

1 UNITED STATES DISTRICT COURT
2 EASTERN DISTRICT OF LOUISIANA

3 JO ANN BISHOP, ET AL,)
4 Plaintiffs,)
5 VS.) CIVIL ACTION NO. 07-2832
6 SHELL OIL CO., ET AL,)
7 Defendants.)

8 *****

9 ORAL AND VIDEOTAPED DEPOSITION OF
10 ETHAN A. NATELSON, M.D.

11 JUNE 5, 2009

12 *****

13
14 ORAL AND VIDEOTAPED DEPOSITION of ETHAN A.
15 NATELSON, M.D., produced as a witness at the instance of
16 Defendant Shell, and duly sworn, was taken in the
17 above-styled and numbered cause on the 5th day of June,
18 2009, from 1:41 p.m. to 3:49 p.m., before Patricia L.
19 Fairley, CSR in and for the State of Texas, reported by
20 machine shorthand, at the offices of Haynes and Boone,
21 L.L.P., One Houston Center, 1221 McKinney Street,
22 Suite 2100, Houston, Texas, pursuant to the Federal
23 Rules of Civil Procedure and the provisions stated in
24 the record or attached hereto.
25

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ALSO PRESENT:

Mr. Wes Harris

REPORTED BY:

Ms. Patricia L. Fairley, CSR No. 6639

EXAMINATION INDEX

	PAGE
APPEARANCES	2
EXAMINATION BY MR. WILLIAMS	6
EXAMINATION BY MR. PERRY	84
FURTHER EXAMINATION BY MR. WILLIAMS	92
CHANGES AND SIGNATURE	100
REPORTER'S CERTIFICATION	102

EXHIBIT INDEX

NO.	DESCRIPTION	PAGE
1	Video Notice of Deposition of Ethan Natelson, M.D.	7
1A	Curriculum Vitae, May 2009	57
1B	Report dated 4/22/09 by Ethan A. Natelson, M.D.	57
2	Testimony given by Dr. Ethan A. Natelson	24
3	Report on Mortality from Leukemia and Lymphoma, Shell Oil Company, Shell-Bishop-009231-009242	24
4	Documents produced by Shell, Shell-Bishop-005379-005399	29
5	Oral Deposition of Ethan Natelson, M.D., dated 6/1/05	52
6	Billing record of Ethan A. Natelson, M.D., dated 6/3/09	57
7	Various articles	64

EXHIBIT INDEX (Cont'd.)

1			
2	NO.	DESCRIPTION	PAGE
3	8	Federal Register, September 11, 1987,	70
4		Department of Labor, Occupational Safety	
5		and Health Administration, 29 CFR Part	
6		1910, Occupational Exposure to Benzene,	
7		Final Rule	
8			
9	9	Fisher Scientific, Material Safety Data	73
10		Sheet	
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

1 THE VIDEOGRAPHER: We're on the record.
2 The time is 1:41 p.m. Today is Friday, June 5th, 2009.
3 This is the beginning of Videotape No. 1.

4 Would the court reporter please swear in
5 the witness.

6 ETHAN A. NATELSON, M.D.,
7 having been first duly sworn, testified as follows:

8 E X A M I N A T I O N

9 BY MR. WILLIAMS:

10 Q. Hello, Doctor. My name is Eric Williams, and
11 I'm going to be taking your deposition today. Would you
12 please state your full name and address for the record.

13 A. Ethan A. Natelson. My home address is 8707
14 Wateka Drive, Houston, Texas 77074.

15 Q. Okay. And, Doctor, did you receive a
16 deposition notice for this?

17 A. I did.

18 Q. And tell us what you brought with you today.

19 A. Yes, I have the notice here. What I brought
20 with me are a copy of my report on the case, a copy of
21 my curriculum vitae, a copy of the cases I have
22 testified in for the past five years, a copy of my
23 billing records to date, a copy of e-mails -- e-mail
24 correspondence with the attorneys, a -- any letters that
25 were sent to me by the attorneys, a declaration

1 concerning a filing, another copy of the notice.

2 These are medical records or, that is to
3 say, copies of medical records from these discs that I
4 have here. There also are some pleadings and some
5 material from plaintiffs' experts here.

6 Q. Okay. And what about the other stack?

7 A. Oh, excuse me. These are the articles that I
8 cited in my report.

9 Q. Okay. Well, Doctor, if -- if you'd slide that
10 over here -- and I'll try to --

11 A. Yeah.

12 Q. -- stay out of the way of the camera -- I'd
13 like to look at some of this. We'll get -- we'll get
14 back to your references here shortly. And you can hand
15 me this stack.

16 MR. FARNET: Yeah, not stapled to the
17 e-mails. I just wanted to make sure.

18 MR. WILLIAMS: What's that?

19 MR. FARNET: Yeah.

20 (Marked Natelson Exhibit No. 1.)

21 Q. (BY MR. WILLIAMS) Okay, Doctor. What's your
22 date of birth, Doctor?

23 A. January 22nd, 1942.

24 Q. And briefly tell us about your education.

25 A. Well, I went to high school in northern

1 Illinois in a town called Rockford. I went to college
2 outside Philadelphia at Haverford College. From
3 Haverford College, I went to Baylor medical school in
4 Houston, and I did residency training at the Baylor
5 Affiliated Hospitals, the Veterans Hospital, The
6 Methodist Hospital, the Ben Taub Hospital in Houston. I
7 did a fellowship in hematology at Baylor.

8 Then I went into the Air Force in San
9 Antonio under what was then called the Berry Plan. And
10 I was already a hematologist at that time, and so that
11 was a two-year program where I just did hematology.

12 And then I came back and was on the faculty
13 at -- at Baylor medical school for, perhaps, four or
14 five years. And then I defected to University of Texas
15 medical school and to St. Joseph Hospital, which is in
16 downtown Houston, and I was in charge of education
17 programs there for many years, until about three years
18 ago. I returned to Methodist Hospital to be in charge
19 of some of the education programs there.

20 Q. Okay. And where do you currently work?

21 A. At The Methodist Hospital in Houston.

22 Q. And what is your current title?

23 A. Well, I have a -- an associate professorship to
24 Weill Cornell medical school, which has an affiliation
25 with Methodist Hospital. I'm the director of the

1 Transitional Residency Program at Methodist Hospital,
2 and I'm a member of the Internal Medicine Residency
3 Program at Methodist.

4 Q. Do you treat patients, Doctor?

5 A. Yes, sir.

6 Q. Okay. Do you treat patients under any benzene
7 blood monitoring programs with Shell Oil?

8 A. No.

9 Q. Have you -- do you treat patients from any
10 refineries?

11 A. I may have seen patients from time to time from
12 refineries. From time to time, I've been asked to
13 evaluate patients who might have an abnormal blood count
14 and they've worked in a refinery.

15 Q. Okay. What refineries have you -- have you
16 done that for?

17 A. I can't tell you exactly. One was some sort of
18 a coal mine near Tyler, Texas. I don't remember the
19 name of that. Certainly not any one particular facility
20 exclusively.

21 Q. Have you seen any patients from Shell?

22 A. I don't know. I don't pay much attention to
23 what firm they're from. I just look at the patient.

24 Q. But when someone's sent to you under the
25 benzene blood monitoring program, how -- how do you --

1 how is that arranged?

2 MR. PERRY: Object to form.

3 A. Well --

4 THE WITNESS: Excuse me.

5 MR. PERRY: Go ahead.

6 A. What happens is I -- I -- I'm not seeing a
7 patient exactly under any specific program. What's
8 happened is that during a monitoring program at that
9 facility, something unusual about the blood counts has
10 been noted, and I'm sent the patient to referee whether
11 that -- what that abnormality is and whether it might be
12 consequent to benzene exposure.

13 Q. (BY MR. WILLIAMS) Okay. And who pays for
14 those services?

15 A. Whoever the company is that sent the patient.

16 Q. So how would one determine what company they
17 came from? How would you know if -- if they came from
18 Shell or Exxon or any -- any company?

19 A. Well, I'm -- I'm sure I was told that at one
20 point in time, but that becomes lost in my memory. In
21 other words, I -- I see the patient, I write a letter to
22 whoever the medical director was that sent me the
23 patient, and then it's out of my consciousness.

24 Q. Okay. And -- and as you sit here today, you
25 don't remember whether or not you saw patients from

1 Shell Oil?

2 A. I can't tell you that with certainty.

3 Q. Okay. What percentage of your work involves
4 litigation, Doctor?

5 A. It's hard to put a figure on that. I -- I
6 would say perhaps 10 to 15 percent.

7 Q. Okay. And how many blood malignancies do you
8 think you've served as an expert in -- in the last five
9 years?

10 A. Well, we could count them up in terms of giving
11 testimony in that testimony sheet. And some of the
12 cases have had to do with malpractice, not, let's say,
13 benzene or other chemical litigation. I can't give you
14 an exact number. We could look at the numbers at least
15 that I've given testimony in.

16 Q. Okay. So would it be fair to say the list you
17 provided, which we can mark as Exhibit 2, with 36 cases
18 on it --

19 A. There are 36 cases. I think probably 10 of
20 those or so are malpractice-type cases.

21 Q. Okay. And of these 36 cases, how many of them
22 involve allegations of benzene?

23 A. I'd have to count them up. Probably -- well --

24 Q. Take a look. I'm sorry.

25 A. -- let's count them up. Let's see.

1 27 of these cases.

2 Q. Okay. And what type of diseases did -- did
3 those cases involve?

4 A. A wide variety of diseases, from chronic
5 lymphocytic leukemia to myelodysplasia to acute myeloid
6 leukemia to non-Hodgkin's lymphoma to multiple myeloma
7 to various forms of myelodysplasia, such as
8 sideroblastic anemia. Those would cover likely most of
9 them.

10 Q. Okay. And --

11 A. Hodgkin's disease -- excuse me -- would be
12 another one.

13 Q. And in those cases, did -- did you work for the
14 defense in every case?

15 A. Yes.

16 Q. Okay. And in those cases, was your -- your
17 opinion that benzene caused any of those diseases that
18 you just mentioned?

19 A. Well, in the cases of acute myeloid leukemia,
20 my testimony in all of those was more likely than not it
21 didn't. We can't prove causation in acute leukemia in
22 any particular case, but we can say what's more likely
23 than not.

24 Q. Have you ever done a -- worked as an expert in
25 a case involving benzene for the plaintiffs?

1 A. No.

2 Q. Okay. Have you ever found that a chemical was
3 the cause of an individual's cancer?

4 A. In a legal issue or --

5 Q. Yes, sir.

6 A. No.

7 Q. Okay. How long have you been doing expert
8 witnessing?

9 A. I don't remember exactly. Probably since
10 around 1992 or '3, I think.

11 Q. And since '92 you have never found an opinion
12 that the plaintiff's cancer or disease was caused by a
13 substance; is that correct?

14 A. That's correct.

15 Q. Okay. Is benzene a known human carcinogen?

16 A. It may cause acute myeloid leukemia, which is
17 considered a cancer, and myelodysplasia, which is
18 arguably a cancer. So, yes, it would be considered a
19 carcinogen.

