 air pollutant particularly in the New York,
13 New Jersey area. There are many days of
14 exceedence in the ozone standards and we
15 know that ozone causes pulmonary fibrosis
16 through a free-radical mechanism in the
17 lung. So that's one that probably ought to
18 be considered since he had extensive
19 interstitial fibrosis.

20 I think those are probably the
21 major environmental areas that I've been
22 able to identify so far. There may be

1 others, but those are the ones I can think
2 about and I think those probably constitute
3 the most important.

4 BY MR. PURCELL:

5 Q You then also mentioned lifestyle
6 factors, family risk and smoking as other
7 risk factor categories for his lung cancer.
8 Can you tell me what opinions you formed and
9 intend to express in those areas?

10 MR. MURPHY: Again, if we covered
11 it before, we're going to assume it's
12 covered.

13 MR. PURCELL: Yes.

14 THE WITNESS: The lifestyle area,
15 when I typically look at potential factors
16 for developing disease, especially cancer,
17 lifestyle typically includes such things as
18 diet, I usually include in lifestyle alcohol
19 consumption. I don't really have any
20 information that his diet was an issue, but
21 his alcohol consumption was high. He was,
22 according to the medical records and other

1 depositions, consumed three to six beers a
2 night on a daily basis and based on
3 scientific studies, that would be a risk
4 factor for developing lung cancer, that
5 level of alcohol consumption. Like I say,
6 diet probably was not -- I don't see
7 evidence of a particularly bad diet, so that
8 probably would not be one that I would
9 consider. But I think the alcohol is an
10 important one and we know that the risks of
11 alcohol consumption do add or contribute to
12 the risk of developing lung cancer.

13 Q You may continue now with the
14 family risk and smoking if there's anything
15 additional than what you already mentioned
16 that you would like to add.

17 A Well, I mentioned his father -- as
18 you know, cancer runs in families, so if you
19 have a family that has an increased level of
20 cancer, then we typically refer to that as a
21 cancer burden and we know that offspring
22 have a higher risk of developing cancer. We

1 also look to see if it's a cancer that is
2 the same type of cancer in, say, a parent,
3 an offspring. So the fact that his father
4 developed lung cancer and that he died of
5 lung cancer increased his risks of
6 developing lung cancer as well. So that's
7 an important point.

8 He did have some other cancer in
9 the family as well, but I think probably the
10 most important would be the fact that his
11 own father had developed lung cancer and
12 died of it. Now, he had a grandmother that
13 had cancer and even his wife, I believe, had
14 breast cancer, but -- and she wouldn't be
15 directly generically related to him, but I
16 think probably the most important was the
17 fact that his father had developed it
18 statistically.

19 Q Anything else?

20 A Well, I think those are the major
21 areas. For example, in the environmental I
22 didn't mention some of the other areas of

1 air pollution, I just mentioned ozone and --
2 in Middlesex we pull out before the trial
3 and bring some of the other areas of air
4 pollution in. For example, polycyclic
5 aromatic hydrocarbons are found in air
6 pollution. But at this point I think simply
7 the ozone is the one that is of most concern
8 from the standpoint of interstitial fibrosis
9 and I would try to focus on those factors
10 that were -- that are known to develop
11 interstitial fibrosis in humans and we know
12 also that do that in animals.

13 Q Was there anything else you wanted
14 to add regarding smoking as a risk factor
15 for Mr. Harvey's lung cancer?

16 A Well, as I mentioned with
17 the 40-pack year history, that
18 adenocarcinoma is one of the forms of lung
19 cancer that is less related to cigarette
20 smoking. Someone said it's not related to
21 cigarette smoking, although we do tend to
22 see an increase in risk for, say, a 40-pack

1 year per year smoker of about 4.5 to 4.7
2 relative risk. So if you simply took the
3 fact that he was approximately a 40-year
4 pack user, then that would give him a risk
5 from smoking as developing adenocarcinoma of
6 about 4.5. So depending on what I'm asked
7 to do by the attorneys that are involved in
8 this, it would be impossible to make
9 comparisons between that and the
10 occupational exposure, environmental
11 exposure, and then the lifestyle types of
12 factors like the alcohol consumption and the
13 relative risks from those.

14 Q Have you done that?

15 A I have not done that as yet.

16 Q As you sit here?

17 A As I sit here.

18 Q As you sit here, are you able to
19 give me some rough ballparks in comparison
20 to let's assume a 4.5 relative risk from the
21 smoking history of 40-pack years?

22 A Well, I can give you some ballpark

1 numbers for these. The -- we talked about
2 the in fact that he was mill right. Those
3 that are mill rights have relative risks --
4 you know, one study mentioned 3.7, so
5 somewhere between, say, 3 and 4 relative
6 risk for a mill right.

7 Q Now, are you referencing studies
8 that control for cigarette smoking?

9 A Yes, these are studies that
10 control for cigarette smoking.

11 Q In the mill right population?

12 A In the mill right population, so
13 they've taken that out and are simply
14 describing the risk associated with being a
15 mill right but not a smoker.

16 Q Does it leave in, if you will,
17 potential asbestos exposures as a mill
18 right?

19 A Yes.

20 Q Okay.

21 A It leaves in exposures to
22 asbestos, chromium, welding, these other

1 types of things that we've already talked
2 about.

3 Q Any other ballparks?

4 A Let me think. We've talked about
5 the occupational. We could separate out the
6 individual risk factors. For example, we
7 could talk about the risks from thorium,
8 from asbestos and so forth, and each one of
9 those within populations have risk factors,
10 again, ranging from, oh, approximately two
11 and-a-half up to five or six depending on
12 which one we're talking about and what the
13 exposures were, but I think right now the
14 easiest is simply to say well as a mill
15 right, it's approximately four.

16 The environmental exposures,
17 radon, radon runs from a relative risk of
18 about three and-a-half up to about six
19 depending on, again, the exposure.

20 Q Which do you believe would most
21 correspond to Mr. Harvey's situation?

22 A Well, let's see. He lived there

1 over 25 years. Right now I tend to think of
2 his exposure as being not up around the
3 level of six, but more like four to five
4 relative risk from radon. It's moderate to
5 high. But it was not -- he was not actually
6 in the area of the highest exposures, which
7 would be up around five and six. Those were
8 four to five. Again, these are just
9 ballpark numbers.

10 Q I understand. Thank you.

11 A Now, ozone is an environmental
12 risk and it runs about two and-a-half to
13 three. Particulates, I didn't separate a
14 lot of those out, but in a, say in a
15 polluted area in New York City or in New
16 Jersey, relative risks run from about 1.5
17 to 2.5. Sometimes as high as 3 and-a-half.
18 Again, what I would try to do is pull those
19 out and make these specific to his
20 situation, his address and number of years
21 he lived there.

22 The final area that I mentioned,

1 the alcoholic consumption, he would be at
2 the high end of alcoholic consumption.
3 There are several studies that show that his
4 relative risk would be, and, again, it
5 depends on which study you pick, somewhere
6 between, I would say 3 and 4.7. For
7 example, the DeStafanie article, which you
8 may be familiar with, shows a 4.7 for a
9 heavier consumption of beer. So as
10 ballpark, those are the kind of values I
11 would be focusing on.

12 Q Thank you. Can you think of
13 anything else in terms of his general
14 category of Mr. Harvey's risk factors for
15 lung cancer that you haven't mentioned?

16 A Well, I can say I've tried to pick
17 the most important ones that I thought right
18 now are the most important. The one
19 caution, I am still receiving records and
20 depositions. Because I've gotten most of
21 the information that I think that I'll use,
22 I don't anticipate that my opinion will

1 change that much, but there may be some new
2 information that would come in that may help
3 to support my opinions rather than change
4 them.

5 Q I understand, doctor. The
6 practical reality of the situation and such
7 that things like that do occur, however, if
8 you do any additional work or review any
9 additional materials here after that in any
10 way affect or cause you to have additional
11 or different opinions, we would expect to be
12 timely notified and you would need to be
13 made available for a subsequent additional
14 deposition, but that may or may not present
15 later, so I'm sure you're aware of that and
16 I know your counsel is as well. I'm
17 interested in what you've prepared for today
18 and are prepared to testify to at this time.

19 Let me move on to the third
20 general area having to do with his
21 progressive development of interstitial
22 fibrosis documented in the medical records

1 since approximately 1995.

2 You mentioned mechanisms of
3 damages in the lung and pleura, these being
4 important factors in your view for
5 adenocarcinoma. Other than what you've
6 mentioned about those, have you formed any
7 other opinions as of today in that general
8 category that you intend to express at
9 trial?

10 A I think generally, as I indicated,
11 just to kind of summarize in my own mind,
12 I've talked about the fact that a lot of the
13 materials he was exposed to throughout his
14 occupational career, including the asbestos
15 and silica and so forth, were materials that
16 would cause pulmonary fibrosis and the
17 notice that we see as development of
18 fibrosis we often see the development of
19 lung cancer. I think I've testified about
20 that link today and so I'm not going to go
21 into that any more, but that's something
22 I've worked in for many years. I tend -- I

1 specialize in understanding mechanisms of
2 disease and I probably talked about that as
3 well.

4 Q Could you be more specific about
5 what mechanisms?

6 A Well, the mechanisms for, like I
7 say, we consistently see pulmonary fibrosis
8 associated with an increase in lung cancer
9 regardless of whether the interstitial
10 fibrosis was caused by asbestos or caused by
11 silica or caused by chromium or something,
12 ozone. When we see the scarring in the lung
13 or even hydrofluoric acid, which scars the
14 lung, and to my knowledge he wasn't exposed
15 to, but these are the types of materials
16 that once the lung is scarred, we see an
17 increase in tumor formation.

18 Now, the tumors, just from the
19 research I've done, either tend to be
20 directly associated with the scarring --
21 there's been a debate in the past whether
22 the scars came first or the cancer came

1 first and caused the scarring, but, in fact,
2 when we see the scarring first, we're not
3 surprised then to see cancer develop later.
4 There have been a lot of like biological
5 studies, genetic studies to try to
6 understand what the relationship is between
7 that fiber formation in the tissues and the
8 development of the subsequent tumor. I
9 probably talk less about the molecular
10 biology than about the fact that simply when
11 we see it, that there's a relationship, but
12 there have been attempts to try to
13 understand that relationship.

14 Q Do you believe in phenomena of
15 so-called scar carcinoma or do you believe
16 that the presence of fibrosis from whatever
17 agent, including asbestos, is more
18 indicative of the dose of the carcinogen
19 involved?

20 MR. MURPHY: Objection to the
21 form, restrictive.

22 THE WITNESS: Let me try and

1 answer your question. You actually asked
2 two questions. The first question is about
3 what we've over the years and more in the
4 past and present call scar cancer. I
5 believe that there is scar cancer. I have
6 seen in pathology tumors grow out of scars
7 and directly associated with the scar tissue
8 and I think other pathologists have seen the
9 same thing, so that's pretty well accepted
10 among pathologists.

11 Second, and I'm -- the second
12 question is the one I'm having a little
13 difficulty understanding what you're asking.
14 Maybe you could ask it again and see if I
15 could answer it. The relationship between
16 dose and scarring; is that what you're
17 asking?

18 Q You're familiar with the
19 literature that observes that the presence
20 and extent of fibrotic responses someone may
21 present with after an exposure to a
22 carcinogen may only be an indicator of dose

1 as a dose issue more than a molecular
2 biologic precursor in a sequence of biologic
3 response steps between fiber deposition and
4 tumor formation? Are you familiar with
5 those general subjects?

6 A Yes, I am.

7 Q I'm interested to know your
8 thoughts on whether or not the presence and
9 extent of fibrosis is more a dose indicative
10 of a dose to a carcinogen than it is
11 involved in scar cancer biologically.

12 A Well, let me try to answer the
13 first part. What you're actually referring
14 to is what we call a biological marker and
15 you can say that the formation of scar
16 tissue in the lung is a biological marker of
17 exposure to a material that is damaging the
18 lung whether it's a carcinogen or not. So
19 let's take an example. Let's take silica.
20 If there's exposure to silica, a biological
21 marker in the silica exposure is a formation
22 of the silicotic nodule because they're

1 fibrotic nodules. Does that mean that
2 cancer will develop out of those nodules?
3 No, it doesn't. It simply is one step or
4 two steps, maybe even three steps down the
5 road towards the cancer development, but
6 cancer may never develop.

7 The worst that a person may
8 develop is simply a consolidation of the
9 lung and -- and the fibrosis and lose that
10 ability to exchange oxygen but yet never get
11 cancer.

12 Q In Mr. Harvey's case do you
13 believe he has asbestosis?

14 A Yes, I do. He has pleural
15 thickening that begins fairly early and he
16 has indications of asbestos exposure. Like
17 I say, that's my own -- my own opinion based
18 on the extent of the pleural thickening he
19 has and his exposure and it seems to be
20 progressive. As we were just saying, that
21 could be a biologic marker of the asbestos
22 exposure.

1 Now, it may also be a marker of
2 some of the other exposures that also cause
3 fibrosis, but I think it's interesting that
4 it appears to have started early and it
5 appears to be progressive and worsening with
6 time. That will be consistent with
7 mesothelioma.

8 MR. MURPHY: You misstated that
9 last word. I do not want to but in.

10 THE WITNESS: Yeah, okay.
11 Consistent with lung scarring. I think
12 that's what we were talking about.

13 BY MR. PURCELL:

14 Q Yeah. Do you believe Mr. Harvey
15 has any other diseases associated with his
16 prior history of cigarette smoking?

17 A There were indications in '95 of
18 emphysema in the x-ray readings that were
19 done by Dr. Eugene Ong. Emphysema is
20 associated with cigarette smoking. However,
21 in x-rays that were examined by Dr. Ong
22 in 1999, he did not see the emphysema, so in

1 my mind I have to assume that emphysema was
2 not present and it was not seen later. It
3 is not the type of thing that goes away.

4 The other major health problem
5 that he had was a circulatory problem and
6 the fact that he had lost part of his limb
7 because of that and I haven't decided in my
8 own mind where that peripheral vascular
9 disease that he was exhibiting in the
10 gangrene that he developed in his foot
11 was -- had anything to do with cigarette
12 smoking or not, so I haven't been able to
13 do -- come to any conclusion about that. I
14 haven't really thought that much about it.
15 I think it's interesting, but there are
16 other things that also contribute to
17 peripheral vascular disease.

18 Q Have you seen reports that
19 describe his loss of or his amputation to be
20 a consequent to his smoking through his
21 lobectomy procedure?

22 A Like I say, I haven't focused on

1 that and haven't tried to really consider
2 whether that was associated with cigarette
3 smoking. You had asked me about other
4 diseases and that's just not one that I've
5 analyzed.

6 Q Do you intend to offer an opinion
7 that the only disease in Mr. Harvey that is
8 related to his cigarette smoking history is
9 lung cancer?

10 MR. MURPHY: Objection to the
11 form.

12 THE WITNESS: The one that I was
13 asked to specifically examine was the lung
14 cancer that he had and the opinions that
15 I've developed have been based on the
16 assignment that I had received, as a second
17 part of what we've discussed earlier, is to
18 look at the risk factors for developing that
19 lung cancer. I wasn't asked to look at
20 peripheral vascular disease. I wasn't asked
21 to look at emphysema, but, as I said, I did
22 note it in the medical records and then note

1 that it wasn't seen later. So you have
2 asked me a broad question about diseases and
3 I tried to answer you.

4 BY MR. PURCELL:

5 Q As you sit here now, would it be
6 fair that based upon your tasking that you
7 were given, you're not intending to offer
8 opinions about other medical conditions in
9 Mr. Harvey related to his prior history of
10 cigarette smoking other than his lung
11 cancer, correct?

12 MR. MURPHY: Objection to the
13 form.

14 THE WITNESS: I just was going to
15 look at the disclosure again.

16 MR. PURCELL: Sure. Can we can
17 take another five-minute break at my request
18 and that will give you time to look at that,
19 we can go off the record for a few minutes.
20 Thank you.

21 (Recess)

22 (The reporter read the record as

1 requested.)

2 THE WITNESS: I took just a moment
3 and looked through the disclosure again.
4 Based on the disclosure and what I
5 understand my assignment to be, I would
6 expect to offer opinions on lung diseases,
7 including lung cancer, and their mechanisms
8 of development and also I may, as we have
9 discussed earlier today, indicate not only
10 the risk factors associated with the
11 development of those diseases, but how those
12 would decline if a person had stopped
13 smoking at various intervals.

14 Q Other than that would there be
15 anything else?

16 A No.

17 Q Then as to that could you tell me
18 what your opinions are in that respect?

19 MR. MURPHY: Is this aside from
20 what we've already talked about today?

21 BY MR. PURCELL:

22 Q Yes, you need not repeat anything

1 you've already mentioned, doctor.

2 A Yeah, I think we've already talked
3 about various risk factors. I've given you
4 some broad approximate figures for risks
5 associated with his other exposures, whether
6 they those are occupational, environmental.
7 Beyond those and lifestyle factors, I think
8 those would be the main ones that I would
9 testify about at trial and, again,
10 associated with pulmonary diseases.

11 Q Do you believe Mr. Harvey has
12 emphysema?

13 A No, I don't.

14 Q Does he have emphysematous changes
15 to his lungs?

16 A When I looked at his lung tissue,
17 I did not see emphysematous changes in the
18 alveoli that I looked at. They appeared to
19 be normal.

20 Q Are you familiar with others who
21 have looked at pathology or other clinical
22 information regarding Mr. Harvey who had

1 described emphysematous changes?

2 MR. MURPHY: Aside from what we
3 talked about already or --

4 MR. PURCELL: Well, that would
5 include everything.

6 MR. MURPHY: You want him to
7 answer, bring back information that we
8 talked about?

9 MR. PURCELL: Yes.

10 THE WITNESS: Well, I think the
11 most important one that I mentioned was the
12 x-ray work that was done in '95, which
13 indicated that Dr. Ong felt that there was
14 emphysema in the lung and then later on he
15 did not feel there was emphysema and myself,
16 in looking at the tissues, I didn't see
17 emphysematous changes either.

18 Q Have you read the deposition from
19 him?

20 A From Dr. Ong?

21 Q Yes.

22 A No, I have not.

1 Q Have you been asked to be provided
2 copies of all the depositions of medical
3 witnesses that have been taken in the case?

4 A Yeah, I would expect I would be
5 provided those and I've asked that I be
6 given those.

7 Q Is it your understanding that
8 you've received them comprehensively?

9 A My understanding is I've received
10 everything that's available, but I'm still
11 receiving records. In fact, we just got
12 some records a couple of days ago.

13 Q What methods do you use to review
14 records and let me be more specific if I
15 can. The record should indicate that during
16 one of the breaks I looked the files in the
17 box, as we've referenced them. They're in
18 Redwells and individual folders and they're
19 probably at least two and a half feet lineal
20 in length, extensive documents, and as best
21 I could quickly look at them, you are
22 correct, I didn't see any Post-Its or

1 notations or any kind of handwriting that I
2 would understand to be from you.

3 A Uh-huh.

4 Q I understand that you have not
5 prepared any handwritten notes or a
6 typewritten report. What I want to ask you
7 now is how do you go about going through
8 such a volume of material and considering it
9 in arriving at your opinions in a case like
10 Harvey?

11 A In a pretty similar way to how I
12 go through all medical records and records
13 that I'm provided. I'm used to going
14 through large amounts of records. I've done
15 it for years. It's just a matter of sitting
16 down and -- and reading through the records.
17 Sometimes I'll go to the index if they're
18 indexed and see what -- what the index shows
19 and I'll go to specific pages and then I'll
20 read the whole thing and usually I can read
21 these things fairly quickly.

22 So even though there appears to be

1 a lot, it doesn't take that long to read
2 through it. A lot of it is a matter of
3 simply being acquainted with the document.
4 For example, if it's an insurance document,
5 it may be interesting that he had applied
6 for disability insurance, but beyond that
7 I'm not interested in the rest of the
8 document, so it doesn't take me very long to
9 read through or glance through a document
10 like that. What I try to do is I do that to
11 draw in my own mind a picture of what this
12 individual's lifestyle is like, what his
13 occupational history was like and so forth,
14 and that's what I've done in this case. So
15 I've described for you today that picture
16 that I have in my own mind as to what his
17 exposures may have been to materials that
18 may have led to his lung cancer and lungs
19 disease.

20 Q It would appear from the invoices
21 in Exhibit 1 that your record review, even
22 though they were invoiced to the Jones Day

1 firm in March and April, correspond to a
2 period of review of the records that spans
3 January and February of this year; is that
4 right?

5 A That's correct.

6 Q Who is Mr. Chad McMullan?

7 A Mr. McMullan is a scientist that
8 works for me in the office.

9 Q What's his particular background
10 or specialty?

11 A He has a background in molecular
12 biology, environmental sciences, disease
13 development.

14 Q Have you spoken to any other
15 expert witness in this case about the Harvey
16 matter?

17 A No, I've not.

18 Q How does Mr. McMullan communicate
19 the results of his review of records to you?

20 A In a meeting typically where we
21 will sit down and have a discussion on
22 Harvey. We may have a discussion every two

1 weeks that's been scheduled and I'll sit
2 down with him and he'll say I've read such
3 and such record and I'll remember that
4 record and we'll discuss that. So it's
5 another set of eyes.

6 Q Do you break down the materials by
7 any category that you yourself would review
8 and he would review others or how does that
9 work?

10 A No. In fact -- well, it depends
11 on how many materials that we have. In the
12 case of Harvey that's not a lot of
13 materials, so I would expect that he would
14 read through these, I read through all the
15 materials as well, and then we discuss them.
16 I may have an assignment for him on, you
17 know, to look and see if -- if we have
18 information on a particular risk factor, for
19 example, for welders, and he'll check and
20 see if we do. But those are discussions
21 that we have within a meeting.

22 Q Do you or he take notes during any

1 of the meetings?

2 A No. No, we typically discuss
3 these directly. We'll review them. There
4 have been times I have been asked to prepare
5 expert reports, that's not the case here,
6 and so I haven't written a report. If I'm
7 working on a report, typically what I'll do
8 is do an outline while we're going through
9 this, but I haven't done that here.

10 Q How much time do you believe you
11 and Mr. McMullan have spent meeting about
12 the Harvey matter together?

13 A Well, let's see. We began in
14 January and -- let me get the invoices
15 myself. We began in January and probably
16 met once or twice a month to discuss these.

17 Q Can you tell me any estimate of
18 how much of the total hours in consulting
19 time would be time where you and
20 Mr. McMullan were meeting about Harvey?

21 A I can't tell you a specific amount
22 of time in that -- and it really depends on

1 even how you -- you define meetings. I may
2 walk over to the desk and talk with him
3 about some issue that I've read. I don't
4 know if you would describe that as a meeting
5 or not. If you would assume that we meet
6 once or twice a month and the meeting is two
7 or three hours, then it may be, say, six
8 hours a month just as a rough estimate.

9 Q Who is the research assistant
10 identified in the invoices as part of
11 Exhibit 1?

12 A In this particular case that's
13 probably two people that are just simply
14 their hours are combined.

15 Q Okay.

16 A Debbie Williams is the one person,
17 and Christina Burnett is the second person
18 and I believe both of these people have done
19 work on Harvey.

20 Q Did they prepare any notes or any
21 writings?

22 A No.

1 Q Are any of the meetings recorded
2 in any way?

3 A No.

4 Q Does your office have a system of
5 assignment tracking?

6 A No, we don't. People submit the
7 amount of time that they worked on a project
8 and that's what you see in front of you.
9 We're a small enough group that we don't
10 have a spreadsheet or something that says,
11 you know, this person is working on this and
12 that one on that.

13 Q Are any of your colleagues Thomas
14 & Thomas told not to prepare notes?

15 A No.

16 Q If there were notes prepared,
17 would they be incorporated in your file
18 typically?

19 A By whom?

20 Q By yourself or your office.

21 A If I had prepared notes, and like
22 I say, I haven't on this case, if I had done

1 an outline, I was preparing a report, they
2 would be incorporated in my file. If others
3 had assignments and the assignments were to
4 prepare a set of notes on such and such,
5 they would also be on my file, but they
6 weren't assigned that.

7 Q How many clients does Thomas &
8 Thomas have?

9 A Currently?

10 Q Yes, sir.

11 A I'm not sure of the exact number,
12 but approximately a dozen.

13 Q Who are they?

14 MR. MURPHY: I'm going to object.
15 I don't know where we're going with this,
16 but it seems to be far afield and -- I mean
17 maybe if you can explain the reason why you
18 need it, but if we start to get into this
19 here, I think we're going to see it in every
20 deposition. I just want to make sure we're
21 going down the right track.

22 MR. PURCELL: I understand and if

1 the witness wants to refuse to respond, he
2 can do that. This was the subject of
3 several questions by your colleague
4 Mr. Crist in New York City earlier in the
5 week in deposing Dr. Whelan.

6 MR. MURPHY: I understand that
7 some things may be more public than others
8 and some things may be more publicized in
9 the past than others. That's all I sort of,
10 you know, get into. If I ask, you know, I
11 mean if we're saying it's good for
12 Dr. Whelan, then it's good for Dr. Thomas,
13 then it's good for Dr. Hammer or, you know,
14 good for Dr. Ong --

15 MR. PURCELL: It's not that, it's
16 more an area that we want to be prepared on
17 depending on how it's handled subsequently
18 and this is my discovery opportunity to
19 learn who are the clients of Thomas &
20 Thomas.

21 MR. MURPHY: Well, I guess if the
22 witness wants to answer, I certainly won't

1 interfere from him answering. I can't
2 really see where it's leading and I'm not
3 sure you told me. I think I know where it
4 leads with regard to Dr. Whelan.

5 MR. PURCELL: So maybe it leads in
6 the same direction.

7 MR. MURPHY: Well, I mean it's
8 clear when you look at the past at what
9 Dr. Whelan has done, where it leads. I
10 don't think there's any evidence that it's
11 going to lead anywhere here, but if
12 Dr. Thomas wants to answer in some way --

13 THE WITNESS: I've tried to answer
14 your questions and I'll try to answer this
15 one the best I can. Some clients I can't
16 disclose because I have confidentiality
17 agreements with them.

18 I do work in Thomas & Thomas
19 Technologies with foreign governments such
20 as the Government of Thailand, China, the
21 World Health Organization, United Nations
22 Development Program, with the Federal

1 Government. Let's see. I was trying to
2 think if we have any current Federal
3 contracts. I have a current Federal
4 contract with the Department of Defense. We
5 don't currently had one with EPA. We've
6 done work with EPA. Food & Drug
7 Administration, Department of
8 Transportation, Coast Guard, and Department
9 of Energy. The ones that -- we've also done
10 work for local and state governments and
11 individual groups such as Northern Virginia
12 Health Alliance, which is a group of
13 hospitals and so forth, and dealing with
14 such things as terrorism and bioterrorism.

15 The ones that are most sensitive
16 about disclosure are industrial clients, but
17 I can indicate that we've done work for
18 pharmaceutical companies, for pesticide
19 companies, for, I guess you'd say cigarette
20 companies through the law firms associated
21 with them, and other types of companies that
22 have specialized types of materials they

1 make such as electronic companies and -- and
2 microchips and transistors, so that kinds of
3 gives you an overview of the types of work
4 we do.

5 BY MR. PURCELL:

6 Q What cigarette companies other
7 than Reynolds?

8 MR. MURPHY: Again, objection to
9 the form. I think through attorneys, I
10 believe, was his qualification.

11 THE WITNESS: The work that I have
12 done I think mostly has been with Jones Day
13 and that's been, I believe, mostly supported
14 by R.J. Reynolds. I don't believe there's
15 been other work with Thomas & Thomas. There
16 may have been some payments made by other
17 law firms through some of the testimony that
18 I've done, but I'm just not aware of those.

19 BY MR. PURCELL:

20 Q Which of these clients that you've
21 just enumerated other than the cigarette
22 companies have hired Thomas & Thomas or

1 yourself regarding tobacco and/or cancer
2 issues?

3 A So excluding the work I've done
4 for Jones Day, most of the companies that
5 I've worked for are organizations such as
6 the United Nations and World Bank and so
7 forth involve some aspects of cancer in that
8 that's one of the areas I specialize in, or
9 pulmonary diseases, sometimes such things as
10 emphysema and COPD. Some are more
11 specialized towards the development of drugs
12 and pharmaceuticals for specific products
13 and those may or may not be directly related
14 to cancer, they may be related to kidney
15 effects or something of that nature which are
16 not cancer based.

17 Q Other than the cigarette
18 companies, which of these clients have had
19 you do work regarding tobacco?

20 MR. MURPHY: Again, objection to
21 the form. I believe he stated he worked for
22 attorneys on behalf of the cigarette

1 companies.

2 THE WITNESS: I'm not sure I
3 understand your question. As I understand
4 what you just asked, is if you eliminate the
5 tobacco companies what are the companies I
6 have worked for on tobacco; is that it?

7 BY MR. PURCELL:

8 Q For example, the work you've done
9 for the Thailand Government or China, did
10 any of that work have anything to do with
11 tobacco?

12 A The work in Thailand, some of the
13 early work dealt with air pollution and
14 there was a very small tobacco component to
15 that, although that was actually eliminated
16 further on from consideration in looking at
17 the overall public health risk and the focus
18 of air pollution.

19 The work in China has not directly
20 dealt with tobacco or indirectly that I can
21 think of. It may be other than I've given
22 some lectures and I may have included some

1 information on tobacco in the lectures.

2 Q Same question as to the World
3 Health Organization.

4 A I haven't worked in the World
5 Health Organization on cigarette issues.

6 Q Same question with the United
7 Nations.

8 A No, not the United Nations.

9 Q Can you think of any others from
10 the list you enumerated other than tobacco
11 companies or their associated law firms or
12 some aspect of the air pollution work for
13 Thailand, any of those others that would
14 deal with tobacco?

15 A Well, tobacco is typically not the
16 main issue. They are usually interested in
17 developing a product. For example, the
18 product may be a product to treat pulmonary
19 diseases and without disclosing confidential
20 information, to assess that type of product,
21 I would also have to assess whether there
22 may be some confounding problems with

1 smokers. So it's not a major part of the
2 work, but it could be, while it could be a
3 minor part of the work.

4 Q Are any of the efforts of Thomas &
5 Thomas that you described for these clients
6 typically reduced to a report?

7 A It varies from client to client.
8 Depends on what the client wants. The most
9 common response is to review materials and
10 either go into their offices or have them
11 come to our offices and discuss the
12 materials, which then does not involve a
13 report. There are times that I have been
14 asked to produce reports, although that's
15 more rare than simply going through them and
16 analyzing the information and providing
17 input.

18 Q Who owns the results of the
19 efforts of Thomas & Thomas for these
20 clients?

21 A If a report is produced, and it's
22 paid for by the company, the company owns

1 the results. If it's simply a consulting
2 activity and input is provided, I guess
3 there's nothing to own.

4 Q Do you have a standard letter of
5 engagement or contract that Thomas & Thomas
6 enters into with any of your clients?

7 A Although we have different
8 contracts, depending on what's needed,
9 whether it's a few hours consulting or
10 whether it's a two- or three-year activity,
11 they vary from agency to agency and group to
12 group. I mean they vary widely.

13 Q Do you have copies of those in
14 your possession that you've entered into
15 with the tobacco companies or their
16 affiliated law firms?

17 MR. MURPHY: Object to the form.
18 I'm not sure "affiliated law firms" is the
19 proper way to describe the relationship and
20 it's also vague.

21 THE WITNESS: We have long-term
22 clients we've been involved with for years.

1 Thomas & Thomas Technologies has been in
2 this business for over 20 years and there
3 are various types of agreements. In the
4 past I'm sure that we've received letters of
5 request. Sometimes their cover letters to
6 materials such as those that are sent saying
7 these are the medical records for your
8 analysis. That constitutes an agreement for
9 us because we have an ongoing relationship.
10 Some of the agreements are more a typical
11 contract where it's a two-year contract for
12 half a million dollars and we're supposed to
13 provide so many hours of consulting and may
14 or may not produce a report.

15 Like I say, it's very difficult to
16 respond because they vary tremendously and
17 we've received written assignments from the
18 law firms just as we have from others and
19 the --

20 BY MR. PURCELL:

21 Q Did you --

22 A We've -- we've discussed rates and

1 so forth and come to an agreement and that's
2 kind of where we stand. Specific to Harvey
3 we've been asked to do certain things.
4 We've talked about the time period, the
5 payment, and there's been an agreement to go
6 ahead with it.

7 Q Have you produced all of the
8 documents that would be responsive to the
9 Notice of Taking Deposition and Request for
10 Production of Documents and Things at
11 Deposition which is part of Exhibit 1 in
12 this case?

13 A I tried to produce everything that
14 was physically possible to produce. For
15 example, I brought these documents in. It
16 requested a copy of my CV, which I provided
17 to the attorneys, billing records which I
18 provided to you. There are some documents
19 that are so expansive such as all of the
20 scientific publications that I've reviewed
21 over the years that are tens of thousands of
22 articles and it would be impossible to

1 provide to you, so what I've tried to do is
2 provide to you some of the main references
3 that I would use. I've tried to be
4 responsive to this as much as I could.

5 Q Have you produced all notes,
6 memoranda, correspondence, reports e-mails
7 or faxes sent between you and anyone else in
8 the case?

9 A Yes, what I have provided is in
10 that box and I guess in this folder.

11 Q Are there any correspondence,
12 memoranda from Thomas & Thomas in the box
13 because there doesn't appear to be any in
14 Exhibit 1?

15 A I think the only thing that, we
16 had started working this in January, and
17 we've got the billing records and those are
18 the only things that have been provided
19 back. We have not done a report for this.

20 Q Was your assignment communicated
21 to you and/or Thomas & Thomas only orally by
22 Jones Day in this case?

1 A Yes.

2 Q Do you have a letter of engagement
3 or retainer that you're operating under in
4 the Harvey case with either R.J. Reynolds or
5 Jones Day?

6 A We were given a very specific
7 assignment which I think is described in the
8 disclosure and discussed that in January
9 when we started this and since that time
10 we've been provided information and have
11 billed based on that information. That's
12 consistent with how we've -- we do work with
13 clients that are ongoing clients and have
14 been for years.

15 Q Getting back to my question, is
16 there a retainer or letter of engagement
17 with Jones Day or Reynolds in the Harvey
18 case?