20 Q. Okay. Can benzene cause ALL?

21 A. Not likely would be the answer.

22 Q. Under any circumstances, could benzene cause
23 ALL leukemia?

24 MR. PERRY: Object to form.

25 MS. YATES: Object to form.

1 A. I don't think that benzene is a accepted cause
2 of -- of adult acute lymphoblastic leukemia.

3 Q. (BY MR. WILLIAMS) What about childhood?

4 A. I don't treat childhood leukemia, but my
5 understanding is that that's not considered an etiology.

6 Q. Okay. What -- can benzene cause CLL leukemia?

7 A. No.

8 Q. NHL?

9 A. No.

10 Q. Myelofibrosis?

11 A. Well, there are anecdotal studies that it
12 allegedly can cause myelofibrosis, and many of the early
13 cases of myelofibrosis are actually forms of acute
14 myeloid leukemia. I would say that we don't have any
15 evidence that can -- it can cause what's referred to as
16 agnogenic myeloid metaplasia by today's standards, but
17 it can certainly cause forms of leukemia that are
18 associated with myelofibrosis.

19 Q. Okay. What about CML leukemia?

20 A. No.

21 Q. Hairy cell leukemia?

22 A. No.

23 Q. Okay. Is benzene classified as a known human
24 carcinogen by IARC?

25 A. Yes. As I said, it can cause acute myeloid

1 leukemia.

2 Q. How about the EPA?

3 A. Yes.

4 Q. How about the NTP?

5 A. I don't know what the NTP is.

6 Q. Na- -- I'm sorry. National Toxicological
7 Program -- Toxicology Program?

8 A. I don't know the answer to that.

9 Q. Okay. What about NIOSH?

10 A. Yes.

11 Q. Okay. How many cases has you worked -- have
12 you worked for an expert for Shell Oil or Shell
13 Chemical?

14 A. I couldn't tell you. The reason being is that
15 many of these cases I've been on have numerous
16 defendants, and -- sometimes as many as a hundred or
17 more, and I don't keep any track of who the defendants
18 are. I just pay attention to the case.

19 Q. Okay. Doctor, how many hours have you put in
20 this case up until completion of your report?

21 A. It's likely on that slip I have there, and we
22 could look at that and see.

23 Q. Okay.

24 A. It's in there somewhere.

25 Q. This one?

1 A. Thank you. Yeah --

2 Q. Okay.

3 A. -- that's it.

4 18 and a half hours total.

5 Q. Have you ever published a study on benzene?

6 A. Yes, sir.

7 Q. Okay. And what were the studies you published?

8 A. Two papers relative to benzene, one in the
9 American Journal of Medical Sciences, and the other one
10 in the American Journal of Hematology.

11 Q. What diseases did those papers involve?

12 A. The -- one was on the general subject of acute
13 myeloid leukemia and benzene. The other was on a -- a
14 specific form of myelodysplasia called sideroblastic
15 anemia.

16 Q. And what were your findings with -- with that?

17 A. Well, it's known that acute myeloid leukemia
18 may be caused by benzene. In the case of sideroblastic
19 anemia, there is no evidence that that specific illness
20 is caused by or is related to benzene exposure.

21 Q. Doctor, do you know the last time that IARC met
22 regarding the benzene monitoring?

23 A. No.

24 Q. Did you review the Agency for Toxic Substance
25 and Disease Registry "Toxicological Profile on Benzene"

1 in this case?

2 A. No.

3 Q. Are you familiar with that publication?

4 A. Not intimately.

5 Q. Do you know if they say anything about multiple
6 myeloma in there or not?

7 A. No, I don't know that.

8 Q. Okay. Do you know how IARC classifies
9 chemicals as a carcinogen?

10 A. Not in detail as they have a alphabetical
11 system and as probable or possible and -- but beyond
12 that, I can't tell you.

13 Q. And that's probably a poor question. I meant
14 the criteria they use, such as what type of studies? Do
15 you -- are you familiar with that?

16 A. I -- I don't know that.

17 Q. Okay. Doctor, did you read the 1977 study
18 published by Dr. Joyner and Dr. Reuel Stallones for
19 Shell Oil in this case?

20 A. Yes.

21 Q. Okay. Let me show you a copy of that. And if
22 you'd turn to the tabbed page, Doctor. And did you
23 happen to notice there were eight cases of myeloma in
24 that study?

25 A. Yes.

1 Q. Okay. And did -- was that significant to you
2 in this case?

3 A. Well, I don't know. In other words, you --
4 the -- the author of the study did not think it
5 significant. In other words, the way this -- this is,
6 I -- I don't have it matched to standard mortality
7 rates, adjusted by age, and so on. So I -- I don't know
8 the significance of this, but the author of the study
9 did not think it was significant.

10 Q. Let me ask you this, Doctor: Did you read
11 Dr. Infante's report in this case?

12 A. Yes.

13 Q. Did you read his calculations for that study?

14 A. I may have seen them. I can't --

15 Q. Okay.

16 A. -- quote anything about them.

17 Q. I believe he -- he calculated a 2.67
18 proportionate mortality ratio. Is that significant to
19 you in -- in relationship with Shell's employees and
20 multiple myeloma?

21 A. It would depend on the -- whether it was
22 statistically significant or not, and -- in other words,
23 it's a relative -- you're saying he's got a relative
24 risk of 2.6. The question is the size of the study,
25 whether it turns out to be significant or

1 nonsignificant, and if it's an accurate rendition of
2 what this study shows.

3 Q. And assuming Dr. Infante's calculations are
4 correct, do -- do -- do you have an opinion one way or
5 the other whether that adds weight to whether or not
6 benzene can cause multiple myeloma?

7 MR. PERRY: Object to form.

8 MS. YATES: Object to form.

9 A. No. I think you're asking me about an
10 epidemiologic conclusion, and I'm a clinical
11 hematologist.

12 Q. (BY MR. WILLIAMS) Okay. So --

13 A. And so I -- I can't comment about it except to
14 say, as I've said, the person who wrote this study
15 wasn't impressed.

16 Q. Okay. So if I understand you correctly,
17 epidemiological conclusions would be out of your area of
18 expertise?

19 MR. PERRY: Object to form.

20 MS. YATES: Object to form.

21 A. I'm not an epidemiologist.

22 Q. (BY MR. WILLIAMS) Okay. Are you saying that
23 you're not qualified to interpret the results of an
24 epidemiological conclusion?

25 MR. PERRY: Object to form.

1 MS. YATES: Object to form.

2 A. Well, I have a conclusion here. The conclusion
3 by the person who did the study was that it was not
4 significant.

5 Q. (BY MR. WILLIAMS) Actually, they didn't
6 calculate the numbers, but I'm -- I'm asking you as --
7 as it pertains to Dr. Infante's conclusions.

8 A. I can't comment about Dr. Infante's conclusions
9 as to whether they're accurate or not. I'm not an
10 epidemiologist.

11 Q. Okay. And, Doctor, do you know whether or not
12 that report there was submitted to OSHA in 1977?

13 A. I don't know that.

14 Q. Okay. Are you familiar with ATSDR's minimum
15 risk levels relating to benzene?

16 A. The part-per-million exposure risks?

17 Q. Yes, sir.

18 A. In general, yes.

19 Q. Okay. What does the "chronic MRL" mean,
20 Doctor?

21 A. I don't know what MRL stands for.

22 Q. I'm sorry. Minimum risk level.

23 A. Oh, I'm sorry.

24 Q. It's -- it's --

25 A. Well, 1 part-per-million is what a person is

1 not supposed to be not exposed to greater than --

2 Q. Okay.

3 A. -- during the working -- working hours.

4 Q. Right. In the ATSDR, minimum risk level for
5 chronic exposure to benzene is 0.003 parts-per-million,
6 and I'm asking you what does that mean to you?

7 MR. PERRY: Object to form.

8 MS. YATES: Object to form.

9 A. It doesn't mean a lot to me.

10 Q. (BY MR. WILLIAMS) A federal agency's numbers
11 don't mean anything to you?

12 MR. PERRY: Object to form.

13 A. Well, I -- I --

14 MS. YATES: Object to form.

15 A. -- I'm not an expert on the setting of those
16 numbers and how they were calculated. In other words, I
17 know what the general requirement is that is not to be
18 exceeded. How those were generated and the mathematics
19 behind them, I don't know.

20 Q. (BY MR. WILLIAMS) And maybe -- maybe I gave
21 you a bad question. My question to you is what's the
22 result if the chronic minimum risk level is exceeded?
23 What's the health effect?

24 A. What's the health risk?

25 MR. PERRY: Object to form.

1 MS. YATES: Object to form.

2 Q. (BY MR. WILLIAMS) Yes.

3 A. Possibly nothing.

4 Q. And?

5 A. Well, it depends on how much it's exceeded.

6 Q. You just don't know one way or the other as it
7 relates to the ATSDR minimum risk level?

8 A. Well, I -- I know that the -- the level that we
9 consider capable of causing hematologic disease is
10 considerably above the minimum risk level.

11 Q. And -- and -- and, again, we're talking about
12 the chronic minimum risk level --

13 A. Chronic exposure.

14 Q. -- for the ATSDR?

15 A. Yes.

16 Q. Right. So disease can occur if someone has
17 been exposed to the chronic number of 0.003
18 parts-per-million?

19 MR. PERRY: Object to form.

20 MS. YATES: Object to form.

21 A. No, that's not what I said. I said that's --
22 that's the minimum level that's been set. You'll have
23 to say what disease are we're talking about. If it's
24 acute myeloid leukemia or myelodysplasia, the levels --
25 the exposure levels are considerably higher than that

1 that can cause those diseases.

2 Q. (BY MR. WILLIAMS) Okay. So if I understand
3 you correctly, one could not contract AML at -- at this
4 rate, at 0 -- 0.003 parts-per-million?

5 A. I don't believe that would be true, yes.

6 Q. Okay. Doctor, do animal studies indicate that
7 benzene can cause damage to the blood and the
8 blood-forming organs?

9 A. Yes.

10 Q. Okay. Are there any laboratory tests or
11 studies that indicate that benzene can cause damage to
12 the blood?

13 MR. PERRY: Object to form.

14 MS. YATES: Object to form.

15 A. Well, I'm not sure what you're referring to. I
16 know that Dr. Irons, for example, has done incubation
17 experiments, incubating human bone marrow cells with
18 benzene metabolites looking for chromosome and other
19 damage. That would be a laboratory study of sorts.

20 Q. (BY MR. WILLIAMS) Of any lymphocyte studies?

21 A. Oh, there are many studies of lympho- -- in- --
22 incubating lymphocytes with various amounts of benzene,
23 yes.

24 Q. And -- and just briefly tell me what the
25 results of some those studies are.

1 A. I can't -- well, benzene kills lymphocytes --

2 Q. Okay.

3 A. -- and it's somewhat dose-related. It's
4 different whether they're B or T lymphocytes.
5 Dr. Martin Smith has done a number of studies with T
6 lymphocytes and benzene metabolites. That's the best I
7 can tell you.