19 A No, that's not typically how we do
20 that.

21 Q What information do you need to
22 know to get involved in a tobacco case for

1 Jones Day or Reynolds?

2 A I typically request all the
3 medical records and depositions and expert
4 reports that may be associated with the
5 disease and I will do a preliminary review
6 of those and then we will discuss the extent
7 to which we'll continue our review. There
8 have been times when I've been sent even a
9 selected set of medical records. I've
10 glanced through them and said well, this is
11 something that looks interesting for me to
12 review this, however, if you so want me to
13 review it, I'll have to have a complete set
14 and they will send me a complete set. So I
15 try to get a preliminary indication as to
16 what some of the issues are and whether it's
17 something I'm interested in.

18 Q Have you been asked in your
19 tasking with Jones Day to communicate with
20 them only orally about the case?

21 A No.

22 Q Is that your understanding of how

1 they wish you to proceed?

2 A Well, with any client, whether
3 it's Jones Day or Dow Chemical or Pfizer
4 Pharmaceutical, we would not go outside of
5 the analysis that we were doing and discuss
6 our review with anybody outside of our
7 company without prior permission from the
8 client. Same thing would be true actually
9 with the Environmental Protection Agency or
10 with others. We would seek their approval
11 in that they're paying for the analysis and
12 they have concerns about some of the
13 information being released before they have
14 seen it.

15 Q That's not my question.

16 A I'm sorry. I thought that was.

17 Q My question was do you have an
18 understanding that you are to communicate
19 with Jones Day in the Harvey matter only
20 orally?

21 MR. MURPHY: Do you want him to
22 answer that new question?

1 MR. PURCELL: Or we can read back
2 the prior one.

3 MR. MURPHY: You've switched the
4 words and I'm just objecting to your
5 preface. It's a different question and I
6 think your other question was vague and
7 that's fine.

8 MR. PURCELL: We can go back and
9 read back the prior one. That's fine.

10 MR. MURPHY: I'm prewarning you
11 that it's vague and he already gave an
12 answer to the one, interpretations of it.

13 (The reporter read the record as
14 requested.)

15 THE WITNESS: Yeah, and I think I
16 answered that. That's my understanding of
17 how they or any client would wish me to
18 proceed.

19 BY MR. PURCELL:

20 Q That you were to communicate with
21 them only orally, not in writing unless
22 asked; is that correct?

1 A No.

2 MR. MURPHY: Objection. That's
3 what goes back to there was a vague question
4 which was only with Jones Day and that's the
5 one I thought you wanted read back and
6 that's why the answer was as it was.

7 THE WITNESS: No, that's not what
8 I said.

9 BY MR. PURCELL:

10 Q I know it's not what you said.
11 I'm trying to find out what the answer is to
12 my question.

13 Do you have an understanding that
14 you are to communicate the results of your
15 consulting work in the Harvey matter only
16 orally to Jones Day?

17 A Do I have an understanding? I
18 don't know what you mean by that. I think
19 what I've described is how we do our work
20 for various clients, including Jones Day,
21 and based on the specific assignment that we
22 received from them, we're working to

1 complete that assignment. They have not
2 told me not to take notes or those types of
3 things, so that's -- if that's what you're
4 trying to get at, but what we're doing for
5 them is I think my answer is consistent with
6 what we do for any client based on the
7 assignment.

8 Q Have you sent any letters to Jones
9 Day regarding Harvey?

10 A No.

11 Q Have you or your office prepared
12 any writings whatsoever in connection with
13 the Harvey matter other than the two
14 invoices attached as part of Exhibit 1?

15 MR. MURPHY: If I could just
16 interject, you can squabble over who
17 prepared it, but those other list of cases
18 and the other list was, in a sense, prepared
19 for this matter.

20 BY MR. PURCELL:

21 Q Yeah, setting aside anything in
22 Exhibit 1, anything else?

1 A No, I haven't prepared anything
2 other than what we have here.

3 Q Nor has anyone at Thomas & Thomas?

4 A No.

5 Q Why don't you take any notes when
6 you review extensive documents in a case
7 like this?

8 A That's not how I work. I haven't
9 worked that way for years. It may be that
10 I'm used to reading these types of
11 documents, but unless, like I say, I have to
12 produce a report, of which I will actually
13 start an outline while I read, I don't take
14 notes.

15 Q How did you know when you were
16 originally contacted in Harvey that you were
17 not expected to prepare a written report?

18 A Like I say, the description of --
19 of what I was asked to do is right here and
20 it didn't indicate that I had to prepare a
21 written report. I don't know in Harvey if I
22 had asked, but one of the questions that I

1 typically do ask is if I need to prepare a
2 written report and I may have asked that on
3 Harvey. I actually don't remember. But
4 there was a disclosure which was prepared
5 which I actually reviewed but didn't write.

6 Q By the way, in your prior
7 reference you're referencing the expert from
8 the disclosure of expert witnesses submitted
9 by Philip Morris and Reynolds in the Harvey
10 case. When did you review the language
11 first?

12 A I'm not sure. I've got to assume
13 that it was some time in February, but I'm
14 not sure when I reviewed it first. I'd have
15 to look and see when this was actually
16 submitted. It was probably shortly before
17 this was submitted.

18 Q Is it your testimony that you
19 reviewed this specific language in this
20 designation about your testimony prior to
21 receiving any information to review in the
22 Harvey case?

1 MR. MURPHY: Objection. I think
2 that misstates what he said.

3 THE WITNESS: No, that's not
4 correct. In fact, much of what is in that
5 box we had already received when I reviewed
6 that statement.

7 BY MR. PURCELL:

8 Q When did you receive the materials
9 that are in the box?

10 MR. MURPHY: Objection. Asked and
11 answered probably within the first ten
12 minutes this morning.

13 THE WITNESS: Most of those
14 materials were sent in January. They may
15 not have been sent over at the same time,
16 but most of them were delivered in January.

17 BY MR. PURCELL:

18 Q How did you know that you weren't
19 to prepare a written report at the time you
20 received those materials first and started
21 reviewing them?

22 A Like I say, I was basically asked

1 to review these and I probably asked at the
2 beginning whether there was going to be any
3 written report produced.

4 Q What were you told?

5 A What was I told? I don't know. I
6 assume that I was told it was simply a
7 disclosure and at some point I would be able
8 to review, but that's just supposition
9 because I don't -- I wasn't asked to prepare
10 a report and I haven't done one.

11 Q Have you formed any opinion as to
12 whether or not Mr. Harvey was ever addicted
13 to cigarette smoking?

14 A No, I haven't really formed an
15 opinion about that. That wasn't one of the
16 issues I was asked to look at.

17 Q In 1994 did you consider nicotine
18 to be addictive?

19 A In 1994?

20 Q Yes.

21 MR. MURPHY: I'm going to object
22 on the grounds of relevance. My

1 understanding is that's within a time period
2 that's not relevant to the case, but subject
3 to that you can go ahead and answer.

4 THE WITNESS: Depends on -- again,
5 these are terms such as, we used cause
6 earlier, addiction is a term that's widely
7 used, improperly used. There are scientific
8 descriptions of addiction. I mean there are
9 other terms that, such as habituation that
10 are actually closer to what Mr. Harvey's
11 situation was.

12 He stopped smoking for -- three
13 different times for about a year and-a-half.
14 That would indicate to me that he was not
15 "addicted" depending on how that's defined
16 to cigarettes, that he could give it up as
17 he wished and then pick it back up again.

18 BY MR. PURCELL:

19 Q Is it your view that anyone who is
20 successful in quitting smoking was never
21 addicted to nicotine?

22 A No, that's -- that's not what I

1 said. What I said was that, is that in his
2 particular case he seemed to be able to stop
3 for an extended time period cold turkey, if
4 you will, without continuing to smoke and so
5 he did not seem to have what we would
6 consider the classical addiction that you
7 find in some drugs that are addictive such
8 as heroin and so forth. So, no, I didn't
9 widen that to other people in that some
10 people have a lot of difficulty stopping
11 their smoking and some people seem to have
12 less difficulty and -- but it's not an area
13 that I focused on in my analysis, it's not
14 an area that I particularly dealt with
15 before. All I'm responding to you is based
16 on my scientific knowledge having studied
17 this in school and having been involved in
18 pharmacological studies.

19 Q In 1994 did you believe nicotine
20 was not addictive?

21 MR. MURPHY: Same objection.
22 Relevance. I think the plaintiffs'

1 pleadings suggest that that's a time period
2 that's not at issue in this case.

3 THE WITNESS: I don't know what
4 the focus is of 1994 on nicotine, but
5 nicotine does not appear to follow the
6 classical types of addictive responses that
7 other materials are highly addictive. Like
8 I say, if it were, people that smoked would
9 have a very difficult time giving up smoking
10 and some people are able to stop smoking
11 without too much difficulty. So it just
12 doesn't follow the classical level of
13 addictive response.

14 BY MR. PURCELL:

15 Q Today do you believe nicotine is
16 not addictive?

17 A Well, like I say --

18 MR. MURPHY: Objection on
19 relevance.

20 THE WITNESS: It's not something
21 I've looked at, but from what I know,
22 certainly from the studies I've read on the

1 behavior of people that have stopped
2 smoking, it doesn't appear to be the
3 classical addictive material. It falls more
4 in what we call habitual rather than
5 addictive, where the people develop habits
6 in using it.

7 BY MR. PURCELL:

8 Q Name three substances that you
9 believe are addictive.

10 A Well, heroin is addictive,
11 morphine is addictive, several of the
12 painkillers can be addictive, Percocet is
13 addictive, and people become addicted to
14 those and have difficulty stopping.

15 Q In the same sense that you used
16 the term "addictive" regarding heroin,
17 morphine, painkillers/Percocet, do you
18 believe nicotine to be addictive?

19 A No, it doesn't fit the classical
20 addiction that these others are. Now, that
21 doesn't mean that some people have
22 difficulty in stop smoking and that some

1 people have to use such things as nicotine
2 patches, again, this is outside of my
3 expertise, but that's common knowledge, that
4 some people need to use nicotine patches to
5 stop smoking and some people are able to
6 stop cold turkey.

7 Q What diseases do you acknowledge
8 cigarettes cause?

9 MR. MURPHY: Objection to the
10 form.

11 THE WITNESS: Well, again there
12 are a lot of diseases that have risks
13 related to cigarette smoking. We've talked
14 about cancer, lung cancers. Depending on
15 the type of lung cancer, some have a higher
16 risk, some have a lower risk.
17 Cardiovascular disease is -- has a risk
18 related to lung -- or cigarette smoking,
19 emphysema is another one. There are
20 reproductive effects that are related to
21 cigarette smoking such as low birth rate in
22 children, there are some other cancers that

1 depending on the study may or may not be
2 related to cigarette smoking such as kidney
3 cancer. Depends on the study and whether
4 you believe the statistical relationship. I
5 think those are some of the main ones that
6 people associate with cigarette smoking.

7 BY MR. PURCELL:

8 Q I'm interested to know
9 specifically what diseases you, Dr. Thomas,
10 acknowledge cigarettes cause. Would those
11 that you've just indicated fit into that
12 category?

13 MR. MURPHY: Objection to the
14 form.

15 THE WITNESS: Well, if you mean by
16 cause that there is a consistent statistical
17 association between these diseases and
18 cigarette smoking, then you can say there's
19 a causal relationship, but, again, we don't
20 know the relationship biologically between a
21 lot of these that appear to be increased
22 levels of disease associated statistically

1 with cigarette smoking because we don't have
2 any laboratory animal models to study as we
3 do for probably asbestos and some of the
4 other ones we mentioned earlier.

5 Q Of the clients that you have at
6 Thomas & Thomas, which is the largest in
7 revenue in the last three years?

8 A I'm just trying to think back.
9 This past year I'm not sure, but if I go
10 back the two previous years, I'd probably
11 have to say the Federal Government is the
12 largest revenue producer, the World Health
13 Organization, maybe not the World Health,
14 the World Bank.

15 Q How does tobacco companies
16 compare?

17 MR. MURPHY: Objection to the
18 form. We've gone over this. He works for
19 attorneys in these cases.

20 THE WITNESS: I'm trying to think
21 of an approximate figure. It's hard to
22 separate out the tobacco litigation from

1 other types of -- of work that we do with
2 attorneys because tobacco is not the only
3 area that we do some legal work in. I would
4 say over the last few years for the most
5 part it represented less than 25 percent of
6 our work, maybe less than 20 percent as just
7 a guesstimate.

8 Q In terms revenue?

9 A In terms of revenue.

10 Q In the Engle matter in April
11 of 1999 you were asked about how much you
12 had billed in that case and it was in the
13 neighborhood of 360 or 370,000 to Reynolds
14 and there is a discussion about total and
15 it's unclear to me whether Mr. Rosenblatt
16 was accurate or inaccurate in describing it
17 to be in the neighborhood of 5 million or
18 closer to 3 million. Without subscribing to
19 any of my observations, just to alert you to
20 the issue, what I'd like to ask you today is
21 what is the accurate figure in the ballpark
22 total that Thomas & Thomas and/or yourself

1 have received from tobacco companies
2 directly or through lawyers like Jones Day?

3 MR. MURPHY: Over the whole course
4 of time he's done work for lawyers?

5 MR. PURCELL: Since his initial
6 tasking in this area and in the mid 1980s.

7 THE WITNESS: First of all, I
8 receive a salary. I don't receive separate
9 revenue based on who the clients are. If
10 there's money left over at the end of the
11 year after we finished our work, I get a
12 bonus, so my amount that I get doesn't
13 really vary that much. What he asked me
14 about -- Thomas & Thomas and -- and any
15 associated groups, about the best we could
16 come up with in Engle was we tried to go
17 back some 18 years or so, 17 years at that
18 point. Again, the 3 to \$4 million figure
19 seemed to be approximately correct. That's
20 about the best we could do. I mean you have
21 to realize we've had hundreds of clients
22 over that time period and trying to separate

1 one set of clients out from the others when
2 that does not represent a majority of the
3 work that we do is difficult.

4 BY MR. PURCELL:

5 Q How much have you received in
6 revenue, Thomas & Thomas, from tobacco or
7 related law firms since April of 1999?

8 A I have no idea.

9 Q How many tobacco-related matters
10 do you presently have open at Thomas &
11 Thomas?

12 A I don't know how many there's
13 actually being examined. At any one time, I
14 guess the best way I can answer that
15 there's, in the last two or three years,
16 which is what you're asking about, there may
17 be three or four that are fairly active,
18 Harvey being one of those. We have other
19 work we have to do, too.

20 Q What is the approximate average
21 billing from Thomas & Thomas in an active
22 tobacco matter such as Harvey?

1 A Well, I think that's represented
2 in those invoices that you've got in front
3 of you.

4 Q Do you or your wife own any
5 tobacco stock?

6 A Not to my knowledge. I don't
7 think we do unless some of the mutual funds
8 that we may own in our retirement plan owns
9 some tobacco stock, but we don't own any
10 directly.

11 Q Have you received any stock in any
12 way from Reynolds or another tobacco firm as
13 compensation for any work that you've done
14 at Thomas & Thomas for them?

15 A No.

16 MR. MURPHY: Objection to the
17 form. I think it misstated his relationship
18 in how he gets compensated.

19 BY MR. PURCELL:

20 Q Have you ever determined or had
21 the opinion that smoking assists digestion?

22 A That smoking does what? I didn't

1 understand your question.

2 Q That smoking assists digestion.

3 MR. MURPHY: Objection on the
4 grounds of relevance.

5 THE WITNESS: Again, this is not
6 an area that I've looked at recently, but if
7 you go back to some of the older studies,
8 there are indications in some of the older
9 studies that tobacco and tobacco products
10 may assist in digestion not only in humans
11 but in animals. One of the first uses of
12 tobacco was in farm animals to help farm
13 animals in digesting crops and so forth.
14 That's been something that's been around
15 for 50 years or so.

16 BY MR. PURCELL:

17 Q Do you believe that smoking
18 cigarettes has ever been shown to assist
19 human digestion?

20 A Not that I'm aware of.

21 Q Do you know what Star Cure tobacco
22 is?

1 A I've heard the term. I don't
2 remember what it refers to.

3 Q Have you been involved in any
4 testing of that product?

5 A Like I say, I -- since I don't
6 remember what it refers to, I'm not sure.
7 In the testing that we were involved in with
8 beagle dogs we had standardized tobacco that
9 was supplied to us, but I'm not sure what
10 the term -- I don't remember what the term
11 "Star" means.

12 Q You said you had heard the term.
13 What do you recall the context being where
14 you had heard the term?

15 A I don't.

16 Q Have you ever been involved in the
17 research of any additives to any Reynolds
18 products?

19 MR. MURPHY: Objection to the
20 form.

21 BY MR. PURCELL:

22 Q Additives to any of their tobacco

1 products.

2 A No, I have not been involved in
3 research on additives for any Reynolds
4 tobacco products.

5 BY MR. PURCELL:

6 Q Have you ever been provided a
7 memorandum from Jones Day regarding
8 strategies in defending tobacco-related
9 personal injury cases?

10 MR. MURPHY: Objection to the
11 form. I think that mischaracterizes the
12 nature of any document that exists and I
13 think if I know the document that you're
14 talking about, it's an attorney/client and
15 work-product privilege document, so we
16 obviously wouldn't provide it outside of our
17 law firm and clients and those in a joint
18 defense with us and we're not going to
19 answer questions about it.

20 If you want him to answer that
21 question, he can, but we're not going to
22 talk about privileged and protected

1 documents at this deposition.

2 THE WITNESS: What was the
3 question again?

4 BY MR. PURCELL:

5 Q Have you ever been provided or
6 seen a memoranda from Jones Day detailing
7 the strategy for defending tobacco-related
8 personal injury cases?