8 Q. Okay. And, Doctor, I don't think I asked you
9 this. Can benzene cause multiple myeloma?

10 A. I don't believe so.

11 Q. Okay. Doctor, next I'm going to direct you --
12 let me stop for a second. You can hand me that back.
13 We'd like to mark that as the next exhibit so she
14 doesn't --

15 MR. PERRY: That's Exhibit 3?

16 MR. WILLIAMS: 3.

17 (Marked Natelson Exhibit Nos. 2 and 3.)

18 Q. (BY MR. WILLIAMS) Okay. It is a training
19 document from Shell from April of 1981. Have you seen
20 this document before, Doctor?

21 A. Yes.

22 MR. PERRY: Wait. I'm -- I'm going to
23 object to form. It's not a training document, so it
24 misstates what it is. It's a report that has its own
25 description.

1 Q. (BY MR. WILLIAMS) Doctor, if you'd turn to the
2 page that's tabbed --

3 MR. PERRY: I'm going to object. That's
4 a -- that's different documents clipped together. It's
5 not the same document. Has consecutive Bates numbers,
6 but that's not one document.

7 MR. WILLIAMS: Okay.

8 MR. PERRY: And I think he ought to be able
9 to look through all of it before you ask him any
10 questions.

11 MR. WILLIAMS: Well, he can look through it
12 all.

13 A. Okay. What -- what is the --

14 Q. (BY MR. WILLIAMS) Doctor, if you'd flip to the
15 page with the tab --

16 MR. PERRY: And I just want to be clear.
17 You're talking about the Envirohealth document.

18 MR. WILLIAMS: Right.

19 MR. PERRY: That's not a Shell document.

20 Q. (BY MR. WILLIAMS) And the page is Bate
21 number -- I can't read it from there, but maybe the
22 doctor can read the Bate number.

23 A. 005393.

24 Q. Okay. Doctor, what does it say on this
25 document here that the chronic health effects of benzene

1 exposure are?

2 A. It says, "Bone marrow damage, Leukemia,
3 Myeloma, Fatty degeneration."

4 Q. Okay. Doctor, what is -- what is -- is myeloma
5 the same thing as multiple myeloma?

6 A. Yes.

7 Q. Okay. Okay. What does it say about the
8 exposure levels in that document?

9 A. It says, "ACGIH TLV 8-hour time-weighted
10 average of 0.1 part-per-million, Confirmed Human
11 Carcinogen, skin notation."

12 Q. And what does that mean to you, Doctor?

13 A. It's a -- it's a exposure level, as I said,
14 that the 8-hour, time-weighted average should be no more
15 than 1 part-per-million, and that's what it says.

16 Q. And if the 1 part-per-million, 8-hour TWA is
17 exceeded, what could occur?

18 MR. PERRY: Object to form.

19 A. Possibly nothing. It depends on how far it's
20 exceeded.

21 Q. (BY MR. WILLIAMS) Okay. Let's talk about why
22 that document states that chronic benzene exposure can
23 cause -- result in myeloma. Have you seen that document
24 before today?

25 A. Actually, I haven't seen it before today, but I

1 have seen it today.

2 Q. Okay. Doctor, those are documents that are
3 produced in this case from Shell Oil, and my question to
4 you is does that change your opinion that their internal
5 documents say that chronic benzene exposure can cause
6 my- -- myeloma?

7 MR. PERRY: Wait just a second. I object
8 because the document you're referring to, the page is
9 Envirohealth, Inc., not Shell, Inc. It was produced by
10 Shell, but it's not a Shell publication. You can ask
11 him what Envirohealth said and he can tell you what this
12 document --

13 MR. WILLIAMS: Right.

14 MR. PERRY: -- says, but the statement that
15 it's a Shell document or memo, internal communication is
16 false and misleading.

17 MR. WILLIAMS: Okay.

18 MR. FARNET: And I do want to also add
19 another objection to the extent that those two documents
20 are stapled together and trying to give the impression
21 that they are, in fact, the same document when they are,
22 in fact, not the same document and when they are, in
23 fact, on the face of them state that they are not from
24 Shell is a misleading suggestion. And I think you
25 should explain that to the witness before you ask any

1 other questions about those documents that you have
2 stapled together inappropriately.

3 Q. (BY MR. WILLIAMS) Okay. Doctor, whether they
4 are stapled together correctly or incorrectly, those
5 documents were produced to my office from Shell Oil,
6 okay? My -- my question to you is is the document --
7 flip back to the page that states, "Myeloma," and we --
8 we've already put the Bates number in the record,
9 Doctor.

10 My question to you is is that of importance
11 to you that a document produced to me by Shell Oil
12 states that chronic benzene exposure can cause myeloma?

13 A. No.

14 Q. And that doesn't change your opinion?

15 A. It's not a scientific document. It's simply an
16 opinion --

17 Q. What --

18 A. -- and I don't know who made that opinion.

19 Q. What type of document is it?

20 A. I don't know. It just -- it's -- it's just
21 some sort of a document perhaps from some kind of a
22 manual. I don't know.

23 Q. When -- when's the first time you saw that,
24 Doctor?

25 A. I think this -- this morning.

1 Q. This morning. And tell me -- tell me what they
2 told you.

3 A. They didn't tell me anything. They just showed
4 me this document. Actually, that's the best I can say.
5 We did -- we did look at this document, among other
6 things, among my references, and that's all there is to
7 it.

8 Q. Do you have any opinion on the document one way
9 or the other?

10 A. No. In other words, the document speaks for
11 itself, but it doesn't say what it is. In other words,
12 this isn't a scientific paper. I don't know what it's
13 from.

14 Q. Okay. All right. Doctor, you can hand that
15 back to me, please.

16 A. (Witness complies.)

17 (Marked Natelson Exhibit No. 4.)

18 Q. (BY MR. WILLIAMS) Doctor, did you review any
19 Material Safety Data Sheets in this case?

20 A. No.

21 Q. Okay. Okay. Doctor, what is general
22 causation?

23 A. Well, general causation would be whether a
24 particular element can cause a particular illness.

25 Q. Okay. And what is specific causation, Doctor?

1 A. That is whether that element caused the
2 specific diagnosis in that person, for example.

3 Q. Did Dr. Infante and Dr. Butler rely on any
4 studies that showed statistically significant results
5 for benzene and multiple myeloma?

6 A. I'm sure they did.

7 Q. Okay. Would you agree with me they relied on
8 more than one?

9 A. Yes.

10 Q. Okay. Would you have a guesstimate of how many
11 you believe they relied on that showed statistically
12 significant results?

13 A. I can't tell you the numbers. I don't know
14 exactly.

15 Q. More than five?

16 A. Possibly.

17 Q. Okay. What does a relative risk greater than
18 2.0 mean to you?

19 A. Well, it means that you're seeing twice as many
20 cases of whatever it is you're studying as what you
21 might see in a matched population.

22 Q. And what does it mean in a scientific context?

23 A. Well, in a scientific context, it -- it -- it
24 may mean nothing because it depends on the size of that
25 population as to whether it's a statistically

1 significant observation.

2 Q. Okay. And when you say the size of the
3 population, why don't you define that for me.

4 A. Well, if I -- if I find -- if I have something
5 where I have one case of multiple myeloma in a group of
6 people and no case in my control, it looks like I've
7 doubled the risk, but that's not statistically
8 significant. It's not enough cases to mean anything.
9 It could have occurred by chance.

10 So, in other words, the risk is just
11 relative to whatever your control population, but the
12 statistics of the matter will tell you whether that
13 could have occurred by chance or is statistically
14 significant.

15 Q. What if you had two cases?

16 A. Again, it depends on the population.

17 Q. Well, let's say if you had two cases of
18 multiple myeloma that were exposed to benzene and you
19 had zero in your control, what would that equate?

20 A. Same thing. It depends on the size of your
21 control group. And, again, you're getting into asking
22 me how an epidemiologist analyzes or a toxicologist
23 analyzes the math of statistical significance. That's
24 not my field.

25 Q. Okay. Do studies that have a 2.0 or greater

1 results provide statistical evidence for you?

2 MR. PERRY: Object to form.

3 A. No, not necessarily.

4 MS. YATES: Object to form.

5 Q. (BY MR. WILLIAMS) Okay. Well, tell me when
6 they would provide statistical evidence.

7 A. If I saw the confidence levels and if they were
8 within the range of statistical significance.

9 Q. Then would that provide statistical evidence
10 for you?

11 A. In that study.

12 Q. Right. In that study.

13 Doctor, are you familiar with the Reference
14 Guide on Toxicology?

15 A. No.

16 Q. Reference Guide on Epidemiology?

17 A. No.

18 Q. Reference Guide on Medical Testimony?

19 A. No.

20 Q. So you wouldn't be familiar with the
21 methodology incorporated in those documents, would you?

22 A. No.

23 Q. Okay. Fair enough.

24 How many statistically significant studies
25 do you need, let -- let's say, with a 2.0 or greater

1 with statistically significant confidence intervals to
2 make an opinion that something is causally related?

3 MR. PERRY: Object to form.

4 MS. YATES: Object to form.

5 A. Well, it would have -- it would depend on how
6 many of those studies relative to how many studies have
7 been done. In other words, if I have 2 studies that say
8 yes and 20 studies that say no, those two studies that
9 say yes are not going to carry much weight. So it
10 really depends on what all of the studies show. You're
11 looking for consistency.

12 Q. (BY MR. WILLIAMS) What are the known causes of
13 multiple myeloma?

14 A. The known causes? There is no known specific
15 cause. We know it's age-related in that older people
16 tend to catch it. We don't really know, aside from rare
17 cases of familial instance -- and those are quite
18 rare -- what causes myeloma.

19 Q. Do you know what caused Mr. Bishop's myeloma?

20 A. No, I don't know what caused his myeloma.

21 Q. And, Doctor, I believe you said this earlier.
22 You're not an epidemiologist?

23 A. Correct.

24 Q. You're not a toxicologist?

25 A. Correct.

1 Q. You're not an industrial hygienist?

2 A. Correct.

3 Q. And you won't be offering opinions in any of
4 those areas at -- at trial?

5 A. No, not as an expert in those fields.

6 Q. And you're not an expert in occupational
7 medicine?

8 A. That's correct.

9 Q. Okay. You're not going to try at trial to
10 offer an opinion that something else caused Mr. Bishop's
11 myeloma at trial; is that correct?

12 A. No. As I've said, I don't know what caused his
13 myeloma.

14 Q. Doctor, do you know if pipefitters were exposed
15 to high levels of benzene in the '70s?

16 MR. PERRY: Object to form.

17 MR. FARNET: Object to the form.

18 MS. YATES: Object to the form.

19 A. I don't know what levels they would be exposed
20 to in the '70s.

21 Q. (BY MR. WILLIAMS) Do you know if they were
22 exposed to levels above 1 part-per-million?

23 MR. PERRY: Object to form.

24 MS. YATES: Object to form.

25 A. Possibly.

1 Q. (BY MR. WILLIAMS) Okay. Prior to the 1977
2 Emergency Benzene Standard, do you know if pipefitters
3 were being exposed to higher levels than 1
4 part-per-million?

5 MR. PERRY: Object to form.

6 MS. YATES: Object to form.

7 A. I don't know that.

8 Q. (BY MR. WILLIAMS) Okay. Would pipefitters --
9 what type of exposure pathways would pipefitters
10 encounter?

11 MR. PERRY: Object to form.

12 MS. YATES: Object to form.

13 A. Well, pipefitters might be using lubricants
14 that contain trace amounts of benzene. Pipefitters
15 might be working with -- with tanks and with materials
16 that have stored benzene-containing compounds.
17 Pipefitters might be associated with fumes or airborne
18 benzene or other compounds.

19 (Mr. Harris exited the deposition room.)

20 Q. (BY MR. WILLIAMS) What about dermal exposure?

21 A. Yes, I would think benzene certainly in the
22 form of -- of solvents would have some dermal exposure.

23 Q. And -- and, Doctor, just so it's clear for the
24 record, when you say "solvents," if a pipefitter is
25 working on a pipe with gasoline or oil in it, are you

1 referring to that as a solvent?

2 MR. PERRY: Object to form.

3 A. Yes, it could be. They do contain trace
4 amounts of benzene -- variable amounts of benzene.

5 Q. (BY MR. WILLIAMS) And a pipefitter working on
6 a pipe could have dermal exposure to oil and gas; is
7 that correct?

8 A. Yes --

9 MR. PERRY: Object to form.

10 A. -- it's possible.

11 Q. (BY MR. WILLIAMS) Doctor, if a chemical is
12 known to cause one blood -- blood malignancy, could it
13 cause another blood malignancy?

14 MR. PERRY: Object to form.

15 MS. YATES: Object to form.

16 A. Potentially, it could, but that -- but it's not
17 a certainty that it would.

18 Q. (BY MR. WILLIAMS) What year do you believe
19 you -- you were of -- you became of the opinion that
20 benzene could cause myelodysplastic syndrome?

21 A. Well, Dr. Aksoy's studies on the Turkish shoe
22 workers in the 1970s -- and he published papers from
23 early '70s up until I think his last one is in 1989 --
24 brought, I think, to the attention of the public that
25 benzene could be leukemogenic.

1 Q. Okay. What about myelodysplastic syndrome?

2 A. Well, myelodysplastic syndrome is sort of
3 interesting because that terminology wasn't available
4 until 1982, and so we had a lot of different illnesses
5 for what we called pre-leukemia. So myelodysplasia is
6 a -- is a relatively new term, and it's a term that's
7 been modified numerous times. So it's gotten to the
8 point where myelodysplasia today doesn't really mean a
9 whole lot differently than it meant before we had the
10 term. It's a group of illnesses, not a single illness.

11 Q. Okay. Doctor, have you ever published a study
12 involving benzene and multiple myeloma?

13 A. No.

14 Q. Have you ever published anything regard- --
15 involving benzene and myeloma?

16 A. No.

17 Q. Okay. Did you read Dr. Infante's references in
18 this case?

19 A. No.

20 Q. Okay. Do you know the percentage of benzene
21 contained in gasoline?

22 MR. FARNET: Object to form.

23 A. I think it's different in different countries.
24 I don't know the current percentage in the United
25 States.

1 Q. (BY MR. WILLIAMS) Okay. What about crude oil?

2 A. I don't know the percentage.

3 Q. What about pyrolysis gasoline?

4 A. I don't know the answer to that.

5 Q. Do you know what pyrolysis gas or oil is?

6 A. No.

7 Q. Ever heard of it?

8 A. I've heard the term --

9 Q. Okay.

10 A. -- yes.

11 Q. Do peak benzene exposures play a role in the
12 development of, let's say, AML leukemia?

13 A. I don't think so.

14 Q. How about any blood disorder?

15 A. Well, if you give somebody an enormous amount
16 of a chemical that can depress the bone marrow, you can
17 certainly produce what we call pancytopenia or lower
18 white cell, red count, and platelet count.

19 Q. Okay. And what levels would you expect
20 pancytopenia to begin to occur? What levels of benzene
21 exposure?

22 A. As peak levels or as chronic levels or what
23 would you like?

24 Q. Well, let's talk about peak first.

25 A. I think it would have to be very high. I'm --

1 I'm not intimately familiar with the numbers. They're
2 available. But it would be a substantial amount to see
3 that.

4 Q. Can you give me a range for a substantial
5 amount?

6 A. I would think you'd have to be exposed abruptly
7 to about 40 part-per-million --

8 Q. Okay.

9 A. -- benzene.

10 Q. And is that the threshold for causing AML?

11 A. Some people believe that. Some people believe
12 much higher.

13 Q. And I'm asking what -- what do you believe?

14 A. I believe it's very high. And in my paper I
15 said that if you're looking for potentially
16 benzene-related leukemia, you're looking for a person
17 who's had greater than 40 part-per-million-years
18 exposure.

19 Q. All right. Would 40 part-per-million-years
20 be -- be the same for myelodysplastic syndrome? Is that
21 your opinion?

22 MR. PERRY: Object to form.

23 MS. YATES: Object to form.

24 A. Depends on the type of myelodysplastic
25 syndrome. Some types of myelodysplastic syndrome are

1 not caused by benzene. Others may be.

2 Q. (BY MR. WILLIAMS) Okay. And -- and what
3 levels would you expect to see -- begin to see
4 myelodysplastic syndrome?

5 A. I would have no reason to think they're
6 different.

7 Q. Okay. And would the same apply for aplastic
8 anemia?

9 A. No. Aplastic anemia is -- is much higher.

10 Q. And what -- what levels would you expect
11 aplastic anemia to occur?

12 A. Well, I -- I would say that when benzene was
13 regulated -- begun to be regulated in Italy, for
14 example, the instances of aplastic anemia disappeared
15 long before the excess of acute leukemia. So it's
16 clearly higher than acute leukemia. And some people
17 believe acute leukemia is at least 200 part-per-year --
18 cumulated part-per-year or higher. I don't know the
19 answer, and I'm sure nobody does. It would be very,
20 very high.

21 Q. Okay. Doctor, do all studies contain flaws or
22 imper- -- imperfections?

23 MR. PERRY: Object to form.

24 A. As a general statement, that might be true.

25 Q. (BY MR. WILLIAMS) Actually, that's not a

1 general statement. That's a statement that you gave in
2 a previous deposition.

3 A. Did I?

4 Q. Yeah.

5 A. Okay.

6 Q. Doctor, did you read -- do you know if -- if
7 the MSDS sheets for the defendants in this case warn
8 that benzene can cause leukemia or blood disorders?

9 MR. PERRY: Object to form.

10 MS. YATES: Object to form.

11 A. No, I don't know that.

12 Q. (BY MR. WILLIAMS) And I believe you said
13 earlier you did not read any Material Safety Data Sheets
14 in this case?

15 A. Correct.

16 Q. Okay. Do you know the symptoms that one would
17 experience when they encounter benzene exposure?

18 A. Well, it depends on the degree of exposure. If
19 it was very high, you could have confusion, but -- or
20 skin rash even, but at low-level exposure, you
21 wouldn't -- you wouldn't necessarily notice anything.

22 Q. Do -- do you know what OSHA says about the
23 symptoms that one would experience at certain levels of
24 benzene exposure?

25 A. Not that I could quote.

1 Q. Okay. What levels would you expect to see
2 dizziness?

3 A. I don't know the answer to that.

4 Q. Headaches?

5 A. Don't know.

6 Q. Okay. And if -- if you saw defatting of the
7 skin, what levels would you expect to see that?

8 A. I don't know that.

9 Q. How would one get defatting of the skin from
10 benzene exposure?

11 A. Well, I -- I guess you'd have to tell me
12 exactly what you mean by "defatting." The fat is
13 usually underneath the dermis. So I'm not quite sure
14 what you mean by that.

15 Q. Well, I'm -- I'm referring to the OSHA
16 regulation on benzene exposure, and I'm asking you what
17 levels would one see skin defatting as they describe in
18 the OSHA Manual?

19 MR. PERRY: Object to form.

20 A. I have no idea.

21 Q. (BY MR. WILLIAMS) Okay. Would you agree with
22 this statement, Doctor: When a 2.0 or greater relative
23 risk occurs at the 95 percent confidence interval
24 without a 1.0, the result -- in the confidence level,
25 the result is statistically significant?

1 A. Yes.

2 Q. What does "dose response" mean, Doctor?

3 A. Well, it means that if a particular dose causes
4 a particular phenomenon and you increase the dose, you
5 might see more of that phenomenon, in other words, a
6 relationship between the dose and the effect.

7 Q. Do any studies that are published show a dose
8 response for benzene in multiple myeloma?

9 A. I'm not aware of that.

10 Q. Let's talk about the Rinsky study of 1987. Are
11 you familiar with that?

12 A. Yes.

13 Q. Do they show any type of dose response in that
14 study?

15 A. Well, that study included patients with
16 myeloma. I think one had worked there three days and
17 maybe another one two weeks, and we know that myeloma is
18 in place years before the diagnosis is made. So
19 counting those cases was a foolish thing to do. And in
20 the current evaluations of those studies, there is no
21 statistically significant increase in myeloma.

22 Q. And -- and, Doctor, you're saying the Rinsky
23 study that -- that was a NIOSH-sponsored study is
24 methodol- -- metholol- -- is flawed?

25 A. It's flawed with -- the original study was

1 flawed by counting cases that couldn't possibly have
2 related to Pliofilm exposure.

3 Q. And explain to me how they couldn't possibly be
4 related.

5 A. Well, we know that if we make a diagnosis of
6 multiple myeloma on someone, that that illness has been
7 placed -- in place for a long, long time. So,
8 therefore, if someone worked in the facility for three
9 days or a week and at that point had a diagnosis of
10 multiple myel- -- myeloma established, the illness began
11 long before they started working there. So it obviously
12 was not related to whatever it was happened during that
13 week.

14 Q. Okay. Doctor, what's the latency period for
15 multiple myeloma?

16 A. Well, actually, there are two recent studies
17 that are published in the current issue of Blood that
18 just came across my desk this morning. And the way
19 these studies operate is they took people who had blood
20 samples sequestered for other reasons for many years,
21 and at some point they had a diagnosis of myeloma
22 established years after these blood samples were
23 sequestered.

24 Then they carefully looked at the blood
25 samples to see when there was an appearance of an

1 abnormal protein, a monoclonal protein, suggestive of
2 myeloma. And they found that that interval at the
3 shortest was 2 to 2.2 years, and the longest was 15
4 years. So multiple myeloma has a very long incubation
5 period, you might say, before we start to see patients
6 who have holes in their bones and anemia. They've had
7 that illness in place a long time before we make that
8 diagnosis.

9 Q. And maybe I asked a bad question, Doctor. As
10 it relates to the literature on benzene and multiple
11 myeloma, what are the latency periods that you're seeing
12 in the peer-reviewed literature?