9 MR. MURPHY: Same objection and,
10 again, mischaracterization.

11 THE WITNESS: No, not to my
12 knowledge.

13 BY MR. PURCELL:

14 Q Have you ever been provided any
15 memoranda from Jones Day?

16 A Concerning what?

17 Q Anything.

18 A You mean transmittal of records
19 or --

20 Q Anything.

21 A Yeah, I could very well have been
22 given memoranda transmitting records or

1 describing a set of medical records or
2 something of that nature that were provided
3 to me. I'm sure that I've gotten some of
4 those.

5 Q Is it your business practice to
6 keep or retain them?

7 A Usually we retain records for --
8 on active projects we retain records usually
9 for three years and then they're destroyed,
10 so if materials are transmitted to us with a
11 memorandum, we usually keep them so we know
12 what materials were transmitted.

13 Q Who established your document
14 retention policy?

15 A That's been a document retention
16 policy we've had for at least 15 years and
17 it was established based on what most
18 scientific firms do that handle large
19 amounts of scientific literature.

20 Q Getting back to my question, who
21 established it at Thomas & Thomas?

22 A Well, I'm the chief executive

1 officer for Thomas & Thomas, so I was
2 probably the one who signed it and it was
3 reviewed by other staff and agreed upon and,
4 like I said, it's -- my guess is it's
5 about 15 years ago.

6 Q Is it your testimony that you
7 established it?

8 A I would assume that I did. I
9 haven't looked at it for years. We simply
10 have a policy that we follow and -- and we
11 have for years that covers everybody that we
12 do work for.

13 Q What's your recollection of the
14 source of the three-year period?

15 A That's consistent with what most
16 scientific organizations do the type of
17 review that we do. I think the National
18 Academy of Sciences had a three-year policy
19 and I believe EPA may have a three-year
20 policy as well of disposing of documents and
21 then financial documents are usually
22 maintained a bit longer for tax purposes.

1 It's based on tax codes and so forth.

2 Q To your recollection did Reynolds
3 or any other tobacco company or affiliated
4 law firm have any input in establishing the
5 Thomas & Thomas document retention policy?

6 A No, they would not.

7 Q When you've conducted your review
8 of literature, historically, in connection
9 with forming the opinions you intend to
10 express regarding historical research on
11 cancer from cigarette smoke, have you
12 reviewed documents and studies that came
13 from any tobacco company?

14 MR. MURPHY: Objection to the
15 form.

16 THE WITNESS: I don't believe so.
17 The documents that we reviewed are documents
18 that are published in the scientific
19 literature and that's what we focused on
20 and -- and those are documents that we
21 obtained ourselves through our own literature
22 searches, through our own sending people to

1 the library and so forth.

2 BY MR. PURCELL:

3 Q In your review of these historical
4 documents have you come across any instance
5 where you believed a misrepresentation about
6 the state of medicine or science was made?

7 MR. MURPHY: Objection to the form
8 on many levels. Vague, ambiguous.

9 THE WITNESS: I don't even know
10 how to answer your question. It seems like
11 you're asking me to make a judgment call on
12 tens of thousands of articles as to what one
13 specific one may have said versus another
14 one. Is that what you're asking?

15 BY MR. PURCELL:

16 Q In your review of historical
17 articles, medical and scientific, have you
18 come across any instance of
19 misrepresentation?

20 MR. MURPHY: Same objection.

21 THE WITNESS: Let me answer it
22 this way: The articles that I have reviewed

1 are published in the peer review literature
2 and have been through peer review. The
3 intention of the peer review is to eliminate
4 misrepresentations in the appropriate
5 analyses or incomplete analyses and other
6 flaws in these articles before they were
7 published. I assume that -- that they have
8 been successful in doing that. That doesn't
9 mean that one article -- that every article
10 is consistent with the other article.
11 That's not how science is done. In fact,
12 scientists debate and so there will be
13 inconsistencies and I have to accept the
14 fact that the peer review process has been
15 very -- fairly successful in taking out
16 misrepresentations. But that doesn't mean
17 I'd even agree with every conclusion that
18 article reached because I'm a scientist,
19 I'll do my own analysis.

20 Q In 1954 was there any proof that
21 cigarette smoking was one of the causes of
22 lung cancer?

1 MR. MURPHY: Objection to the form
2 of the question.

3 THE WITNESS: Was there any proof?
4 If you're referring to skin-painting
5 studies, there were indications in
6 skin-painting studies that there may be an
7 association and that was shortly after the
8 publication of the five epidemiologic
9 studies in 1950, but that's about it. There
10 was an attempt to reproduce one of those
11 studies and those were are mainly ongoing
12 about '54.

13 BY MR. PURCELL:

14 Q In 1954 was there proof that
15 cigarette smoking was one of the causes of
16 lung cancer?

17 MR. MURPHY: Objection to the form
18 of the question. I think that proof in both
19 of these questions is somewhat vague.

20 THE WITNESS: Let me put it this
21 way: In 1954 there was no agreement among
22 scientists that I've seen that we knew what

1 the cause of lung cancer associated with
2 cigarette smoking was, including the author
3 that published the skin-paining studies.

4 BY MR. PURCELL:

5 Q In your opinion is it accurate to
6 say in 1954 that there was no proof that
7 cigarette smoking is one of the causes of
8 lung cancer?

9 MR. MURPHY: Objection to the
10 form. Vague.

11 THE WITNESS: I think I've already
12 answered that. I just got through answering
13 that question.

14 BY MR. PURCELL:

15 Q In 1954 was it accurate to say
16 that there is no proof that cigarette
17 smoking is one of the causes of lung cancer?
18 Yes or no?

19 MR. MURPHY: Objection to the
20 form. Objection to the direction on how to
21 answer the question.

22 THE WITNESS: Like I said, I

1 answered your question, probably answered it
2 twice. In 1954 the main things that we have
3 were the skin-painting studies and the
4 epidemiologic studies that were published.
5 Those were initial indications that there
6 may be a statistical association, although
7 the skin-painting studies did not get us any
8 closer to that association. Those were
9 indications that there may be an
10 association. That's about the best I can
11 tell you in '54.

12 BY MR. PURCELL:

13 Q In your view there was some proof?

14 MR. MURPHY: Objection to the
15 form. I think using proof in that way is
16 vague and misleading.

17 THE WITNESS: From a scientific
18 standpoint -- I don't know how you're going
19 to define proof, but from a scientific
20 standpoint, we did not have any biological
21 supporting information to show that there
22 was a relationship. If you're calling that

1 proof, then I would have to say that there
2 was not proof in 1954, but there certainly
3 was not a biological basis to be able to tie
4 the two together.

5 BY MR. PURCELL:

6 Q In your opinion was Reynolds
7 correct in asserting in 1954 that there was
8 no proof that cigarette smoking is one of
9 the causes of lung cancer?

10 MR. MURPHY: Object to the form of
11 the question. That assertion was made by
12 not Reynolds, but an entity that Reynolds
13 belonged to, as well as many other entities
14 that belonged to it.

15 THE WITNESS: I don't know what
16 you're reading from.

17 BY MR. PURCELL:

18 Q It doesn't matter. What I'm
19 interested to know is your view on the
20 statement. Can you answer that?

21 A Well, again, those are not --
22 proof is not the word that I would use.

1 That was the initial stage of trying to
2 understand whether, in fact, there was a
3 statistical association between smoking and
4 lung cancer and there was no biological
5 "proof" that there was in 1954. So if
6 somebody wanted to pull that statement out
7 and make that statement, that probably would
8 be consistent with the science at the time
9 the statement was made.

10 Q In your --

11 A It's not a scientific statement.
12 It's more of a policy type statement.

13 Q In your assessment as a scientist
14 is it misleading in any way to make that
15 assertion in 1954?

16 A No, it's not misleading.

17 Q Was there any evidence suggesting
18 that tobacco products manufactured by
19 Reynolds in 1954 were in any way injurious
20 to health?

21 MR. MURPHY: I'm sorry. Can I get
22 at least the first part of the question read

1 back?

2 THE WITNESS: Yeah, I don't -- I
3 don't think I understand how this all ties
4 together.

5 (The reporter read the record as
6 requested.)

7 THE WITNESS: Well, that requires
8 a bit of a leap in that I've already
9 mentioned the epidemiologic studies that
10 were conducted on cigarettes, how those
11 related to R.J. Reynolds products I don't
12 know, just the fact that they were
13 cigarettes, and that was initial
14 epidemiologic evidence that there may be a
15 statistical association. That's about the
16 best I can answer your question.

17 BY MR. PURCELL:

18 Q Do you believe that Reynolds has
19 cooperated closely with those whose task it
20 is to safeguard the public health
21 consistently?

22 A I have no way of -- of answering

1 that. I don't know -- I don't know all the
2 interactions that Reynolds had over the
3 years with -- with the public or federal
4 agencies and so I have no way of answering
5 that.

6 BY MR. PURCELL:

7 Q You have seen advertisements from
8 tobacco companies, have you not?

9 A Uh-huh.

10 Q Is that yes?

11 A Yes.

12 Q As a scientist, have you ever seen
13 an ad from Philip Morris or Reynolds about
14 cigarettes and smoking that you felt
15 misrepresented any facts?

16 A Not to my knowledge. I am not an
17 expert in advertising and, frankly, I don't
18 look very much to advertisements and haven't
19 for years, so I wouldn't pay much attention
20 to cigarette ads from either company, so
21 it's -- it's outside of my expertise.

22 Q I was more asking for your

1 experience as someone who's seen
2 advertisement from those companies. Have
3 you ever seen one that struck you as
4 misrepresenting facts?

5 A Well, like I say, not that I
6 remember. I don't pay a lot of attention to
7 advertisements.

8 Q When did the World Health
9 Organization issue a report stating that
10 cigarette smoke was a cause of lung cancer?

11 A The most complete report that was
12 done by the World Health Organization was
13 published by the International Cancer
14 Research Association, which is referred to
15 as IARC, and I believe that was published
16 in 1986 and that was another serial analysis
17 of cigarette smoking and epidemiologic
18 studies and laboratory animal studies and so
19 forth had been conducted. I think that's
20 probably the best response to your question.

21 Q Is it your testimony that the 1986
22 IARC paper is the first report issued by the

1 World Health Organization stating that
2 cigarette smoke was a cause of lung cancer?

3 A No, that's not what I said.

4 Q Getting back to my question, then,
5 when did the World Health Organization first
6 issue a report stating that cigarette smoke
7 was a cause of lung cancer?

8 A Well, again, we have the same
9 debate about cause that we have had previous
10 today as to how cause is defined. The World
11 Health Organization -- first ones I remember
12 seeing are back in the late 1970s and there
13 may have been one towards the end of
14 the '60s, but I'm -- I haven't looked at it
15 for a while. But in the 1970s the World
16 Health Organization and particularly relying
17 on some of the advice of Richard Doll
18 published reports to the effect that there
19 was an association between cigarette smoking
20 and that there was also a dose response.
21 The more a person smoked, the more
22 likelihood they were of developing cancer.

1 Now, these epidemiologists over
2 that time period have all made it clear that
3 these were statistical associations of risk
4 factors and have often not used cause and
5 effect. Peto in his work for the World
6 Health Organization made it clear that
7 epidemiology cannot alone establish cause.

8 Q Is the answer is you don't know
9 when the World Health Organization first
10 issued a report?

11 A I think I just got through telling
12 you. When they issued their first report?

13 Q Yes.

14 A Well, right now I don't know when
15 they issued their first report. I'd have to
16 go back and look.

17 Q Is it your recollection that it
18 was --

19 A Can we take a break for a minute
20 so I can stretch?

21 MR. PURCELL: Sure.

22 (Recess)

1 BY MR. PURCELL:

2 Q Back on the record, doctor. Do
3 you believe the first report from the World
4 Health Organization stating that cigarette
5 smoke was a cause of lung cancer was before
6 or after 1957?

7 A I think it was after 1957.

8 Q What year was it that in your view
9 science accepted that cigarette smoking
10 causes lung cancer?

11 A Again, it's based on how cause is
12 defined. I think that there was a consensus
13 surrounding the Surgeon General's report
14 in '64 that there was sufficient
15 epidemiologic evidence to say from a,
16 certainly from a public health standpoint,
17 that cigarettes do cause lung cancer and I
18 would agree that that's true, that those
19 epidemiologic studies are strong. We
20 certainly saw that in '64. However, the '64
21 report still made it clear that they weren't
22 using cause in the absolute sense of the

1 word and explained that we did need to
2 develop laboratory animal models and did
3 need to try to understand what was causing
4 the increase if -- accepting that the
5 statistical increase was being caused by
6 cigarette smoking.

7 Q You're well familiar with Sir
8 Richard Doll, epidemiologist from England?

9 A Yes.

10 Q You respect his abilities as an
11 epidemiologist?

12 A Yes.

13 Q When did Sir Richard Doll say that
14 science accepted that cigarette smoked
15 caused lung cancer?

16 MR. MURPHY: Objection to the
17 form. I think it depends on when you asked
18 him.

19 THE WITNESS: I don't even know
20 how to answer that question. Sir Richard
21 Doll has published numerous articles on
22 these issues. In fact, Doll and Peto have

1 published together and my understanding of
2 those articles in reading Doll and Peto is
3 that they've made it pretty clear that there
4 are epidemiological and, as we approached
5 the '60s, growing statistical evidence that
6 there was an association between cigarette
7 smoking and lung cancer, but that that was
8 insufficient, inadequate. So that's my
9 understanding of what both of them had to
10 say.

11 Q I'm looking for a year.

12 A Well, I don't know what year
13 you're looking for.

14 MR. MURPHY: I object to the form
15 of the question because it implies that
16 there is only one year and I believe that
17 Sir Richard Doll has varied in his responses
18 to those questions both in writings and
19 under oath.

20 BY MR. PURCELL:

21 Q The year that Dr. Doll, Sir
22 Richard Doll said science had accepted

1 cigarette smoking as a cause of lung cancer.

2 A I don't know which statement
3 you're referring to. If you want to give me
4 the statement, I'd be happy to read it.

5 Q "Science accepts that cigarette
6 smoking causes lung cancer." When did Sir
7 Richard Doll say that occurred?

8 A I have no idea.

9 MR. MURPHY: It sounds like a
10 jeopardy question.

11 THE WITNESS: I'm sorry. I have
12 no idea. If you want to show me a
13 publication of his where he says that, then
14 maybe we can discuss what he's saying.

15 BY MR. PURCELL:

16 Q Do you know?

17 A Do I know what?

18 Q When he says, "Science accepted
19 that cigarette smoking caused lung cancer."

20 A Out of all of the articles he's
21 published over the years, I couldn't tell
22 you when he made that statement.

1 Q It's not when he made the
2 statement, it's when he said science made
3 that acceptance. Do you know what year?

4 A I can say I have no idea.

5 MR. MURPHY: Same objections. I
6 think that Sir Richard Doll has said that
7 that has occurred at different times in
8 different statements that he's said in
9 different places. So to the extent that
10 you're implying that there's only one time
11 he has said science has made that
12 acceptance, I object and I think that that's
13 misleading.

14 BY MR. PURCELL:

15 Q Do you have anything else to say?

16 A No.

17 Q Who is Dr. Alan Rodgman?

18 A Let's see. Rodgman was a
19 researcher. I don't know very much about
20 Rodgman, but I guess he was a researcher at
21 R.J. Reynolds at one point.

22 Q Has he ever published anything in

1 the medical and scientific community
2 regarding tobacco and cancer?

3 A You mean in peer review scientific
4 literature?

5 Q Anywhere in public.

6 A When I took a look for
7 Dr. Rodgman's publications in peer-reviewed
8 scientific literature, I didn't find any.
9 He has made statements in more popular press
10 and so forth, but in peer-reviewed
11 scientific literature, when I looked to see
12 what he had published, I didn't see any
13 publications.

14 Q How did you first learn of him?

15 A His name has come up from time to
16 in certainly tobacco litigation and
17 newspaper and, like I said, he's made a lot
18 of public standpoints.

19 Q What's your understanding --

20 A But I don't know a lot about
21 Mr. or Dr. Rodgman though other than he was
22 simply a researcher.

1 Q What is your understanding of when
2 he at the Reynolds Research Department told
3 Reynolds that cigarettes and tobacco caused
4 cancer?

5 MR. MURPHY: Objection to the
6 form.

7 THE WITNESS: I don't know what
8 you're referring to. Again, that would be
9 internal company discussions. It's not
10 peer-reviewed scientific literature, which
11 is what I've reviewed.

12 BY MR. PURCELL:

13 Q When did R.J. Reynolds first
14 publicly indicate that cigarettes caused
15 lung cancer?

16 MR. MURPHY: Objection to the
17 form. I think it's vague, ambiguous and
18 misleading.

19 THE WITNESS: I don't know. Like
20 I say, that's not my area of expertise. I
21 haven't followed that company's public
22 statements or any other company -- public

1 statements by companies on products. That's
2 not the area that I work in. I do research.

3 BY MR. PURCELL:

4 Q Have you ever been asked to do
5 work with IARC?

6 A Yes.

7 Q Did that involve tobacco?

8 A I was not involved in the 1986
9 report that IARC produced. I'm trying to
10 remember back the work I've done with them.
11 I did some work on mixtures AND one of the
12 mixtures that was discussed was tobacco
13 smoke, but that was a minor part of the
14 whole project.

15 Q When was that?

16 A In the early '80s, mid '80s best I
17 can remember.

18 Q Who did you deal with at IARC in
19 that respect?

20 A I have no idea.

21 Q Who asked you to become involved
22 from IARC?

1 A I don't remember.

2 Q What was his or her position?

3 A Like I said, I don't remember. I
4 assume it was one of the staff people at
5 IARC that had asked me.

6 Q Dr. Thomas, I understand that
7 you've never smoked; is that correct?

8 A That's correct.

9 Q Has your wife?

10 A No.

11 Q Did your parents?

12 A Not to my knowledge.

13 MR. MURPHY: I understand all
14 these questions are fair game.

15 BY MR. PURCELL:

16 Q Do you tell people not to smoke?

17 MR. MURPHY: Objection to the
18 form. I think it's vague.

19 THE WITNESS: I don't go out and
20 tell people not to smoke, but I do not
21 recommend that people smoke.

22 BY MR. PURCELL:

1 Q When did you first do that?

2 A Well, the most obvious time is
3 with my own children, I recommended that
4 they not smoke.

5 Q What year would that have first
6 been?

7 A I don't know which year. Probably
8 in the early or mid to late '70s.

9 Q Why did you tell them that?

10 A Because I think from a public
11 health standpoint that smoking is a -- is a
12 risky behavior, there's risks associated
13 with it, and I'd prefer not to see my
14 children smoke.

15 Q Have you read any of your former
16 testimony in tobacco-related litigation?

17 MR. MURPHY: Objection to the
18 form. At what point in time I guess is one
19 of my --

20 BY MR. PURCELL:

21 Q Ever.

22 MR. MURPHY: I mean I just don't

1 want it to get confused and I think the
2 question is confusing, but I think he's
3 reviewed transcripts for mistakes, et
4 cetera, after they've come through. Are you
5 including that in your question?

6 MR. PURCELL: That's my exact
7 question.

8 MR. MURPHY: Okay.

9 MR. PURCELL: I think Dr. Thomas
10 can handle it.

11 MR. MURPHY: Well, it could be
12 misunderstood with have you gone back and
13 read the Engle testimony that we referred
14 to, which was years ago, have you gone back
15 and read that recently, as opposed to he did
16 a deposition and within 30 days it comes to
17 you and you look at it.

18 BY MR. PURCELL:

19 Q You may respond.

20 A I have read, as indicated, I have
21 read previous depositions and testimony that
22 I've given to correct that. I have actually

1 looked at previous depositions I've given
2 from time to time just to see what types of
3 questions were asked. I haven't lately. I
4 haven't read Engle. It's a very long set of
5 documents I understand and I testified over
6 several days, so it would be fairly
7 voluminous. I don't specifically remember
8 going back and reading my testimony in
9 previous cases. I may have at some point
10 looked to see how I responded to some
11 question that was asked or something, but
12 other than that, I don't remember going back
13 and actually reading them.

14 Q As you sit here today, do you
15 recall a specific glaring change that you
16 felt was necessary in testimony of yours you
17 have reviewed?

18 A No.

19 Q As a scientist, do you believe
20 there are any benefits to cigarette smoking?

21 A Well, again, the best that we have
22 are the epidemiologic studies and the

1 epidemiologic studies do show that cigarette
2 smoking actually does have some beneficial
3 effects in reducing some types of cancer
4 such as breast cancer in women. We were
5 talking about silica earlier, that people
6 that work around silica and mining and so
7 forth, it will actually reduce the level of
8 silicosis as opposed to a nonsmoker. So I
9 guess you could say those are beneficial
10 effects that one could pick out of the
11 epidemiologic studies, but I would still not
12 recommend that people smoke.

13 Q Do you believe that those benefits
14 in total, whatever they may be, outweigh the
15 risks you believe are indicated by the
16 studies?

17 MR. MURPHY: Objection to the form
18 and I think that that's somewhat using legal
19 language and Dr. Thomas isn't here to
20 testify to a legal standard, but subject to
21 that, I mean I think he can answer.

22 THE WITNESS: I haven't done a

1 benefit analysis to look at that, the issue
2 of whether they -- the benefits outweigh the
3 risks. Like I say, my own personal opinion
4 is that I don't think that people should
5 smoke and I certainly don't recommend that
6 they start smoking and -- but that's not
7 based on my scientific analysis of benefits
8 and risks because I haven't done that.

9 BY MR. PURCELL:

10 Q Have you ever been asked to do
11 that and refused?

12 A No, I've never been asked to do
13 that.

14 Q In the epidemiologic literature
15 what is the difference between a Type I and
16 a Type II error in interpreting data?

17 A A Type I error is usually the type
18 of error that's based on no hypothesis and
19 that we try to control for. These are
20 conflicting variables and conflicting risks.
21 We've talked about some of these before.
22 For example, in looking at silicosis in

1 controlling for smoking and asbestos in
2 controlling for smoking. Type II errors
3 tends to mean more variable errors,
4 statistically variable errors. They're more
5 difficult to control for and they often
6 involve individual variability. We can
7 sometimes try to correct for Type II errors,
8 but those are much more difficult to control
9 for.

10 Q In cancer epidemiology, when
11 evaluating data, you're familiar with the
12 concept of competence interval?

13 A Uh-huh.

14 Q Is that yes?

15 A Yes.

16 Q You're familiar with the concept
17 of strength of association?

18 A Yes.

19 Q You're familiar with the concept
20 of margin of error?

21 A Yes.

22 Q You're familiar with the concept

1 of goodness of fit?

2 A Yes.

3 Q Would you agree those are
4 relatively fundamental notions in
5 epidemiology?

6 A Those are relatively fundamental
7 notions.

8 Q Of those four, which are least
9 affected by increased degrees of freedom of
10 data?

11 A Of which four?

12 Q Confidence interval, margin of
13 error, strength of association, goodness of
14 fit.

15 A I have to write them down. I
16 didn't realize I was going to have a quiz
17 today. So there's goodness of fit -- what
18 were the others? Confidence interval?

19 Q Margin of error, strength of
20 association.

21 A Now, what was the question?

22 MR. PURCELL: Would you read it

1 back?

2 (The reporter read the record as
3 requested.)

4 THE WITNESS: Degrees of freedom,
5 okay, and least affected, right?

6 BY MR. PURCELL:

7 Q Yes.

8 A Well, just to answer this in a
9 general way, and it depends on how these are
10 being modeled as to how to answer this, but
11 if I were in an epidemiology class and this
12 was a general question, the degrees of
13 freedom would least affect the confidence
14 interval and the margin of error. The
15 goodness of fit would be the most associated
16 and the strength of association, again,
17 depends on how that was determined. That's
18 why we figure out degrees of freedom, is to
19 get a better understanding of goodness of
20 fit of a curve for modelling.

21 Q Do you know who Robert H. Fletcher
22 is, F-L-E-T-C-H-E-R.

1 A I recognize the name, but I don't
2 remember offhand.

3 Q Do you consider yourself to be
4 expert on the pathogenesis of lung cancer?

5 A Yes.

6 Q Does that include genetic aspects?

7 A Yes. It does in my case.

8 Q Have you read any of the
9 literature regarding the p53 gene?

10 A Yes, I have.

11 Q Is it your understanding that
12 exposure to asbestos and exposure to
13 carcinogens from tobacco smoke have the same
14 or different effect on the p53 gene?

15 A That -- that's -- the way you
16 phrase it is very difficult to answer.
17 Asbestos is, for the most part, when we're
18 talking about one, you know, there's
19 different forms of asbestos, but when we're
20 talking about one that may induce fibrosis
21 and then subsequently cancer, the p53 gene
22 is mutation that's usually not seen or it's

1 most seen at very late stage.

2 For the constituents in tobacco
3 smoke a few years ago, three or four years
4 ago, the thought was, was that some of those
5 constituents, especially something like
6 benzpyrene may be affecting the p53 gene.
7 More recent indications are that they are
8 not and it's inconsistent, so we're not
9 seeing a consistent change in people that
10 smoke. I hope that answers your question,
11 but that's the best I can do to answer it.

12 Q What type of gene is the p53 gene?

13 A It's a tumor suppressor gene.

14 Q Is it a transcriptional activator?

15 A It can act as a transcriptional
16 activator.

17 Q How does exposure to asbestos
18 and/or cigarettes affect it?

19 A Well, like I say, it's a
20 late-stage gene, as it's name implies, it's
21 a suppressor and we don't know what effect
22 cigarette smoke has on it and the studies

1 are inconsistent and, as far as asbestos is
2 concerned -- like I say, I haven't reviewed
3 asbestos or even looked at the genetics
4 behind that for some time, but as I
5 remember, as I mentioned just a few minutes
6 ago, it's a late-stage gene involved in
7 transcription such as having a similar
8 withdrawal to the LOH, loss of
9 heterozygosity.

10 Q What is the most common genetic
11 event in human lung cancers?

12 A I don't think we know the answer
13 to that. At one point, like I say, there
14 was a thought that maybe p53 was, but that's
15 been dismissed. We've looked at several
16 genes and there does not seem to be a common
17 set of genetic changes that we can relate to
18 cigarette smoke.

19 MR. PURCELL: I think we're
20 approaching 6:00 o'clock and at this point I
21 don't have any further questions of the
22 witness, however, I want to emphasize that

1 if the witness is provided further documents
2 or any other information that in any way
3 does further work or review or preparation
4 of the case, we need to be notified of it
5 forthwith so that the appropriate motions
6 and/or relief from the court can be obtained
7 or addressed.

8 MR. MURPHY: I want to make sure
9 we're clear, he is going to prepare for
10 trial, as I'm sure plaintiffs' witnesses
11 will, and --

12 MR. PURCELL: Well, we don't need
13 to spend a lot of time talking about it,
14 but --

15 MR. MURPHY: But ordinary
16 preparation for trial. I just want to make
17 sure I was clear.

18 MR. PURCELL: The code is very
19 clear under BCP 2034 what this is about and
20 I think the judges that interpret that and
21 apply that are going to adhere to it and if
22 there is further work done, you need to let

1 MR. PURCELL: I'm not. I'm just
2 trying to see if there's a cover fax.

3 MR. MURPHY: There's a cover fax,
4 but I don't have it. It's a letter from
5 Marty Springman. I have another letter that
6 we sent to your office with Dr. Thomas's CV
7 that acknowledges the timing and I started
8 to pack up because I didn't think this would
9 be an issue. I hope it's not an issue.

10 MR. PURCELL: You know what, we
11 won't make it an issue. If we told
12 you 12:30, I'd just like a chance to confirm
13 that, if it's the case.

14 MR. MURPHY: Frankly, your office
15 asked for more time is all I'm saying.
16 Here's another letter.

17 MR. PURCELL: If that's the case,
18 we will pay the doctor from 12:30 to 6:00.

19 MR. MURPHY: Are you impugning my
20 credibility when I tell you that this is
21 from your office?

22 MR. PURCELL: No, I just don't

1 know. I need to go look.

2 MR. MURPHY: No, you just don't
3 trust me. I don't know which it is, but
4 that's fine.

5 MR. PURCELL: I didn't say that.

6 MR. MURPHY: Okay.

7 MR. PURCELL: Just lack of
8 foundation.

9 MR. MURPHY: It's from your
10 office.

11 MR. PURCELL: I want to say that I
12 only have a check for \$400 today for one
13 hour. Your rate is \$400 an hour; is that
14 correct, doctor?

15 THE WITNESS: That's correct.

16 MR. PURCELL: I'll hand you that
17 one check for one hour now.

18 THE WITNESS: Okay.

19 MR. PURCELL: I don't have the
20 other check with me, but on the record I'm
21 committing that we will pay you the balance
22 of the time, you need not be concerned, and

1 I appreciate your time and patience here
2 today.

3 THE WITNESS: Thank you.

4 MR. PURCELL: Thank you. We can
5 go off the record now.

6 (Discussion off the record)

7 MR. JOHNSON: On behalf of Philip
8 Morris I just want to make it clear that we
9 are joining in on the objections made by
10 defense counsel and also that Dr. Thomas is
11 listed as an expert to my client as well as
12 defense counsel that was defending this
13 deposition.

14 (Whereupon, at 5:54 p.m., the
15 deposition of RICHARD THOMAS was
16 adjourned.)

17 * * * * *

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CERTIFICATE OF NOTARY PUBLIC

DISTRICT OF COLUMBIA

I, SHARI R. BROUSSARD, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn; that the foregoing transcript is a true and accurate record of the testimony given by said witness.

I further certify that I am not related to any of the parties to this action by blood or marriage and I am in no way interested in the outcome of this matter.

A handwritten signature in cursive script, reading "Shari R. Broussard", is written over a horizontal line.

My Commission Expires:

July 14, 2005

EXHIBITS

1 Lucy E. Mason, SBN 196810
 2 Mordecai D. Boone, SBN 196811
 3 Annie Y. S. Chuang, SBN 196307
 4 SHOOK, HARDY & BACON L.L.P.
 5 333 Bush Street, Suite 600
 6 San Francisco, CA 94104-2828
 7 Telephone: (415) 544-1900
 8 Facsimile: (415) 391-0281

CALENDARED-HOWARD RICE

6 Attorneys for Defendant
 7 PHILIP MORRIS INCORPORATED
 8 and on behalf of Attorneys for Defendant
 9 R.J. REYNOLDS TOBACCO COMPANY

10 SUPERIOR COURT OF CALIFORNIA
 11 IN AND FOR THE COUNTY OF SAN FRANCISCO

11 ALAN HARVEY and
 12 MADELINE HARVEY

13 Plaintiffs,

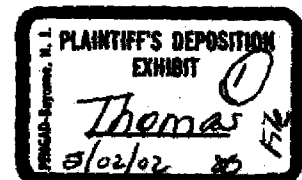
14 v.

14 ABB LUMMUS GLOBAL, INC., et al.,

15 Defendants.

CASE NO. 312112

DISCLOSURE OF EXPERT
 WITNESSES AND DECLARATION
 OF ANNIE Y. S. CHUANG



18 Pursuant to § 2034 of the California Code of Civil Procedure, Philip Morris Incorporated
 19 ("Philip Morris"), on behalf of itself and R.J. Reynolds Tobacco Company ("Reynolds"), designates
 20 the following individuals as expert witnesses and reserves the right to call them to trial in the above-
 21 entitled case.

22 1. David Bercsy, M.D.: Board certified internist practicing emergency and critical
 23 care medicine with training and specialty interest in pulmonology, Cedars Sinai Medical Center, 8700
 24 Beverly Boulevard, Los Angeles, California 90048.

25 2. Edwin Bradley, Ph.D.: Quantitative Research Associates, Birmingham,
 26 Alabama.

27 3. Martin J. Cline, M.D.: Professor of Oncology, University of California at Los
 28 Angeles, School of Medicine.

1 popular slang usage; historical polling and survey data; network television news and programs; movies,
2 film strips and other sources of entertainment; public service announcements broadcast on television
3 and radio; publications and activities of regional and national anti-smoking organizations; union
4 publications; and other sources of information, including sources in the areas where Alan D. Harvey
5 resided.

6 Dr. Schaller is expected to testify, based upon his examination of multiple sources of
7 public information, that for over a century there has existed widespread, common knowledge that
8 cigarette smoking could be hazardous to health and lead to serious injury and premature death, and that
9 it could be difficult to quit. He is expected to testify that the health and addiction risks of smoking have
10 been common knowledge in the United States. Dr. Schaller is also expected to testify about the
11 dissemination of information about, and awareness of, the risk of lung cancer among smokers exposed
12 to asbestos. Dr. Schaller may also offer opinions and testimony in response to related issues raised by
13 plaintiffs.

14 Dr. Schaller has agreed to testify at trial and will be sufficiently familiar with the
15 pending action to submit to an oral deposition concerning his testimony, including any opinion and
16 basis thereof that he may render at trial.

17 Dr. Schaller's hourly and daily fee for providing consultation and deposition testimony
18 is \$200 per hour.

19 23. Richard D. Thomas, Ph.D.: Dr. Thomas is currently the Director of the
20 International Center for the Environment and Health in McLean, Virginia. Previously, Dr. Thomas was
21 the Director of Human Toxicology and Risk Assessment at the National Academy of Sciences/National
22 Research Council. Dr. Thomas' areas of expertise include pathology, toxicology and risk assessment
23 techniques.

24 Dr. Thomas is expected to provide expert opinion testimony in the following areas,
25 including as they apply to Mr. Harvey: (1) causation of cancer and the mechanisms by which cancer
26 develops; (2) the molecular biology of disease and the role of environmental and occupational
27 exposures and lifestyle factors in the development of disease, including lung cancer; (3) the general risk
28 factors associated with the development of relevant occupationally and/or environmentally related

1 diseases, including lung cancer; (4) the multifactorial etiology of lung cancer; (5) the role of non-
 2 tobacco related risk factors, including occupational and environmental risk factors, in the development
 3 of lung cancer, including Plaintiff Alan Harvey's cancer; (6) the historical development of medical and
 4 scientific knowledge regarding the health risks and diseases associated with occupational and
 5 environmental exposures, including asbestos; (7) the relevant published studies or literature that discuss
 6 pertinent diseases and/or risk factors; (8) the decline in smokers' risks of smoking related disease
 7 following smoking cessation; and (9) the state of medical and scientific knowledge from the 1930s to
 8 present with respect to identification of cigarette smoking as a cause of lung cancer in humans. Dr.
 9 Thomas may also testify regarding Mr. Harvey's de minimis use of Camel brand cigarettes
 10 manufactured by R.J. Reynolds Tobacco Company and the relationship of his use of Camel to his risk
 11 of developing lung cancer attributable to cigarette smoking.