13 MR. FARNET: Object as to the form.

14 A. Well, there is no known latency period because
15 there's no evidence in the -- in the scientific medical
16 literature that benzene causes multiple myeloma.

17 Q. (BY MR. WILLIAMS) And it is your opinion that
18 none of the studies reference a latency period in them
19 whether you agree with them or not. Is that your
20 opinion?

21 A. Oh, I don't know. You may find a study where
22 someone worked with benzene and 30 years later that
23 got -- got multiple myeloma, but that's anecdotal. And
24 it would have to be a statistically significant study
25 and it would have to be repetitious through many studies

1 to validate that concept.

2 Q. Okay, Doctor. The Rinsky study, were the
3 results for the 1987 Rinsky study -- were they
4 statistically significant?

5 A. At that time, yes, in that study.

6 Q. Okay. And you just don't agree with the
7 results of that study; is that correct?

8 A. Nor does anybody else because it's been
9 supplanted.

10 Q. Okay. The Decoufle, if I'm saying it
11 correctly, study, are you familiar with that? I'm
12 probably mispronouncing her name. Decoufle,
13 D-E-C-O-U-F-L-E.

14 A. Not intimately familiar with that study, no.

15 Q. Okay. The SMR is 870. Was that study
16 statistically significant?

17 MR. FARNET: Object to the form of the
18 question.

19 MR. PERRY: Object to form.

20 MS. YATES: Same objection.

21 A. Well, I have to look at the report to see what
22 she said.

23 Q. (BY MR. WILLIAMS) Sure, Doctor. Do you have
24 these studies in your -- in your --

25 A. No, I have not --

1 Q. Okay.

2 A. -- referenced that study. It may be referenced
3 in one of the references I have. In other words, I've
4 referenced papers that cite a large number of studies
5 that they've reviewed and it may be in those studies,
6 but it's not as -- as a separate paper in my stack.

7 Q. Fair enough.

8 Doctor, did you review the Decoufle study
9 prior to your deposition here today?

10 A. No.

11 Q. Okay. And I'm going to represent to you that
12 the SMR is 870. Do you -- do you know whether or not
13 that study was statistically significant?

14 MR. FARNET: I'm going to object to the
15 form.

16 MR. PERRY: Do you mean the confidence
17 interval? Because that's the determination of
18 statistical significance. Just the SMR itself does not
19 give statistical significance.

20 MR. WILLIAMS: I don't think you need to
21 testify for him, but --

22 MR. FARNET: I'm going to object to the
23 form of the question. Are you making a representation
24 on the record here today that that study found the 870
25 as the --

1 MR. WILLIAMS: I think I made my statement.

2 MR. FARNET: I just want to be sure --

3 MR. WILLIAMS: I'm asking him a question.

4 He --

5 MR. FARNET: Then if -- if you have the
6 study, then why don't you show it to him so he can
7 confirm whether or not the study says what you -- you're
8 saying it says. And I don't know if this study says
9 what you're saying it says. So it's not fair to ask him
10 a question unless you want to show him the study.

11 MR. WILLIAMS: I understand.

12 Q. (BY MR. WILLIAMS) Doctor, did you -- did you
13 read the Decoufle study for purposes of this case?

14 A. No.

15 Q. Okay. What about Ireland? Did you read that
16 study for purposes of this case?

17 A. No.

18 Q. Okay. So do you know whether or not the
19 results were statistically significant in Ireland?

20 A. No.

21 Q. Okay. Doctor, did you read the Collins study,
22 2003, for purposes of this case?

23 A. I've read that study because I have it in my
24 file. I don't think I looked at it in reference to this
25 particular case.

1 Q. Do you know whether or not there were
2 statistically significant results for that study?

3 A. I don't remember, no.

4 Q. Did you read the Constantini study of 2008?

5 A. I have read that study. Again, I didn't --
6 don't have it specifically in the references here.

7 Q. And do you know whether or not there were
8 statistically significant study results in that study?

9 A. I don't recall.

10 Q. Did you read the Sonoda study, 2005?

11 A. No.

12 Q. Do you know if there were statistically
13 significant results in that study?

14 A. No.

15 Q. Did you read Dr. Infante's meta-analysis, 2006?

16 A. Yes.

17 Q. Were the results statistically significant?

18 MR. PERRY: Object to form. Misstates
19 his--

20 A. Well, the way he designed the study, yes.

21 MS. YATES: Same objection.

22 Q. (BY MR. WILLIAMS) Okay. Did you read the
23 Schoenfield study that was published in 1981?

24 A. No.

25 Q. Okay. So you wouldn't know one way or the

1 other whether the results were statistically
2 significant?

3 A. Correct.

4 Q. Did you read the Bisby study, 1992?

5 A. No.

6 MR. FARNET: Objection to form. Is that
7 the Health Watch study?

8 Q. (BY MR. WILLIAMS) The Austra- -- Austra- --

9 A. Oh, excuse me. I -- I'm familiar with the
10 Health Watch study --

11 Q. Okay.

12 A. -- but not under that name.

13 Q. The Australian Institute of Petroleum Health
14 Surveillance Program, Ninth Report, 1992, did you read
15 that study?

16 A. No. I have the more recent study.

17 Q. Thomas, 1982, did you read that study?

18 A. No.

19 Q. So you -- you wouldn't know whether the results
20 were statistically significant?

21 A. Correct.

22 Q. Schnatter, "Retrospective Mortality Study
23 Within Operating Segments of a Petroleum Company," did
24 you read that study?

25 A. No.

1 Q. Okay. Would you know whether the results were
2 statistically significant or not?

3 A. No.

4 Q. Did you read Hunstra, 1991?

5 A. No.

6 Q. Would you know whether those results were
7 statistically significant for multiple myeloma?

8 A. No.

9 Q. Okay. Did you do read Kaplan, 1986?

10 A. No.

11 Q. Would you know whether those results were
12 statistically significant?

13 A. No.

14 Q. What about Dalzell, 1992?

15 A. No.

16 Q. Would you know whether those results were
17 statistically significant?

18 A. No.

19 Q. And what about Kirkland, 2007? Did you --

20 A. I have read that study.

21 Q. Do you know if those results were statistically
22 significant?

23 A. Yes.

24 Q. Okay. So I believe you -- you testified you
25 read a few of the studies that we just went over that --

1 that provided some statistically significant results for
2 benzene and multiple myeloma; is that correct?

3 A. Yes.

4 MR. PERRY: Object to form.

5 MS. YATES: Object to form.

6 Q. (BY MR. WILLIAMS) Go ahead.

7 A. Yes.

8 Q. Okay. Doctor, how do you determine if a
9 chemical is capa- -- caused a disease in an individual?
10 What is your methodology that you use?

11 A. Well, first, one looks at plausibility: Is
12 there -- is there a mechanism for the chemical to cause
13 the illness? And then one looks at patients who've had
14 major exposure to that chemical to see if they have an
15 unusually higher incidence of the illness than people in
16 the general population. And then you look to see if
17 there are studies that demonstrate, as you increase the
18 exposure rate to that chemical, that you increase the
19 incidence of the illness.

20 (Marked Natelson Exhibit No. 5.)

21 Q. (BY MR. WILLIAMS) Okay. Doctor, I'm going to
22 hand you my next exhibit, which is a deposition from
23 June 1st, 2005 of Ethan Natelson, you, in Douglas versus
24 Ashland, Inc.

25 Doctor, do you recall that study -- I mean,

1 that deposition?

2 A. Yes.

3 Q. Okay. Doctor, in that deposition, if you go to
4 the tabbed area, I believe you testified that your
5 methodology that's used was whether or not there's
6 plausibility. Is -- is that still one of your prongs of
7 your methodology -- I mean, your causation analysis?

8 A. You have some tabs here. I'm trying to find
9 out where I said it in here.

10 Q. Take your time. Take your time.

11 A. I see that one.

12 Q. Okay. Is that still -- do you still agree with
13 that --

14 A. Yes.

15 Q. -- part of your analysis?

16 A. Yes.

17 Q. Whether or not the exposure was sufficient --

18 A. Yes.

19 Q. -- is that still part of your analysis?

20 Whether or not there were any confounding
21 factors, is that still part of your analysis?

22 A. Yes.

23 Q. Whether or not there was a family history that
24 might be pertinent, is that still part of your causation
25 analysis?

1 A. Yes.

2 Q. Whether the patient had a proper diagnosis in
3 the first place?

4 A. Yes.

5 Q. And if I understand you correctly, those are
6 the factors you use to determine if a chemical caused a
7 person's disease?

8 A. Not all of the factors. These are factors.

9 Q. That you personally use to evaluate that?

10 A. I use all of these factors, yes.

11 Q. Okay. Fair enough.

12 Doctor, can benzene cause damage to the
13 blood and blood-forming organs?

14 A. Benzene can cause a -- a reduction in blood
15 production, yes.

16 Q. Doctor, were you aware -- let me show them to
17 you before I get held up.

18 Have you seen the requests for admissions
19 in this case that were admitted by Shell Oil?

20 MR. PERRY: Object to form.

21 MR. FARNET: Object to the form.

22 A. If I did, I didn't -- I don't recollect them.

23 Q. (BY MR. WILLIAMS) Okay. Well, I'm going to
24 represent to you that Shell Oil has admitted that
25 benzene can cause damage to the blood and the

1 blood-forming organs. Do you have any reason to
2 disagree with that statement?

3 A. Well, benzene can -- is known to cause acute
4 leukemia. That's a disease of the blood-forming organs.
5 So that's certainly a true statement.

6 Q. Is multiple myeloma a cancer of the blood?

7 A. Well, some people refer to it as a cancer of
8 the bone. It's a cancer of the bone marrow
9 specifically. In a way, it's a cancer of the blood.

10 Q. Okay. Doctor, can you define "biological
11 plausibility" to me -- for me, please?

12 A. Well, it's -- it's a mechanism. In other
13 words, if you have an illness -- you have an illness --
14 let's take something simple -- like iron deficiency
15 anemia and you want to make that diagnosis, it requires
16 the fact to demonstrate that the bone marrow is deprived
17 of iron. In other words, that there's plausibility that
18 this case is due to iron deficiency, you have to
19 demonstrate the iron level is low. That doesn't prove
20 it was -- it was iron deficiency anemia you're dealing
21 with, but it puts you in the ballpark it could be.

22 Q. Okay. I'm going to read you a definition
23 that's stated in the Reference Guide on Epidemiology for
24 biological plausibility, and I want you to tell me
25 whether or not you agree with this statement. "The

1 factor considers existing knowledge about human biology
2 and disease pathology to provide a judgment about the
3 plausibility that an agent causes a disease."

4 Do you agree with that statement?

5 A. Can you read that one over again?

6 Q. Biolo- -- okay. It defines "biological
7 plausibility" as "The factor con- -- considers existing
8 knowledge about human biology and disease pathology to
9 provide a judgment about the plausibility that an agent
10 can cause a disease."

11 A. I -- I don't think I can argue with that
12 statement.

13 Q. Fair enough.

14 MR. PERRY: Do you need to go off the
15 record for the tape?

16 MR. WILLIAMS: Oh. Yeah, I'm sorry. Thank
17 you.

18 MR. PERRY: Let's take a break.

19 MR. WILLIAMS: Let's take a break.

20 THE VIDEOGRAPHER: Don't forget to unclip
21 your mike.

22 MR. WILLIAMS: Oh, yeah. I'm good at that.

23 THE VIDEOGRAPHER: Off the -- off the
24 record. It's 2:40 p.m., end of Videotape No. 1.

25 (Break from 2:40 p.m. to 2:53 p.m.)

1 (Marked Natelson Exhibit Nos. 1A, 1B, 6.)

2 THE VIDEOGRAPHER: We're back on the
3 record. It's 2:53 p.m. This is the beginning of
4 Videotape No. 2.

5 Q. (BY MR. WILLIAMS) Doctor, are you familiar
6 with the exposure estimates in this case for Mr. Bishop?

7 A. I think I mentioned them in my report from --
8 from your expert. I -- I would have to look at the
9 report to remember the exact number. I think it was
10 something like 36 part-per-million-year cumulative dose,
11 in that ballpark.

12 Q. To you, were those exposures significant?

13 MR. PERRY: Object to form.

14 A. Well --

15 MS. YATES: Object to form.

16 A. -- they are -- they are below the exposure
17 level we generally consider for acute leukemia, but
18 they're much higher than -- than many people working in
19 the petrochemical industry.

20 Q. (BY MR. WILLIAMS) Okay. Were Mr. -- was
21 Mr. Bishop exposed to levels above 1 part-per-million?

22 MR. PERRY: Object to form.

23 MS. YATES: Object to form.

24 A. You'd have to say how many years was he
25 working. In other words, if he worked 30 years and had

1 30 part-per-million cumulative exposure, then the answer
2 would be no. I don't remember the actual year number,
3 but it was close to being -- he worked there for a long
4 time. And if he had the same exposures every year, he
5 might actually be within the prescribed range.

6 Q. (BY MR. WILLIAMS) Well, let me ask you this,
7 Doctor: Mr. Bishop worked in -- in the oil refinery
8 from 1973 to 1985. Would that help you in determining
9 whether or not he was exposed to levels above 1
10 part-per-million benzene?

11 A. That would put him --

12 MR. FARNET: Object to the form.

13 MS. YATES: Object to form.

14 MR. PERRY: Object to form.

15 A. Excuse me. That would put him above the
16 exposure levels.

17 Q. (BY MR. WILLIAMS) Okay. Did you read the
18 affidavit of Mr. Frank Parker in this case?

19 A. I don't think that I received that. I don't
20 remember -- recall receiving that.

21 Q. Do you know who Frank Parker is?

22 A. I -- I don't know him personally. I've read
23 other things he's written.

24 Q. What can you tell me about Mr. Parker?

25 A. Nothing, really. I -- I don't recall his

1 background, but I -- he's written other reports about
2 exposures and things.

3 Q. Do you know if he worked for Shell?

4 A. I don't -- don't know that.

5 Q. Fair enough.

6 Doctor, on Page 22 of the deposition in
7 front of you, you previously testified that if a
8 plaintiff used Liquid Wrench that contained benzene,
9 that he was exposed to benzene?

10 MR. PERRY: Object to form.

11 MS. YATES: Object to the form.

12 A. Well, let me see what I said.

13 Again, in the context of when he used it, I
14 believe that prior to 1976 or '7 it contained a fair
15 amount of benzene. And so if a person was spraying
16 Liquid Wrench of that era, he certainly would have the
17 potential to be exposed to benzene.

18 Q. (BY MR. WILLIAMS) And at levels above 1
19 part-per-million?

20 MS. YATES: Object to form.

21 MR. FARNET: Object to the form.

22 A. It depends how many sprays and whether he was
23 indoors, outdoors. There would be a lot of variables
24 there.

25 Q. (BY MR. WILLIAMS) But it was -- it's possible

1 that he would be exposed to more than 1
2 part-per-million?

3 MR. PERRY: Object to form.

4 MS. YATES: Object to form.

5 MR. FARNET: Object to the form. He's
6 answered the question.

7 A. Again, I -- I -- I don't know the answer to
8 that. It would depend on the frequency and what he
9 was -- where he was when he did it.

10 Q. (BY MR. WILLIAMS) What did you mean in that
11 deposition that -- that you stated there?

12 MR. PERRY: Object to form.

13 A. Well, "Based on his testimony and the testimony
14 of his coworkers, would you at least agree with me that
15 he was exposed to benzene while he worked at Hooker
16 Chemical for that ten-year frame?" And I -- and I think
17 we must have been talking about a very early ten-year
18 frame. And I said, "Yes, he had -- certainly, if he
19 sprayed Liquid Wrench, he got exposed to some benzene,
20 but I don't know how much."

21 Q. (BY MR. WILLIAMS) Okay. Doctor, do you
22 remember what the disease that was at issue in this --
23 in that case in front of you was?

24 A. That was a -- that's the Douglas case. That's
25 a multiple myeloma case, I believe.

1 Q. And in that case you opined that benzene does
2 not cause multiple myeloma; is that correct?

3 A. Correct.

4 Q. Okay. And he worked in a oil refinery; is that
5 correct?

6 MR. PERRY: Object to form.

7 A. I've forgotten exactly. I'd have to look at
8 this again to remember where he actually worked.

9 Q. (BY MR. WILLIAMS) Well, I believe you said
10 Hooker Chemical.

11 A. Yeah, Hooker Chemical, so --

12 MR. PERRY: Object to form.

13 MS. YATES: Object to form.

14 MR. PERRY: That would be a chemical plant.

15 Q. (BY MR. WILLIAMS) Okay. He worked in a
16 chemical plant; is that correct?

17 A. Yes.

18 Q. Okay. Thank you.

19 Doctor, were there any confounding factors
20 in the Bishop -- this case that could have caused his
21 disease?

22 A. No. We don't know the cause for multiple
23 myeloma. So, therefore, other illnesses he had wouldn't
24 necessarily be pertinent.

25 Q. And -- and he didn't have a family history of

1 it; is that --

2 A. He had no family history.

3 Q. And there were no viruses that could have
4 caused this disease for Mr. --

5 A. Not that we know of.

6 Q. Smoking is not a cause of multiple myeloma; is
7 that correct?

8 A. Correct.

9 Q. Okay. The next prong of your causation
10 analysis was whether the patient had a prior diagnosis
11 in the first place. In your report you -- you described
12 that the diagnosis of multiple myeloma was easily
13 established; is that correct?

14 A. Yes.

15 Q. Okay. Have we met the criteria from that
16 deposition here in the multi- -- in -- in the Bishop
17 case?

18 MR. PERRY: Object to form.

19 A. Criteria for what?

20 MS. YATES: Object to form.

21 Q. (BY MR. WILLIAMS) Your criteria that you
22 describe in this deposition for a causation analysis.

23 A. For a causation analysis. I -- I testified he
24 didn't have multiple myeloma caused by benzene.

25 Q. Let me -- let me repeat my question.

1 In that June of 2005 deposition, you
2 testified -- you were asked, "How do you determine if a
3 chemical caused a disease?" And you went through your
4 four or five steps of the criteria.

5 A. Yes.

6 Q. And my question to you is have we gone through
7 and met the four or five steps of the criteria that you
8 outlined in your 2005 deposition?

9 MR. PERRY: Object to form.

10 MR. FARNET: Object to the form.

11 MS. YATES: Object to form.

12 A. Yes, but, of course, as we talked earlier and
13 as I think I commented, in terms of general causation,
14 I -- I don't believe that the general causation of
15 benzene being an etiologic factor of myeloma is met in
16 this case.

17 Q. (BY MR. WILLIAMS) Does a negative study prove
18 that a chemical can't cause a disease?

19 A. No.

20 Q. Okay. And why not, Doctor?

21 A. Because of the fact that all of these studies
22 would have certain biases in them. They might be biases
23 in case selection, recall bias, bias from defective
24 death certificates that weren't complete. And that's
25 why you require validation from multiple studies that

1 show you the same result because, if something causes
2 something, it should be -- it should be reproducible
3 from various types of studies.

4 Q. Okay. Doctor, earlier you handed me a stack of
5 studies that you relied on in forming your opinion; is
6 that correct?

7 A. Yes.

8 Q. Okay. We're going to mark these, and the court
9 reporter is going to give them back to you. We're going
10 to mark these as Exhibit No. 7, okay? The whole stack,
11 okay?

12 A. Okay.

13 (Marked Natelson Exhibit No. 7.)

14 (Sotto voce discussion off the record.)

15 MR. WILLIAMS: Do you want me to read all
16 of them in the record?

17 MR. FERNANDEZ: Yeah.

18 MR. WILLIAMS: Okay. Well, let's --

19 MR. FARNET: What number did you put on it?

20 MR. WILLIAMS: 7.

21 I'm going to read you the titles of these
22 articles. "Cancer Statistics," 2006; "Epidemiology of
23 the plasma-cell disorders"; "Multiple Myeloma" by Regis
24 Bataille; "Does Benzene Cause Multiple Myeloma? An
25 Analysis of the Published Case-Control Literature";

1 "Multiple Myeloma: Diagnosis and Treatment"; "Multiple
2 Myeloma" by Kyle; "High-dose therapy intensification
3 compared with continued standard chemotherapy in
4 multiple myeloma patients" by Blade; "Overall and
5 event-free sur- -- survival are not improved by the use
6 of myeloablative therapy following intensified
7 chemotherapy"; "Myeloma in pat- -- in patients younger
8 than age 50 years present more favorable features" by
9 Ludwig; "Familial Multiple Myeloma: A Family Study and
10 Review of the Literature"; "Battling the Hematological
11 Malignancies: The 200 Years' War"; "Occupational
12 exposure and haematological malignancies"; "Multiple
13 myeloma" by Dominik in '07; "Epidemiology and outcomes
14 research for MGUS, myeloma and amyloidosis," if I said
15 that right.

16 "Benzene and Multiple Myeloma: Appraisal
17 of the Scientific Evidence"; Hayes, "Benzene and a
18 Dose-Related Incidence of Hematologic Neoplasms in
19 China"; "Clinical Features of Hematopoietic Malignancies
20 and Related Disorders among Benzene-exposed Workers in
21 China"; "A Critique of the Exposure Assessment in the
22 Study of Benzene-Exposed Workers in China" by Wong; the
23 study by As- -- Aksoy, "Types of Leukemia in Chronic
24 Benzene Poisoning"; "Haematological effects of chronic
25 benzene poisoning"; "Risk of acute AML, multiple

1 myeloma," Wong; "Multiple Myeloma and Benzene Exposure
2 in a Multinational Cohort," Wong; "Risk of Cancer and
3 Exposure to Gasoline Vapors" by Lynge; "Exposures in
4 Painting Trades and Paint Manufacturing Industry" by
5 Brown.