12 Dr. Thomas has agreed to testify at trial and will be sufficiently familiar with the pending
 13 action to submit to an oral deposition concerning his testimony, including any opinion and basis thereof
 14 that he may render at trial.

15 Dr. Thomas' hourly fee for consultations and providing deposition testimony is \$400
 16 per hour.

17 24. Doug Tucker, M.D.: Dr. Tucker is board certified in Psychiatry, with added
 18 certifications in Addiction and Forensic Psychiatry by the American Board of Psychiatry and
 19 Neurology. Dr. Tucker is also certified by examination in alcoholism and other drug dependencies by
 20 the American Society of Addiction Medicine. Dr. Tucker is Assistant Clinical Professor of Psychiatry
 21 at the University of California, San Francisco School of Medicine. Dr. Tucker obtained his medical
 22 degree from the University of Michigan School of Medicine, and completed his postgraduate residency
 23 and fellowship training in psychiatry and consultation-liaison psychiatry at the University of California,
 24 Los Angeles Neuropsychiatric Institute. Additionally, he completed a fellowship in forensic psychiatry
 25 at Rush-Presbyterian-St. Luke's Medical Center.

26 Dr. Tucker has an active private practice of addiction psychiatry in the San Francisco
 27 area, and does frequent work as independent medical examiner. Dr. Tucker has extensive experience
 28 in the field of substance dependence treatment, and currently serves on the Addiction Psychiatry

1 ALAN R. BRAYTON, ESQ., S.B. #73685
 2 GILBERT L. PURCELL, ESQ., S.B. #113603
 3 BRAYTON ♦ PURCELL
 4 Attorneys at Law
 5 222 Rush Landing Road
 6 P.O. Box 2109
 7 Novato, California 94948
 8 (415) 898-1555
 9
 10 Attorneys for Plaintiffs

HOWARD RICE
 RECEIVED / CALENDARED BY: O. C.

APR 01 2002
 DATES TO BE ENTERED As indicated

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SUPERIOR COURT OF CALIFORNIA
 COUNTY OF SAN FRANCISCO

11 ALAN HARVEY and
 12 MADELINE HARVEY,
 13
 14 Plaintiffs,

15 vs.

16 ABB LUMMUS GLOBAL, INC., et al.,
 17
 18 Defendants.

No. 312112

NOTICE OF TAKING DEPOSITION AND
 REQUEST FOR PRODUCTION OF
 DOCUMENTS AND THINGS AT
 DEPOSITION

[C.C.P. § 2025(c),(d)]

Trial Date: June 17, 2002

BRAYTON ♦ PURCELL
 ATTORNEYS AT LAW
 222 RUSH LANDING ROAD
 NOVATO, CALIFORNIA 94945-2409
 (415) 898-1555

TO ALL DEFENDANTS HEREIN AND THEIR ATTORNEYS OF RECORD:

PLEASE TAKE NOTICE that on the following dates and times, at the offices of
 TOOKER & ANTZ, 818 Mission Street, 5th Floor, San Francisco, California, the attorneys for
 plaintiffs in the above-titled action will take the depositions of the following individuals upon
 oral examination, before a duly qualified deposition officer; said depositions to continue from
 day to day until completed.

NOTICE IS FURTHER GIVEN that said expert witnesses shall bring to and produce at
 their deposition, and make available for inspection and/or photocopying, the originals of the
 following:

1. All documents, literature or data that were referred to or reviewed in the course of the
 investigation or in forming any opinion with respect to this case;

///

- 1 2. All documents which were relied upon in forming any opinion with respect to this
- 2 case;
- 3 3. A copy of the current resume or curriculum vitae of said expert including the identify
- 4 of any grantors or any grants received by or awarded to the expert;
- 5 4. A list of all publications of said expert;
- 6 5. All notes, memoranda, correspondence, email or faxes sent to or received by or from
- 7 anyone, phone message notes, reports, draft reports, and the like, which relate to any work done
- 8 on this matter, including communications with defense counsel who retained said expert and all
- 9 materials received from defendants' attorneys (including Berry & Berry);
- 10 6. All billing records and/or invoices for work done on this matter;
- 11 7. All time records reflecting time spent on this matter;
- 12 8. All photographs, tape recordings, motion pictures, calculations, computer printouts,
- 13 data stored in a computer, data stored on a computer disc, and any other recording of any kind of
- 14 any communication or representation that relates to any work done by said expert with regard to
- 15 this matter;
- 16 9. A listing, if available, of all other matters in which said expert has rendered an expert
- 17 opinion, either in court or in a deposition or in a declaration;
- 18 10. All other documents which constitute any part of said expert's file for this matter not
- 19 previously produced in response to any of the above categories.
- 20 11. Any specific scientific publication each expert relies upon to form his opinion
- 21 pertaining to this case, or any unpublished data upon which he or she intends to rely on to form
- 22 his or her opinions in this case.
- 23 12. All notes, memoranda, correspondence, reports, emails or faxes sent between the
- 24 expert and his or her assistants pertaining to this case.
- 25 13. All notes, memoranda, correspondence, reports, emails or faxes sent between the
- 26 expert, his or her assistants and any employee of defendant or defense counsel.
- 27 14. All documents relating to work, testing, reports, notes, summaries, studies or research
- 28 done by or at the request of the expert pertaining to this case.

1 15. All lecture notes, outlines and/or course materials that the expert has used in any
2 teaching capacity concerning tobacco, nicotine, addiction, cigarettes, cigarette smoking and
3 asbestos.

4 16. A listing of prior deposition, trial, congressional, governmental and other testimony
5 (including affidavits) of the expert.

6 17. An inventory of all medical records including pathology and radiology pertaining to
7 Alan Harvey that the expert relied upon in order to form his or her opinion in the case.

8 18. All forms, written procedures, diagnostic materials and questionnaires used at the
9 expert's institution, department, clinic or private office for obtaining and analyzing information
10 for diagnosing (1) chronic disease including lung cancer or other respiratory disease and (2)
11 substance dependence, including nicotine dependence, addiction and substance-use disorders.

12 19. All articles, books, or book chapters written by or contributed to by the expert that are
13 in press or not otherwise publically available.

14 20. All presentations and public statements, including those made for the media and
15 legislative/regulatory purposes, that in any way address Philip Morris, Inc., R.J. Reynolds
16 Tobacco Co. or smoking cessation programs.

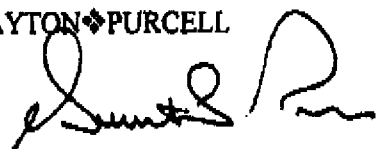
17	<u>DEPONENT</u>	<u>DATE</u>	<u>TIME</u>
18	DAVID BARCAY, M.D.	April 12, 2002	9:00 am
19	EDWIN BRADLEY, Ph.D	April 12, 2002	1:00 pm
20	MARTIN J. CLINE, M.D.	April 15, 2002	9:00am
21	LAWRENCE COHEN, M.D.	April 15, 2002	1:00pm
22	MARK I. GREENE, Ph.D.	April 16, 2002	9:00 am
23	LUCY HENKE	April 16, 2002	1:00pm
24	JAMES P. KORNBERG, M.D.	April 17, 2002	9:00am
25	JAMES LANGENFELD, Ph.D.	April 17, 2002	1:00pm
26	MARK S. LIPIAN, M.D.	April 18, 2002	9:00 am
27	///		
28	///		

	<u>DEPONENT</u>	<u>DATE</u>	<u>TIME</u>
2	KENNETH M. LUDMERER, M.D.	April 18, 2002	1:00 pm
3	JAMES KIRBY MARTIN, Ph.D.	April 19, 2002	9:00am
4	HARMON McALLISTER, Ph.D.	April 19, 2002	1:00pm
5	MONA F. MELHEM, M.D.	April 22, 2002	9:00 am
6	GITA MOAREFI, M.D.	April 22, 2002	1:00pm
7	LAWRENCE NATHAN, D.O.	April 23, 2002	9:00am
8	EUGENE ONG, M.D.	April 23, 2002	1:00pm
9	JOHN L. PETERMAN, Ph.D.	April 24, 2002	9:00 am
10	PETER P. ROWELL, Ph.D.	April 24, 2002	1:00 pm
11	ANTOINE SAMMAN, M.D.	April 25, 2002	9:00am
12	MICHAEL SCHALLER, Ph.D.	April 25, 2002	1:00pm
13	RICHARD D. THOMAS, Ph.D.	April 26, 2002	9:00 am
14	DOUG TUCKER, M.D.	April 26, 2002	1:00pm
15	W. KIP VISCUSI, Ph.D.	April 29, 2002	9:00am
16	RUDOLPH VON BERG, Ph.D.	April 29, 2002	1:00pm
17	WILLIAM E. WECKER, Ph.D.	April 30, 2002	9:00 am
18	RICHARD A. CARCHMAN, Ph.D.	April 30, 2002	1:00 pm
19	JERRY F. WHIDBY Ph.D.	May 1, 2002	9:00am
20	THOMAS RICHARD ADAMS, CPA	May 1, 2002	1:00pm
21	J. DONALD deBETHIZY, Ph.D.	May 2, 2002	9:00 am
22	JEFFREY S. GENTRY, Ph.D.	May 2, 2002	1:00pm
23	DAVID N. LAUCO	May 3, 2002	9:00am
24	ARNOLD T. MOSBERG, Ph.D.	May 3, 2002	1:00pm
25	DAVID E. TOWNSEND, Ph.D.	May 6, 2002	9:00 am
26	///		
27	///		
28	///		

1 Plaintiffs tender witness fees to said deponents at commencement of the respective
2 depositions.

3 Dated: 3.29.02

BRAYTON ♦ PURCELL

4
5 By: 
6 Gilbert L. Purcell, Esq.
7 Attorneys for Plaintiffs
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PROOF OF SERVICE BY MAIL

I am employed in the County of Marin, State of California. I am over the age of 18 years and am not a party to the within action. My business address is 222 Rush Landing Road, Novato, California, 94945.

On 3/29/02, I served the within:

NOTICE OF TAKING DEPOSITION AND REQUEST FOR PRODUCTION OF DOCUMENTS AND THINGS AT DEPOSITION

on the interested parties in this action by transmitting a true copy thereof in the following manner.

I caused each of the above document(s) to be placed in a sealed envelope, postage thereon prepaid, addressed and served as follows:

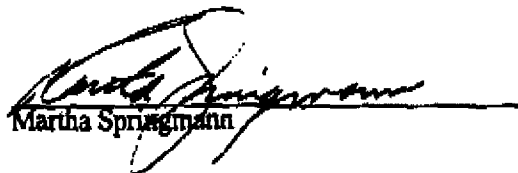
SEE ATTACHED LIST

BY MAIL SERVICE:

I am readily familiar with the business practice at my place of business for collection and processing of correspondence for delivery by mail. Correspondence so collected and processed is deposited with the United States Postal Service on the same day in the ordinary course of business. On the above date the said envelope was collected for the United States Postal Service following ordinary business practices.

Executed 3/29/02, at Novato, California.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.


Martha Springmann

Alan Harvey and Madeline Harvey v. Asbestos Defendants
San Francisco Superior Court Case No. 312112

1
PROOF OF SERVICE BY MAIL

BRAYTON PURCELL
ATTORNEYS AT LAW
222 RUSH LANDING ROAD
NOVATO, CALIFORNIA 94945-4169
(415) 898-1555

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PRINTED: 11/29/2002 BY MES
 SORT BY: Attorney
 CLIENTS: Alan D. Harvey

BRAYTON PURCELL
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CARLOCK, INC. Glaspy & Glaspy (W.C.) One Walnut Creek Center 100 Pringle Avenue, Suite 750 Walnut Creek, CA 94596 (925)947-1300 (925)947-1594	R.J. REYNOLDS TOBACCO COMPANY Howard, Rice, McMerovski et al 3 Embarcadero Center, 8700 Seventh Floor San Francisco, CA 94111-4065 (415)434-1600 *415*217-5910	ALTA BUILDING MATERIALS COMPANY Jackson & Wallace 55 Francisco Street Sixth Floor San Francisco, CA 94133 (415)982-6300 (415)982-6700	PLANT INSULATION COMPANY (FORMER) Jackson & Wallace 55 Francisco Street Sixth Floor San Francisco, CA 94133 (415)982-6300 (415)982-6700
COMBUSTION ENGINEERING, INC. Knox Rickson LLP 2101 Webster Street Suite 650 Oakland, CA 94612-3069 (510)285-2500 *510*285-2505	CENTER FOR CLAIMS RESOLUTION McKenna & Cuneo (SF) One Market, Stewart Street Two Lisa Oberg, Esq., 27th Floor San Francisco, CA 94105 (415)267-4000 (415)267-4198	CERTAINTEED CORPORATION McKenna & Cuneo (SF) One Market, Stewart Street Two Lisa Oberg, Esq., 27th Floor San Francisco, CA 94105 (415)267-4000 (415)267-4198	UNION CARBIDE CORPORATION McKenna & Cuneo (SF) One Market, Stewart Street Two Lisa Oberg, Esq., 27th Floor San Francisco, CA 94105 (415)267-4000 (415)267-4198
PHILIP MORRIS, INCORPORATED Shook, Hardy & Bacon 333 Bush Street, Ste. 600 San Francisco, CA 94104 (415)544-1900 (415)191-0281	ACANES, INC. The St. Peter Law Group 20 California St. 7th Floor San Francisco, CA 94111 (415)955-0700 *415*955-0711	RAPID-AMERICAN CORPORATION Thelen Reid & Priest, LLP 101 Second St., Ste 1800 San Francisco, CA 94105-3601 (415)371-1200 *415*644-6519	

<<END OF REPORT>>

W07380171

No. 7282

I N V O I C E

April 8, 2002

TO: Paul S. Ryerson, Esq.
JONES, DAY, REAVIS & POGUE
51 Louisiana Avenue, N.W.
Washington, D.C. 20001

Consulting Services of Dr. R. Thomas
(Unless otherwise stated, work was research and development.)
Account under which work was completed:

Re: Alan Harvey v. R. J. Reynolds et al.

Examine the medical records for Alan Harvey.
Review epidemiologic data on lifestyle, occupational and
environmental exposures, and associated diseases.
Review adenocarcinoma of the lung and pleural scarring.
Examine medical and scientific literature for adenocarcinoma and
associated risk factors.
Meeting to discuss medical and scientific issues.

CONSULTING TIME: Total Hours

Dr. Richard Thomas	21.5
Mr. Chad McMullin	36.5
Research Assistant	43.0

101.0

Invoice February 1 through February 28, 2002

Total Consulting Time (hours): 101.0

Cost at \$400.00/hour \$ 40,400.00 \$ 40,400.00

OTHER EXPENSES:

Telephone	44.27
Fed. Express	13.32
Computer Search	32.51
Copying	54.30
Literature Retrieval	57.38
Supplies	46.89
Parking	12.00

\$ 260.67 \$ 260.67

TOTAL INVOICE

\$ 40,660.67

Make check payable to: Thomas & Thomas Technologies, Inc.
1307 Dolley Madison Blvd., Suite 4A
McLean, Virginia 22101-3913

No. 7281

I N V O I C E

March 20, 2002

TO: Paul S. Ryerson, Esq.
JONES, DAY, REAVIS & POGUE
51 Louisiana Avenue, N.W.
Washington, D.C. 20001

Consulting Services of Dr. R. Thomas
(Unless otherwise stated, work was research and development.)
Account under which work was completed:

Re: Alan Harvey v. R. J. Reynolds et al.

Examine the medical records for Alan Harvey.
Review epidemiologic data on lifestyle, occupational and
environmental exposures, and associated diseases.
Review adenocarcinoma of the lung and pleural scarring.
Examine medical and scientific literature for adenocarcinoma and
associated risk factors.
Meeting to discuss medical and scientific issues.

CONSULTING TIME: Total Hours

Dr. Richard Thomas	32.0
Mr. Chad McMullin	42.5
Research Assistant	47.5

122.0

Invoice January 1 through January 31, 2002

Total Consulting Time (hours): 122.0

Cost at \$400.00/hour \$ 48,800.00 \$ 48,800.00

OTHER EXPENSES:

Telephone	41.52
Fed. Express	13.32
Computer Search	31.87
Copying	52.40
Literature Retrieval	64.70
Supplies	34.59
Parking	12.00

\$ 250.40 \$ 250.40

TOTAL INVOICE

\$ 49,050.40

Make check payable to: Thomas & Thomas Technologies, Inc.
1307 Dolley Madison Blvd., Suite 4A
McLean, Virginia 22101-3913

May 2, 2002

RICHARD D. THOMAS, Ph. D.

**TRIAL TESTIMONY
(1998 - 2002)**

- Kenyon v. R.J. Reynolds Tobacco Company, No. 00-5401 (13th Judicial Circuit, Hillsborough County, Fla.) (November 30, 2001).
- Mehlman v. Philip Morris, Inc., et al., No. L-1141-99 (Sup. Ct., Middlesex County, N.J.) (May 1, 2001).
- Gilboy v. American Tobacco Company, et al., No. 314, 002 (19th Judicial District, Baton Rouge, La.) (July 6, 1999).
- Engle et al. v. R.J. Reynolds Tobacco Company, et al., No. 94-08273 CA (20) (11th Judicial Circuit, Dade County, Fla.) (April 5-6 and 12-14, 1999).
- Newcomb v. R.J. Reynolds Tobacco Company, et al., No. 889-13-8 (T.D.) (Cir. Ct., Shelby County, Tenn.) (March 30, 1999).

**DEPOSITION TESTIMONY
(1998 - 2002)**

- Engle, et. al. v. R.J. Reynolds Tobacco Company, et. al., Case No. 94-08273 CA (20) (11th Judicial Circuit, Dade County, Florida) (April 29, 1998).
- Iron Workers Local Union No. 17 Insurance Fund, et. al. v. Philip Morris, Inc., et. al., No. 1: 97CV1422 (N.D. Ohio) (December 17, 1998).
- Whiteley v. Raybestos-Manhattan, et al., No. 303184 (Super. Ct, San Francisco, Cal.) (November 19, 1999).
- Little v. Brown & Williamson Tobacco Corporation, et al., No. 2-98-1879-23 (D. Ct., Charleston Div., S.C.) (February 22, 2000).
- Falise v. American Tobacco Company, et al., No. 99 CV 7392 (E. D. N.Y., Brooklyn) (June 27, 2000).
- Seaborn v. R. J. Reynolds Tobacco Company, et al., No. CV-96-215 (Cir. Ct., Clayton Div., Barbour County, Ala.) (September 15, 2000).
- In Re: Tobacco Litigation (Medical Monitoring), No. 00-C-6000 (Cir. Ct., Ohio County, W. Va.) (October 3, 2000).
- Scott, et al. v. American Tobacco Company, et al., No. 96-8461 (Civ. Dist. Ct., Parish of Orleans, La.) (November 28, 2000).
- Lucier v. Philip Morris Incorporated, et al., No. 312610 (Super. Ct., San Francisco, Cal.) (Jan 10, 2002).

Expert Witness Report References

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- "Smoking and Health, Report of the Advisory Committee to the Surgeon General of the Public Health Service", Public Health Service Pub. No. 103, Washington, DC. (1964).
- Boyd, W., A Textbook of Pathology, Fifth Edition, LEA & Febiger, Philadelphia (1947).
- Anderson, W.A.D. (Ed.), Pathology, the C.V. Mosby co., St. Louis (1948).
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- Doll, R., Hill, A.B., "Smoking and Carcinoma of the Lung," British Medical Journal, (September 30, 1950).
- Mills, C.A. and Porter, M.M., "Tobacco Smoking Habits and Cancer of the Mouth and Respiratory System," Cancer Research, Vol. 10, No. 9, (September, 1950).
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1969 - 1971 B.S. in Chemistry, Utah State University.
1965 - 1967

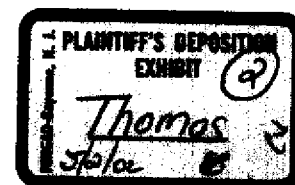
CERTIFICATIONS:

Diplomate of the American Board of Toxicology (DABT), 2002-2007 (Current Terms)
Diplomate of the American Board of Forensic Medicine (BCFM) 1996-2002
Board Certified Forensic Examiner (BCFF) 1996-2003
Certified Environmental Inspector (CEI), 1993-2002
Certified Professional Chemist (CPC), 1995-2001

ACADEMIC APPOINTMENTS:

Adjunct Professor, Uniformed Service University of the Health Sciences, F. Edward Herbert School of
Medicine, Bethesda, MD

Adjunct Professor, Department of Toxicology, School of Medicine, University of Maryland, Baltimore,
MD



SAMPLE COURSES TAUGHT:

Use of Biologic Markers in Monitoring Public Health, International Public Health, United Nations University, 1990, 1992

Toxicology and Risk Assessment Methods, John Hopkins University, 1988-89

Principles of Quantitative Pathology and Toxicology, Uniformed Service University of the Health Sciences, 1989-95

Animal Testing Practices, Toxicology Course, George Washington University, 1986-87

Use of Toxicologic and Risk Assessment Techniques for Public Health Decisions, University of Maryland, 1991-95

New Methods in Risk Assessment for Regulation, Howard University, Washington, D.C., 1994-96

Biomedical Ethics Issues in U.S. Research Laboratories, National Institute of Health, Bethesda, MD, 1993-94

Use of Risk Assessment Methods for Public Health Development, The World Bank, 1994-97.

Assessment of Environmental Contamination and Emergency Response Planning, World Health Organization, 1995.

New Scientific Development in the use of Biologic Markers, American College of Toxicology 1996

SUMMARY OF PROFESSIONAL ACTIVITIES:

Dr. Thomas is CEO and Managing Director of the International Center for Environmental Technology (INTERCET) since February 1997. He also serves as Director of the International Center for Environmental Health, now part of the INTERCET Group of companies. Previously he was Director of Human Toxicology and Risk Assessment at the National Academy of Sciences/National Research Council (NAS/NRC). His research interests concern the mechanisms of toxic action of chemicals and the related

ultrastructural changes in tissues. He has directed studies at NAS for more than ten years on the testing of complex mixtures, the assessment of contaminants in drinking water, the development of biological markers, the use of pharmacokinetics in risk assessment, acceptable exposure levels of environmental contaminants in spacecraft and submarines, the recommendation of acceptable levels of chemical exposure for military personnel, and the development of new methods for risk assessment.

He was responsible for development of the basic mechanistic studies at the NAS/NRC that resulted in the five volume series on the use of biologic markers in toxicology. He has directed toxicologic studies at Borriston Laboratories, the MITRE Corporation, SRI International, and CIBA-GEIGY Corporation. He has chaired or served on several committees dealing with the review and validation of toxicity studies, the development of new test protocols, and the emergency response to chemical accidents. Besides his extensive involvement in national scientific programs, he has had wide international experience in programs on toxicity testing, emergency response, standard setting, and regulatory affairs including work with the United Nations, U.S. Agency for International Development, the World Health Organization, and the World Bank. He is a Diplomate of the American Board of Toxicology (D.A.B.T.) and a member of over 25 scientific organizations. He is the author or co-author of approximately 100 publications and research studies. He has had continuing involvement in Society of

Toxicology activities and has been a member of two program committees. He is Past-President of the American College of Toxicology.

APPENDIX I

PROFESSIONAL APPOINTMENTS

**February 1997 – Current International Center for Environmental Technology
(INTERCET, Ltd.)
CEO and Managing Director**

Responsible for the development of an international center to apply integrated approaches to the assessment of human and ecological risk. Monitors day-to-day planning, resource allocation, and program development. He is also the senior scientist for all technical programs. The center provides leadership and technical expertise in dealing with health-related concerns involving the environmental impacts of chemicals and radiation, hazardous waste, public awareness, perception, and environmental training. The center has a comprehensive data repository, conducts computer modeling, and analysis of health and environmental issues. Areas of expertise include Toxicology/Pathology, Computer Modeling/Data Base Development, Risk Assessment, and Occupational and Environmental Health. INTERCET advises industry and government through risk assessments, research and analysis, litigation support, environmental site assessments and environmental management systems.

**May 1994 - Current International Center for the Environment and Health (ICEH)
Director (Part of the INTERCET Group of Companies)**

In addition to conducting risk assessments, ICEH develops action plans using the risk management process for policy development. ICEH defines attainable objectives, designs specialized studies and programs, monitors and evaluates on-going activities, suggests practical interventions, and serves as a credible, neutral, third party organization evaluating the environmental factors that may influence human health. The Center brings together scientists, physicians, engineers, and educators to provide public service from the local, regional, and national to the international level.

September 1982 - May 1994 Environmental Studies and Toxicology, Associate Director (1991 - 94)

**National Research Council
National Academy of Sciences
Director, Human Toxicology and Risk Assessment (1986 - 1994)
Principal Staff Officer**

Director, Human Toxicology and Risk Assessment (Formerly Toxicology, Epidemiology, and Risk Assessment). Responsible for approximately 25 committees and subcommittees examining issues in toxicology dealing with the testing of complex mixtures, the assessment of contaminants in drinking water and in air, the development of biological markers, the use of pharmacokinetics in risk assessment, the development of acceptable exposure levels of environmental contaminants in closed spaces, the recommendation of acceptable levels of chemical exposure for military personnel, workers, and the public, and the development of new methods for risk assessment. Responsible for the review and validation of toxicity studies, the development of new test protocols, and the emergency response to chemical accidents. Responsible for international programs in toxicity testing, emergency response, standard setting, and regulatory affairs, including work with the United Nations and the World Health Organization.

Director, Committee on Toxicology. The Committee on Toxicology (COT) is one of the oldest standing committees of the NRC. It was established in 1947 to enhance the professions of toxicology and industrial hygiene in national and international affairs and provide advice and assistance to the Armed Forces in solving toxicologic problems. Over the years the Committee's activities have grown and it now advises other federal agencies such as the National Aeronautics and Space Administration (NASA), the Coast Guard, the Office of Research and Development and the Office of Drinking Water of

the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Department of Energy (DOE), and the Consumer Product Safety Commission (CPSC) on toxicology and risk assessment issues. Dr. Thomas interacts with sponsors, monitors budgets, plans, organizes, and coordinates all committee programs. He is responsible for responding to frequent questions on toxicology, risk assessment, and potential health effects from military operations and from other National and International programs. He is also Director of the COT Emergency Response Team, which provides rapid response to military questions and crises. The COT is organized in approximately 15 subcommittees, all examining different issues.

Program Director, Committee on Risk Assessment of Hazardous Air Pollutants. Concerns over air and its contamination by toxic pollution have led to a body of legislation about clean air. The most recent of these pieces of legislation is the Clean Air Act Amendments of 1990. As part of that legislation, the Congress directed the administrator of the Environmental Protection Agency (EPA) to engage the National Academy of Sciences (NAS) in a review of the methods that EPA uses to ensure that Americans have appropriately clean air. This report provides advice to enable EPA to carry out the mandates of the Clean Air Act and to satisfy Congress's concerns about the implementation of the act and its 1990 amendments. Specifically, the committee was charged with reviewing the risk-assessment methods used by EPA "to determine the carcinogenic risk associated with exposure to hazardous air pollutants" and to suggest improvements in such methods. The elements to be studied by the committee included "the techniques used for estimating and describing the carcinogenic potency to humans of hazardous air pollutants, as well as methods for estimating exposure to these materials." The legislation instructed NAS to "evaluate and report on the methodology for assessing the risk of adverse health effects" for hazardous air pollutants.

Scientific Director, Committee on Pesticides in the Diets of Infants and Children. The Committee examined science and policy issues faced by regulatory agencies, particularly EPA, in the regulation of exposure to pesticide residues in the diets of infants and children. Toxicological issues of general and unique relevance to infants and children were examined, and current methods for setting safety factors and determining acceptable levels of exposure to pesticides through consumption of food and water were reviewed. The Committee prepared a final report that identified toxicological issues of greatest concern; clarified what is known about exposure to pesticide residues in the diets of infants and children; made recommendations on ways to improve the current risk assessment process; and identified research priorities.

Program Director, Committee on Measuring Lead Exposure in Critical Populations. The Committee identified and evaluated methods for measuring environmental exposures to lead in critical populations, e.g., children under two years of age, and pregnant women. The study especially emphasized techniques for measuring very low lead body burdens, e.g., blood lead levels below 25-30 µg/dL, and particularly those techniques that are suitable for screening and diagnostic purposes. Techniques such as x-ray fluorescence, isotope dilution, and enzyme-specific assays, among others, were considered and evaluated. The Committee produced a report that recommended options for research strategies to refine techniques for measuring lead in biological matrices.

Program Director, Committee on Biologic Markers. The Board on Environmental Studies and Toxicology conducted a three-year study to consider the use of biologic markers in environmental health research. The objectives were to clarify the concepts and definitions surrounding biologic markers, to propose guidelines for the validation of methods, to recommend promising areas for future research on markers, to review the potential of existing specimen banks for archiving and retrospective analysis of markers, and to evaluate potential markers as measures of exposure, indicators of preclinical health effects, or individual susceptibility in three systems or body functions. These systems were selected from a list that included the respiratory, nervous, reproductive, immune, and endocrine systems.

Selection was based on the availability of sufficient data on the biochemical or cellular effects of toxicants on these systems, and the overall potential for the elucidation of biological markers.

Project Director, Committee on Complex Mixtures. Most toxicity studies are performed to evaluate the potential human health hazards of single chemicals. Humans however are exposed to many mixtures of chemicals, many of which contain toxic components. The testing methods used to evaluate the toxicity of single compounds may be inappropriate in the case of complex mixtures. The validity of such methods needs to be evaluated for the case of chemical mixtures. Toward this end, a Complex Mixtures Committee was established to provide information to the National Institute of Environmental Health Sciences (NIEHS) regarding *in vivo* toxicity testing methods for complex mixtures. The Committee considered and proposed research and development that was needed to improve the existing methods and devise new methods for testing and evaluation of chemical mixtures where such methods did not exist. The complex mixtures examined were those that occur in the human environment. A classification of such mixtures was attempted, and all routes of exposure were considered. Sampling problems such as heterogeneity and instability were addressed, as were problems of multiple and interfering endpoints. The design of experimental testing protocols was examined, and guidance was developed for conducting such tests, including selections of doses, duration of observations, and establishment of dose-response curves. Problems associated with synergistic interactions, low-dose extrapolation, and inter-species comparisons were also considered.

Project Director, Trauma Research Committee. The National Highway Traffic Safety Administration, acting on a Congressional directive, asked the National Research Council's Commission on Life Sciences and the Institute of Medicine to establish a joint committee to assess the current state of trauma research. The Committee of biological and medical scientists investigated the mechanisms of injury, prevention, treatment, and rehabilitation, and recommended research into the reduction of injury and death from trauma.

Project Director, Safe Drinking Water Committee. The Committee evaluated the toxicological literature on 14 compounds that are of regulatory interest to EPA because of their occurrence in water supplies. Estimates of safe exposure levels for these compounds were devised by methodologies and procedures developed in this and previous studies. Of equal importance to the Committee's charge was an examination of the scientific bases for standard setting in two particular areas: extrapolation of inhalation data on animals to determine human health effects from drinking water, and safety factors for estimating safe exposure levels for various toxic endpoints.

Senior Staff Officer, Committee on Protection against Mycotoxins. This Committee examined the toxicity of "yellow rain." The Committee considered methods for specific, sensitive, and rapid detection of tricothecene toxins under battlefield conditions; means for their destruction, disposal, and environmental decontamination; possible prophylaxes to prevent their toxic action in humans; and treatments for tricothecene-induced adverse effects.

Sept. 1975 - Current **Consultant**

Consultant in the Washington Metropolitan Area specializing in toxicology, health assessment, and environmental studies. Projects include the health assessment of economically important chemicals such as pesticides, petroleum solvents, plastics and food, and cigarette and tobacco additives; evaluation of the potential risks from the occupational exposure to industrial chemicals; design and evaluation of toxicologic protocols for laboratory bioassays; evaluation, review and validation of toxicologic protocols for laboratory bioassays and of completed toxicologic studies; preparation of reports presenting industrial test data for submission to governmental agencies; and development of research plans to fulfill testing requirements for new chemicals and new applications of existing chemical products.

April 1981 - Sept. 1982

**Borrison Laboratories, Inc.
Director, Division of Biochemical Toxicology**

Managed a professional scientific staff of approximately 12 researchers. Responsible for design, implementation and evaluation of toxicologic studies with special emphasis on pharmacokinetics/metabolism studies and systemic toxicity studies. Project included a variety of acute toxicity studies, liver enzyme induction studies, and cholinesterase inhibition studies. In some projects, the pharmacokinetics of test materials was determined. Other projects involved the elucidation of metabolic pathways through the isolation and identification of metabolites. Provided scientific input into cardiovascular and pulmonary monitoring studies, skin painting studies and subchronic and chronic toxicity studies. Responsible for the smooth conduct of laboratory work and the preparation and presentation of experimental results. Review and validation of toxicologic studies on important industrial chemicals in preparation for submission to governmental agencies or that had previously been submitted to fulfill registration requirements. Preparation of research reports presenting the results of toxicologic studies including hazard and risk analysis.

Sept. 1978 - April 1981

**METREK Division, The MITRE Corporation
Environmental Chemistry and Biology
Senior Toxicologist and Department Staff**

Responsible for providing technical guidance for toxicological projects including a review of the testing techniques used in animals to assess damage to the pulmonary, cardiovascular, hepatic and renal systems resulting from exposure to toxic substances; development of a management plan for in vitro testing laboratory; review of in vitro mutagenicity and carcinogenicity testing techniques; health hazard evaluations of benzyl alcohol, benzaldehyde and benzyl chloride; assessment of the health effects paraquat; and a review of the techniques used to assess the potential health effects of the byproducts of advanced coal combustion techniques.

April 1976 - Sept. 1978

**SRI International
Center of Occupational and Environmental Safety and Health
Manager and Toxicologist**

Managed a diverse professional staff in the conduct of various research programs dealing with the health effects produced by toxic substances. Directed the preparation of the Alkanes and Vinyl Compounds Criteria Documents for the recommendation of safe occupational and environmental exposure levels.

July 1974 - April 1976

**CIBA-GEIGY Corporation
Biochemistry Department
Senior Metabolism Scientist**

Responsible for studies dealing with biochemistry, metabolism, toxicology, and environmental impact. Work included the development of both laboratory and field protocols for studies in both animals and plants. The key responsibility of this position was the elucidation and identification of significant metabolites using sophisticated analytical techniques. Some of the techniques used were gas chromatography (GC), gas chromatography-mass spectrometry (GC-MS), high performance liquid chromatography (HPLC) infrared (IR) and FT-IR spectroscopy, electrophoresis, nuclear magnetic resonance (NMR) spectroscopy and radiolabel techniques. Responsible for the smooth conduct of complex field and laboratory studies and coordination of effort to meet project deadlines. Analysis of laboratory results, preparation of reports and presentation of technical information to government agencies.