6 I'm just going to read the authors.
7 Bloemen, 2009; Gun, 2006; the -- the Health Watch,
8 November 2007; Lewis, 2006; Otto Wong, "Is There a
9 Causal Relationship Between Exposure to Diesel Exhaust
10 and Multiple Myeloma?"; Sorahan, 2007; Sorahan, 2007;
11 Sathiakumar, '98; Sonoda, 2001; Sielken, 2007; Divine,
12 2001; Divine, '96; Acquavella, 2001; 2007, Wingren;
13 Beall, "Mortality and Cancer Incidence Among Tire
14 Manufacturing Workers Hired in or after '62"; an
15 abstract by Delzell, 2006; Smith, '96; '98, Aul; and
16 this is Pedersen, 2000; 2002, Mauritzson; Dore, 2002;
17 "Toxic Profile For Gasoline, '95; Wong, '09. Let's just
18 see what he's got to say.

19 Boffetta, 2001; Jamall, 2007; Fernberg,
20 2007; Adami, '97; Boffetta, 2008; "Skepticism and
21 Greater Awareness of Epidemiology's Limits --
22 Limitations Could Reduce Impact of False-Positive Cancer
23 Results"; and "Epidemiology Faces Its Limits."

24 Q. (BY MR. WILLIAMS) All right. So those are the
25 studies you relied on, Doctor, in forming your opinions

1 in this case?

2 A. Yes, those are some of them. Those are the
3 ones that I specifically referenced in my report.

4 Q. All right. When you say "some of them," you
5 have other studies, you're saying?

6 A. I have a huge number -- a file of a huge number
7 of studies that are pertinent to multiple myeloma, and
8 it's simply not realistic to cite everything I have in
9 my possession. And so I just cited articles to support
10 the various statements I made in the -- in the letter.

11 Q. And, Doctor, you relied on cohort studies in
12 this stack of studies. Is that cor- -- fair to say?

13 A. There are some cohort studies in there, yes.

14 Q. Are there case control studies in here?

15 A. I'm sure there are, yes.

16 Q. Case reports?

17 A. No case reports, I don't believe.

18 Q. What other types of studies did you include in
19 your --

20 A. These are reviews; internal medicine, oncology,
21 hematology-based reviews.

22 Q. Okay. Do you know -- do you know who funded
23 these studies?

24 A. Well, in some instances, it will tell you on
25 the front cover of the study who funded the study.

1 Q. Did any of the oil companies fund any of these
2 studies?

3 A. I'm quite certain they did.

4 Q. Do you have a clue how many?

5 A. No.

6 Q. Does that have any impact on you one way or
7 another with your opinion, whether or not an oil company
8 funded a study?

9 A. No.

10 Q. Would you give more credibility to a study
11 funded by an oil company?

12 A. More credibility? No more, no less.

13 Q. Okay. All right. Let's go -- that's No. 7.

14 The study I showed you earlier from 1977
15 from -- from Shell, if that study would have been
16 published, would that have changed your opinion of the
17 causal relationship for multiple myeloma and benzene?

18 MR. PERRY: Object to form.

19 A. Well --

20 MS. YATES: Object to form.

21 A. -- it -- it calls into question certain items.
22 Number one, if the study shows statistical significance
23 in the publication and it was accepted by a peer review
24 author and if it was -- has statistical significance,
25 then it would fit on the pile that was in favor of

1 multiple myeloma causing -- of multiple myeloma being
2 caused by benzene.

3 But, as I say, there are a huge number of
4 studies out there. Many of them, some 300 or more,
5 reviewed in the Alexander review, and the vast majority
6 do not favor benzene as causative of multiple myeloma.

7 Q. (BY MR. WILLIAMS) But my question was if that
8 study would have been peer-reviewed with statistically
9 significant results, would that change your opinion in
10 this case?

11 A. No.

12 MR. PERRY: Object to form.

13 A. A single study wouldn't have changed my
14 opinion.

15 Q. (BY MR. WILLIAMS) Okay. If Mr. Bishop had AML
16 leukemia in this case, would you opine that the -- his
17 exposures caused him to develop AML leukemia?

18 MR. PERRY: Object to form.

19 MS. YATES: Object to the form.

20 A. Well, I would require more evidence. For
21 example, if he had AML, I would like to know if he had a
22 chromosome aberration because that's very important in
23 looking at causation. I would like to know that the
24 defense experts agreed with that level of benzene
25 exposure because, from what I've seen in other cases,

1 that's a relatively high exposure estimate for someone
2 in his occupation.

3 Q. (BY MR. WILLIAMS) Okay.

4 A. So it -- it would depend on some other
5 circumstances.

6 Q. Okay. Doctor, are you familiar with the
7 Federal Register?

8 A. Yes.

9 Q. Okay. I'm going to show you a document we're
10 going to mark as No. 8.

11 (Marked Natelson Exhibit No. 8.)

12 Q. (BY MR. WILLIAMS) And it's the Federal
13 Register, Department of Labor, Occupational Sell --
14 Safety and Health Administration, 29 CFR Part 1910,
15 "Occupational Exposure to Benzene, the Final Rule."

16 Are you familiar with -- with that
17 document?

18 A. I've --

19 MR. PERRY: Does it have a date -- could
20 you -- on the front?

21 MR. WILLIAMS: Yes, sir.

22 Q. (BY MR. WILLIAMS) Friday, September 11, 1987,
23 "Rules and Regulations." Are you familiar with this
24 document?

25 A. Not that specific one, no.

1 Q. Okay, Doctor. Feel free to look through each
2 page, and then I'd ask you to turn to Page 34479 for me.

3 MR. FARNET: What page did you say?

4 MR. WILLIAMS: 34479.

5 Q. (BY MR. WILLIAMS) And I want you to read the
6 highlighted section there into the record, Doctor.

7 A. "Epidemiologic studies demonstrate that benzene
8 exposure can cause leukemia, multiple myeloma, and
9 perhaps other hemopoietic and lymphatic cancers."

10 Q. Okay.

11 A. "A-" -- oh, excuse me.

12 Q. I just wanted you to read the highlighted
13 section, Doctor.

14 A. Okay. Okay.

15 Q. My question to you is did you know that OSHA
16 published that statement in the Federal Registry in
17 1987?

18 A. I haven't read this previously, this particular
19 section, no.

20 Q. Okay. So you were unaware that that was OSHA's
21 statement as it relates to multiple myeloma and benzene?

22 MR. PERRY: Object to form.

23 A. As I said --

24 MS. YATES: Same objection.

25 A. -- I haven't read this particular statement,

1 no.

2 Q. (BY MR. WILLIAMS) And as you sit here today,
3 you still disagree with that statement?

4 A. Well, we don't disagree with that in this
5 sense, that epidemiologic studies are both positive and
6 negative. There are positive epidemiologic studies, but
7 there -- but there are far more negative studies.

8 Q. And, Doctor, if you would re-read that
9 statement for me.

10 A. "Epidemiologic studies demonstrate that benzene
11 exposure can cause leukemia, multiple myeloma, and
12 perhaps other hemopoietic and lymphatic cancers."

13 Q. I think the magical word there, Doctor, is
14 "cause." Do you disagree with the statement that
15 epidemiological studies show that benzene can cause
16 multiple myeloma, that OSHA statement there?

17 A. I -- I wouldn't use that terminology. I -- I
18 think that causation requires more than a few
19 epidemiologic studies.

20 Q. Well, it's a yes or no question. Do you agree
21 with the statement that OSHA put in that Federal
22 Register in 1987 that benzene can cause multiple
23 myeloma?

24 A. In 2009, as we sit here, I would say that
25 statement is incorrect.

1 Q. So you disagree with OSHA's statement?

2 A. In 2009, I disagree with this statement.

3 Q. Okay. Okay. Doctor, I'm going to show you a
4 document we're going to mark next as Exhibit 9.

5 (Marked Natelson Exhibit No. 9.)

6 Q. (BY MR. WILLIAMS) And it is a Material Safety
7 Data Sheet from Fisher Scientific. And, no, they are
8 not a defendant in this case, but after you've had a
9 chance to review it, I'd like you to flip to the page
10 where it says, "Chronic."

11 A. Yes.

12 Q. Okay. Can you read the highlighted passage to
13 the jury, Doctor?

14 A. Yes. "Several studies have al-" -- well, let
15 me read the first sentence to put it in context. "Three
16 independent cohort studies have demonstrated an
17 increased incidence of acute nonlymphocytic leukemia in
18 workers exposed to benzene. Several studies have also
19 suggested a link between occupational exposure to
20 multiple myeloma and lymphoma."

21 Q. Okay. Can you tell me why Fisher Scientific
22 has that statement in their Material Safety Data Sheet?

23 MR. PERRY: Object to form.

24 A. No.

25 MR. FARNET: Object to the form.

1 MS. YATES: Same objection.

2 Q. (BY MR. WILLIAMS) Do you know the law under
3 the Ha- -- Hazardous Substance Act as it relates to
4 identifying diseases in Material Safety Data Sheets?

5 MR. PERRY: Object to form.

6 A. No.

7 MS. YATES: Object to the form.

8 Q. (BY MR. WILLIAMS) Do you disagree with this
9 statement in the Fisher Scientific Material Safety Data
10 Sheet?

11 A. No. As we've said, there are epidemiologic
12 studies that have suggested a role, but they're not
13 consistent.

14 Q. Okay. Okay, Doctor. What methodology did you
15 use in this case?

16 A. Well, I used the methodology that a clinical
17 hematologist would use, which is what I am. And I've
18 been engaged in medical education my entire career. And
19 what we -- I am seeking to present to the jury is what
20 the medical community of a clinical hematologist would
21 teach and would be taught about the relationship between
22 benzene and multiple myeloma.

23 And so what I have done is sought out the
24 pertinent, current medical literature to give an idea
25 about what the scientific medical community thinks about

1 the relationship between benzene and multiple myeloma.

2 Q. Would that be the same methodology that you
3 identified in the June 2005 deposition that we just went
4 over?

5 A. You were -- that -- we were talking
6 specifically -- those -- those things would be part of
7 that, yes.

8 Q. Okay. Doctor, is it -- is it appropriate for
9 an expert in this type of case to rely on case control
10 studies?

11 MR. PERRY: Object to form.

12 MS. YATES: Same objection.

13 A. Well, I -- I don't think it's inappropriate.
14 In other words, that would be one thing one could look
15 at, yes.

16 Q. (BY MR. WILLIAMS) Case reports?

17 A. Case reports I would say not for this kind of a
18 situation. Case reports may call attention to a
19 possible relationship, but they don't prove much of
20 anything.

21 Q. Cohort studies?

22 A. Cohort studies are important, yes.

23 Q. Is it fair for an expert to rely on all of
24 those types of sources?

25 MR. PERRY: Object to form.

1 MS. YATES: Object to form.

2 A. An expert can rely on whatever he's comfortable
3 for, if it's in the peer-reviewed scientific literature
4 and is valid.

5 Q. (BY MR. WILLIAMS) Okay. And, Doctor, where do
6 you get your information as to what's acceptable as an
7 expert to rely on certain types of documents? What
8 source do you -- you look at?