June 1969 - Sept. 1971

U.S. Department of Agriculture (USDA)

**Poison Plants Division and Sugar Industries Division
Research Biochemist and Toxicologist**

Responsible for development of bioanalytical methods and animal testing of naturally occurring toxic substances found in plants using various animal species. Development of computer bioanalytical models.

APPENDIX II

PROFESSIONAL ACTIVITIES

Continuing Education

International Harmonization: Update on Scientific and Regulatory Issues, Part I: Foods, Drugs, Cosmetics, and Devices, Society of Toxicology, March, 1994

International Harmonization: Update on Scientific and Regulatory Issues, Part II: Toxic Substances and Environmental Issues, Society of Toxicology, March, 1994

New Approaches to Risk Assessment, Society of Toxicology, February 1993.

Statistical Methods in Toxicology, American College of Toxicology, October 1993.

Development and Safety Evaluation of Recombinant Products for Pharmaceutical and Agricultural Use, Society of Toxicology, February 1992.

Molecular Control of Cell Proliferation, Society of Toxicology, February 1992.

Advanced Molecular Toxicology: Application of Molecular Biology in Toxicology, Society of Toxicology, February 1991.

Risk Communication: Problems, Perceptions and Practice, Society of Toxicology, February 1991.

Health Effect of HCL in Ambient Air, Institute for Environmental Health, October 1990.

Concepts in Cell Biology, Society of Toxicology, February 1990.

Free Radical Toxicology, Society of Toxicology, February 1990.

A Rational Approach for Protecting Fetuses, International Life Sciences Institute, March 1989.

Commentary of Carcinogens, International Life Sciences Institute, April 1989.

Concepts in Molecular Biology, Society of Toxicology, February 1989.

Statistics for Toxicologists, Society of Toxicology, February 1989.

Risk of Immunotoxicology, National Institute of Environmental Health Sciences, December 1988.

Risk Assessment: First 15 Years; Next 15 Years, International Life Sciences Institute, November 1988.

Senior Management Training, University of Virginia, October 1988.

Respiratory Tract Toxicology, Society of Toxicology, March 1988.

Immunotoxicology, Society of Toxicology, March 1988.

Hepatotoxicity, Society of Toxicology, February 1987.

Clinical Chemistry of Laboratory Animals, Society of Toxicology, February 1987.

Use of Innovative Methodology in Toxicology, Society of Toxicology, March 1986.

Quantitative Methodology for Cancer Risk Assessment, Society of Toxicology, March 1986.

Selection of Tests for Assessment of Hepatotoxicity in Animals, Society of Toxicology, March 1984.

Neurotoxicology Training Course, Society of Toxicology, March 1984.

Biomechanics of Trauma, Institute for Medical Education, San Diego, Calif., October 1983.

Management Techniques, George Washington University, October 1983.

Toxicology in the Laboratory, American Chemical Society, April 1983.

Inhalation Toxicology, Society of Toxicology, March 1981.

Writing and Editing in Technical Fields, George Washington University, March - April 1980.

Post-Doctoral studies in pathology, George Washington University and the Armed Forces Institute of Pathology, 1979-1980.

Advanced Forensic Toxicology, George Washington University, Fall Semester, 1979.

Management Theory and Practice, George Mason University, Spring Semester, 1979.

Toxicology for Chemist (Organizer), American Chemical Society, April 1977.

Industrial Toxicology, Wayne State University, November 1976.

In vitro Mutagenesis Testing, University of North Carolina, February 1976.

Laboratory Management, North Carolina State University, June 1975.

Recent Presentations

Risk Assessment Approaches to Lung Disease, R.D. Thomas, Fifth International Conference on Environmental and Occupational Lung Disease, American College of Chest Physicians, Orlando, Florida, March 1995.

Risk Assessment and Risk Management in International Environmental Development, R.D. Thomas, Training of Trainers Workshop on Political Economy of the Environment for Anglophone Africa, Economic Development Institute of the World Bank. June 1995.

Markers Relevant to Effects on the Immune System, R.D. Thomas, International Searle Foundation Workshop, International Institute for Scientific Cooperation, Schloss Reisensburg, Ulm, Germany, September 1994.

Uncertainty and Variability in Risk Assessment, Annual Summer Toxicology Forum, The Given Institute of Pathobiology, Aspen, Colorado, July 1994.

Use of Risk Assessment and Risk Management Techniques for Public Health Policy, The World Bank, Washington, D. C., September 1994; February 1995.

"National Academy of Sciences Reports Pesticides in the Diets of Infants and Children and Comparative Toxicity of Naturally Occurring Carcinogens", The Toxicology Forum, 1993 Annual Summer Meeting, Aspen, CO, July 1993.

Session Chair, "Conference on the Risk Assessment Paradigm After Ten Years: Policy and Practice Then, Now, and in the Future," Wright-Patterson AFB, OH, April 1993.

"Toxicology and Risk Assessment of Complex Mixtures, National Institute of Health, Bethesda, MD, October 1992.

"Communicating Risk to the Public," USUHS, Bethesda, MD, May 1992.

"Short-Term Occupational Exposure Guidelines," American Industrial Hygiene Conference and Exposition, Boston, MA, May 1992.

"Future Directions in Risk Assessment Research," University of Maryland, Baltimore, MD, April 1992.

Participant, Panel Discussion, "Symposium on Respiratory Exposure: Effects and Protection from Hazardous Chemicals," American Chemical Society, Annual Meeting, Washington, DC, August 1992.

"The Development of Acceptable Exposure Levels for Spacecraft," NASA Space Station Science and Applications Advisory Subcommittee, Sunnyvale, CA, February 1992.

Session Chair, "Methods for Detecting Early Pulmonary Damage," Symposium on Animal Test Alternatives, Aberdeen, MD, February 1992.

Session Chair, "Aggregate Risk," Society for Risk Analysis, Annual Meeting, Baltimore, MD, December 1991.

"Risk Assessment - Public Health Consequences," USUHS, Bethesda, MD, July 1991.

"National Academy of Sciences Report on Pesticide Exposure in the Diets of Infants and Children," ILSI, Food, Nutrition, and Safety Committee, Washington, DC, June 1991.

"Current Developments in the Risk Sciences," Risk Science Workshop, Pittsburgh, PA, May 1991.

Session Chair, "Principles of Risk Assessment," Conference on Chemical Risk Assessment in the DoD: Science, Policy, and Practice, Dayton, OH, May 1991.

Conference Chair, Conference on Chemical Risk Assessment in the DoD: Science, Policy, and Practice, Dayton, OH, May 1991.

"Risk Assessment Practices for Infants and Children," NACA Spring Conference, 1991, Arlington, VA, April 1991.

"Risk Assessment New Techniques and Applications," USUHS, Bethesda, MD, April 1991.

"Advanced Molecular Toxicology: Application of Molecular Biology in Toxicology," Society of Toxicology 30th Annual Meeting, Dallas, TX, February 1991.

"Risk Communication: Problems, Perceptions and Practice," Society of Toxicology 30th Annual Meeting, Dallas, TX, February 1991.

"National Academy of Sciences' Infants and Children Study," Food Industry Pesticide Forum Meeting, GMA, Washington, DC, December 1990.

Biomarkers in Toxicology, ACT Annual Meeting, October 1990.

Gordon Research Conference, Risk Assessment of Toxic Chemicals, June 1988.

Managing Conduct and Data Quality of Toxicology Studies, NIEHS, November 1985.

Gordon Research Conference, Mechanisms of Toxicity, June 1985.

APPENDIX III

PROFESSIONAL AFFILIATIONS

American Association of the Advancement of Science

American Board of Forensic Examiners

American Chemical Society

Member, Chemical Safety Committee, 1978-1984

Member, Executive Committee, Division of Chemical Health and Safety, 1978-1981

Chairman, Nominations and Elections Committee, 1978-1981

Chairman, Constitution and By-Laws Committee, 1978-1984

Chairman, Task Force on Food Safety Amendments 1983-1984

Technical Advisor, National Chemical Health and Safety Referral Service, 1979-1981

American College of Toxicology

Council, 1988-1991

Chairman, Education Committee, 1990-1991

Member, Finance Committee, 1991-1992

Vice-President, 1991-1992

President-Elect, 1992-1993

President, 1993-1994

American Industrial Hygiene Association

Member, Committee on Emergency Response Planning, 1987-1995

American Institute of Chemists

Fellow, 1990

American Public Health Association

American Society for Applied Spectroscopy

American Society for Testing and Materials

Member, Committee on Biological Effects and Environmental Fate (E-47), 1990-1995

American Water Works Association, Health Effects Committee

Member, 1986-1988

Chairman, 1988-1991

Delta Phi Kappa Honorary Society

Chairman, Committee on Occupational Development

Environmental Health Institute

Environmental Mutagen Society

Genetic Toxicology Association

National Capital Region Chapter, Society of Toxicology

Member, Nominations Committee

Member, Program Committee

New York Academy of Sciences

Society for Occupational and Environmental Health

Society for Risk Analysis

Member, Program Committee

Society for Technical Communication

Society of Toxicology

United States and Canadian Academy of Pathology

Who's Who, Science and Engineering, 1984-date

Who's Who, U.S. Registry, 1986-date

Who's Who Worldwide, 1992/1993 Platinum Edition of Worldwide Registry

Member, Outstanding Achievement and Leadership in Science

APPENDIX IV

BIBLIOGRAPHY

Separation of Furocoumarins by High Pressure Liquid Chromatography, F.R. Stermitz and R.D. Thomas, *Journal of Chromatography*, 77:431-433, 1973.

Analytical and Chemical Methods for the Isolation and Characterization of Toxic Plant Metabolites, R.D. Thomas (Doctoral Thesis), Colorado State University, Fort Collins, 1974.

Preparation Scale Purification of Natural Products, Technical Bulletin #AN127, Water Associates, Inc., Milford, MA, 1974.

Isolation of Nitro Compounds from Astragalus Species, M.C. Harlow, F.R. Stermitz and R.D. Thomas, *Phytochemistry*, 14:1421-1421, 1975.

Furocoumarins of Cymopterus Watsomii, F.R. Stermitz and R.D. Thomas, *Phytochemistry*, 14:1681, 1975.

Nitro Compounds in Astragalus Species, M.C. Williams, F.R. Stermitz and R.D. Thomas, *Phytochemistry*, 14:2306-2308, 1975.

Book Review: Biochemistry Problems and Calculations by A.H. Mehler and R.D. Thomas, *AAAS Science Books and Films*, November 1976.

Occupational Exposure to Alkanes: Criteria for A Recommended Standard, R.D. Thomas, National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare, Washington, DC, March 1977.

Book Review: Mechanisms and Theory in Organic Chemistry by T.H. Lowry, K.S. Richardson, and R.D. Thomas, *AAAS Science Books and Films*, March 1977.

Occupational Exposure to Refined Petroleum Solvents: Criteria for a Recommended Standard, J.C. Warrick, E.M., Yuhas, R.D. Thomas, National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare, Washington, DC, July 1977.

Occupational Exposure to Vinyl Compounds: Criteria for a Recommended Standard, G.N. McEwen, R.D. Thomas, R.S. Baloyi, R.L. Joiner, National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare, Washington, DC, April 1978.

Occupational Exposure to Vinyl Acetate: Criteria for a Recommended Standard, K.R. Ockermann, R.D. Thomas, R.S. Baloyi, National Institute for Occupational Safety and Health, U.S. Department of Health, Education, and Welfare, Washington, DC, September 1978.

Environmental Sources of Benzene Exposure: Source Contribution Factors, S.C. Drill and R.D. Thomas, MITRE Corporation Publication MTR-7799, Metrek Division, the MITRE Corporation, McLean, VA, November 1978.

Management Plan for a Short-Term Bioassay Toxicology Testing Laboratory, J. Golden and R.D. Thomas, Environmental, Energy, Resources Division, Metrek Division, The MITRE Corporation, McLean, VA, December 1978.

Review of Short-Term Bioassay Toxicologic Testing Techniques, R.D. Thomas and L.W. Thomas, Environmental, Energy, Resources Division, Metrek Division, The MITRE Corporation, McLean, VA, January 1979.

Book Review: A Consumer's Dictionary of Food Additives by R. Winter and R.D. Thomas, *AAAS Science Books and Films*, February 1979.

Narcotics Control in Mexico: Environmental Impacts Statement, D. Aurand, R. Thomas, S. Hoffman, M. McNamara, W. Tyndall, A. Platt, Bureau of International Narcotics Matters, U.S. Department of State, Washington, DC, April 1979.

Narcotics Control in Mexico: Environmental Analysis of Effects in Mexico, J. Pratt, S. Hoffman, W. Tyndall, M. McNamara, R. Thomas, Bureau for International Narcotics Matters, U.S. Department of State, Washington, DC, April 1979.

Health Effects Research Program, Fiscal Years 1974-1978 Summary Federal Interagency Energy/Environmental Research and Development Program, R.D. Thomas, A.D. Taylor, J.G. Gordon, Office of Research and Development, U.S. Environmental Protection Agency, Washington, DC, May 1979.

The Health and Safety Risks of Advanced Coal Combustion Technologies: Review of Toxicology and the Development of Health Effects Research Program, J. Hushon, R. Thomas, A. Singh, R. Brown, Interagency Committee on Advanced Fuels Technology, U.S. Department of Energy, Washington, DC, May 1979.

Environmental Sources of Nitrate Exposure: Source Contribution Factors, R.D. Thomas, MITRE Corporation Publication WP-7900182, Metrek Division, The MITRE Corporation, McLean, VA, June 1979.

Issue Papers on Selected Aspects of the United States-Mexico Narcotics Eradication Program, M. McNamara, W. Tyndall, R. Thomas, J. Bendall, D. Aurand, Bureau for International Narcotics Matters, U.S. Department of State, Washington, DC, July 1979.

Directory of Institutions/Individuals Involved in Utilization/Development of Cardiovascular Bioassays in Laboratory Animals, R. Thomas, P. Greenaway, Environmental Protection Research Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, August 1980.

Directory of Institutions/Individuals Involved in Utilization/Development of Pulmonary Bioassays in Laboratory Animals, S. Drill, R. Thomas, T. Zimmerman, Environmental Protection Research Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, August 1980.

Directory of Institutions/Individuals Involved in Utilization/Development of Hepatic Bioassays in Laboratory Animals, P. Greenaway, J. Konz, R. Thomas, Environmental Protection Research Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, August 1980.

Evaluation of Short-Term Bioassays to Predict Functional Impairment: Selection Short-Term Cardiovascular Toxicity Tests, R. D. Thomas, Environmental Protection Research Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, October 1980.

Evaluation of Short-Term Bioassays to Predict Functional Impairment: Selection Short-Term Pulmonary Toxicity Tests, R.D. Thomas, Environmental Protection Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, October 1980.

Evaluation of Short-Term Bioassays to Predict Functional Impairment: Selection Short-Term Renal Toxicity Tests, B. Fuller, R. Thomas, J. Konz, and L. Thomas, Environmental Protection Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, October 1980.

Evaluation of Short-Term Bioassays to Predict Functional Impairment: Selection Short-Term Hepatic Toxicity Tests, R. Thomas, R. Wands, A. Singh, and L. Thomas, Environmental Protection Division, U.S. Army Medical Research and Development Command, Fort Detrick, MD, October 1980.

Health Evaluation of Benzyl Alcohol, R.D. Thomas, MITRE Corporation, Publication WP-80W00950, Metrek Division, The MITRE Corporation, McLean, VA, December 1980.

Health Evaluation of Benzaldehyde, S. Krop and R. Thomas, MITRE Corporation Publication WP-80W00952, Metrek Division, The MITRE Corporation, McLean, VA, December 1980.

Health Evaluation of Benzyl Chloride, P.D. Greenaway and R.D. Thomas, MITRE Corporation Publication WP-80W00951, Metrek Division, The MITRE Corporation, McLean, VA, December 1980.

Recommendations of Safety, Industrial Hygiene and Major Disaster Plan for The Industrial Fuel Gas Demonstration Plant (IFGDP) Project, D. Cox, R. Thomas, H. Williams, MITRE Corporation Publication WP-81W00105, Metrek Division, The MITRE Corporation, McLean, VA, January 1981.

Human Response from Exposure to Toxic Substances, R.D. Thomas, Health and Safety in the Laboratory - Assessing the Risks Conference, American Chemical Society Division of Chemical Health and Safety, Chemical Society of Washington and George Mason Institute, Arlington, VA, April 29, 1982.

Animals in Toxicologic Testing--A Review, R.D. Thomas, *Clinical Chemistry*, 6:3-8, 1981.

Health Hazard Evaluation of Epichlorohydrin, U.S. Environmental Protection Agency, Research Triangle Park, NC, September 1982.

Protection of Civilian and Military Populations Against Mycotoxins, R.D. Thomas, Senior Staff Officer, National Academy of Sciences/National Research Council, Washington, DC, September 1983.

Protection of Civilians and Military Populations, Richard D. Thomas, *Lifelines*, 9(4):2-4, 1983.

Drinking Water and Health: A New Study, Richard D. Thomas, *Lifelines*, 10(2):1-2, 1984.

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