9 A. Well, I'm a -- I'm board certified in internal
10 medicine and hematology, and so the specialties that
11 that impacts are -- are internal medicine, hematology,
12 and oncology. And so I review the journals, the -- the
13 preeminent journals in that field. So I read journals
14 such as the New England Journal of Medicine; Blood,
15 which is the official journal of the American Society of
16 Hematology; the Journal of Clinical Oncology, which is
17 the official journal for the oncology society; Lancet,
18 which is sort of the British version of the New England
19 Journal of Medicine; Annals of Internal Medicine, which
20 is another prominent journal. And so I read what the --
21 what the journals have to say about these particular
22 illnesses. That would be one source.

23 Q. Okay. Doctor, I believe you said, "The
24 Lancet." Is that a reputable publication?

25 A. The Lancet? Yes. In other words, it's a --

1 it's a -- it's a respected journal that's been around
2 for many years.

3 Q. How about the Annals of New York?

4 A. The Annals of New York Academy of Sciences,
5 you're talking about?

6 Q. Yes.

7 A. Well, it depends. Some of the articles in
8 there are invited articles. They're not peer-reviewed.
9 All of the journal -- all of the articles in the
10 journals I mentioned would be peer-reviewed. I think
11 that's not always true in the Annals of the New York
12 Academy of Sciences. So it would depend on the article
13 and the circumstances.

14 Q. Is that your understanding, that -- that
15 articles can be entered into a journal without being
16 peer-reviewed?

17 A. Sure. If they -- if the -- if they're an
18 invited article by an editor, the only one who may see
19 that would be the author and the editor.

20 Q. And the editor wouldn't serve a purpose of
21 peer-reviewing something?

22 A. Well, to a certain extent, but the editor might
23 not be working in that field and might not exactly be
24 the person who would be the best peer review person.

25 Q. Do we know who the peer reviewers are when --

1 when studies are proposed to be published?

2 A. Well --

3 MR. PERRY: Object to form.

4 A. -- I can tell you in general terms, having
5 submitted papers. What happens is is that if you submit
6 a paper to a journal like the New England Journal or
7 Blood or Annals of Internal Medicine, the article is
8 sent out to three separate reviewers, and it's also
9 looked at by an in-house committee of reviewers. So a
10 number of people study that manuscript.

11 And usually the manuscript comes back with
12 you from comments from each of the reviewers, asking at
13 times for modifications, or a letter may come back and
14 say, "Thank you for submitting this article, but we're
15 backlogged and you can take it and flush it," in a nice
16 way.

17 Q. (BY MR. WILLIAMS) How many -- how many times
18 have you gotten rejection letters for any articles
19 you've tried to publish?

20 A. I've had a -- an outright rejection once, and
21 I've had a number of times where the letter comes back
22 and says -- and says something to the effect, "Dear,
23 Doctor, our reviewers suggested these and those changes.
24 If you make them, they're suitable for us. We will take
25 your paper." And that usually is translated in that go

1 ahead and make an effort to make some changes and we'll
2 take the paper.

3 So, yeah, I've -- I've had many different
4 things written back about papers I've submitted.

5 Q. Doctor, under any circumstance could benzene
6 cause multiple myeloma?

7 MR. PERRY: Object to form.

8 MS. YATES: Same objection.

9 A. In humans, no. I think the evidence is such
10 that we have no -- no real plausibility. In other
11 words, we don't -- we don't have any evidence that
12 benzene can cause monoclonal proteins. We don't have
13 any evidence that's consistent that benzene, even in
14 studies where people have had massive exposure to it,
15 can come down with multiple myeloma. So I think the
16 evidence is generally consistent that it is not a
17 causative factor.

18 Q. (BY MR. WILLIAMS) And, Doctor, you just said,
19 "humans."

20 A. Humans.

21 Q. Is there -- can benzene under any circumstance
22 cause myeloma in animals?

23 A. I don't know the answer to that. There are
24 myeloma models in -- in animals these days, but they're
25 not produced by giving them benzene.

1 Q. Doctor, on Page 3 of your report, you say,
2 "Benzene and radiation are the only agents conclusively
3 proves -- proven to be carcinogenic to the hematopoietic
4 system"; is that correct?

5 A. How -- let me see what -- what I said.

6 Q. Let me give you a copy of your report. Hold
7 on. If you want to look at my report real quick.

8 MR. PERRY: His report should be in that
9 stack of stuff, too, Eric.

10 MR. WILLIAMS: Yeah, I can't find it.
11 That's the problem.

12 MR. PERRY: I think it's towards the bottom
13 because it was on the top and it was flipped over.

14 MR. WILLIAMS: Oh, we made it 1A.

15 MR. PERRY: Yeah.

16 MR. WILLIAMS: I got it.

17 Q. (BY MR. WILLIAMS) Here, Doctor. Here's
18 your -- here's a copy. If you could give me my notebook
19 back. There you go, Doctor. Switch out. There's
20 your --

21 A. Yeah.

22 Q. -- report right there.

23 Thank you.

24 MR. PERRY: Which page are you on?

25 MR. WILLIAMS: 3.

1 MR. PERRY: Okay. Thank you.

2 A. Yes. We're seeking -- speaking specifically of
3 occupational chemicals because we know, of course, many
4 of our chemotherapy drugs can cause acute leukemia. So
5 I'm talking about occupational exposure here, and --
6 "Benzene and ionizing radiation are the only agents
7 conclusively proven to be carcinogenic to the
8 hematopoietic system." And what I'm saying there is not
9 my statement. I'm saying that as a quote from the
10 scientific medical literature.

11 Q. (BY MR. WILLIAMS) Okay. But do you agree with
12 that statement? I mean, it's in your report. Is it
13 still your --

14 A. It's in my report, and I'm citing it as what's
15 the statement in the literature. And I think if you
16 take the sentence out of context, if I -- if you didn't
17 see what I was talking about here and I just started out
18 and said, "Benzene and radiation are the only agents
19 conclusively proven to be carcinogenic," that would be
20 false because all of our chemotherapy drugs are
21 carcinogenic, but they're not occupational exposure. We
22 give them to people.

23 So what I'm talking about occupational
24 exposures, and -- and I -- and I also would be not
25 talking about cigarette smoke in this -- in this

1 discussion. I'm talking about chemicals that someone
2 might get in a refinery setting, such as benzene,
3 butadiene, acetone, those kinds of chemicals.

4 Benzene and radiation, according to this
5 author -- and I would agree with that -- are the only
6 agents proven to be carcinogenic.

7 Q. Fair enough.

8 In an occupational setting?

9 A. Yes.

10 Q. Yeah, that's what I was asking you.

11 Doctor, are there any animal studies where
12 they have shown a myeloma from benzene exposure?

13 A. I don't know the answer to that, actually.
14 I -- I really don't know the answer to that, but I don't
15 think it's true that there -- one could do that.

16 Q. Are there any cell type of studies that may
17 show benzene caused multiple myeloma in a cell?

18 MR. PERRY: Object to form.

19 A. Not that I'm aware of.

20 Q. (BY MR. WILLIAMS) Okay. Doctor, I want to
21 give you a hypothetical question. If an -- an
22 employee's job was to work to -- for eight hours a day
23 and go into a swimming pool full of benzene for eight
24 hours a day, okay, for 30 years, under those
25 circumstances, could you accept -- and he developed

1 multiple myeloma, could you accept that the benzene
2 caused his multiple myeloma?

3 MR. PERRY: Object to form.

4 A. Well, he'd be probably long dead --

5 MS. YATES: Object to form.

6 A. -- before 30 years were elapsed, and so I
7 wouldn't have to make that distinction. But I don't
8 think we know any dose level of benzene that is capable
9 of causing myeloma and leaving the patient alive in the
10 interim.

11 Q. (BY MR. WILLIAMS) So you do not think a
12 30-year exposure for eight hours a day in a swimming
13 pool full of benzene could cause multiple myeloma under
14 any circumstances?

15 A. No, because the patient would be dead.

16 Q. Okay.

17 A. You wouldn't have -- it's not possible to do
18 that.

19 Q. So benzene would just kill him, is what you're
20 saying?

21 A. Well, you would get enough absorption working
22 in -- in that -- in that environment to give you
23 aplastic anemia, and you'd be dead from it.

24 Q. Be dead.

25 MR. WILLIAMS: Okay, Doctor. I don't have

1 anything at this time. I don't know if Stan has any
2 questions.

3 E X A M I N A T I O N

4 BY MR. PERRY:

5 Q. I have a few follow-up. I'll just kind of
6 start at the top. Could you please state your name.

7 A. Ethan A. Natelson.

8 Q. And are you an M.D.?

9 A. Yes.

10 Q. And are you board certified?

11 A. Yes.

12 Q. And in what subjects are you board certified?

13 A. Internal medicine and hematology.

14 Q. And where do you practice medicine?

15 A. The Methodist Hospital in Houston, Texas.

16 Q. And what does your current practice involve?

17 A. Well, I'm -- I have several hats. I'm director
18 of the -- of the -- what's called the Transitional
19 Internship Program, and I recruit 16 transitional
20 interns who we spend a year training. And I develop the
21 curriculum and do a morning report with them every
22 morning and noon conferences with them and make out
23 their schedule and so on.

24 I also do the same thing for our internal
25 medicine residents. We have 30 internal medicine

1 residents, and I'm one of four key faculty members for
2 that residency program. And we do much the same thing
3 with them.

4 I also am the -- the chairperson for the --
5 what's called the IRB or Medical Research Committee at
6 The Methodist Hospital where we review grant studies
7 and -- and give approval for patient-involved studies
8 that might be with chemicals or medical devices and so
9 on.

10 I'm an associate professor to actually
11 three medical schools, but at med- -- medicals -- at
12 Methodist, it's to the Weill Cornell medical school,
13 which has an affiliation now with Methodist.

14 I have a private practice, and I see
15 patients two days out of the week.

16 Q. The patients you see in your private practice,
17 what area of specialty is that in?

18 A. Strictly hematology.

19 Q. And have you treated patients with multiple
20 myeloma?

21 A. Yes.

22 Q. And for approximately how many years have you
23 treated patients with multiple myeloma?

24 A. Well, I finished my fellowship around 1969 or
25 '70, and I was in the military doing exclusively

1 hematology for about two years. Probably got back
2 around, let's say, 1971 or '2, and ever since that time,
3 I've been seeing patients with multiple myeloma.

4 Q. And in this lawsuit what is the scientific
5 methodology that you employed for your analysis and
6 determinations?

7 MR. WILLIAMS: Objection, asked and
8 answered.

9 MR. PERRY: I didn't ask it. You asked it
10 earlier.

11 MR. WILLIAMS: Right.

12 MR. PERRY: I'm asking it. It's my time.

13 MR. WILLIAMS: I just made my objection.

14 Q. (BY MR. PERRY) What is the scientific
15 methodology that you employed for this lawsuit?

16 A. Well, what I attempt to do in testifying as an
17 expert witness is to testify within my field, which is
18 hematology, as to what the scientific community in its
19 publications, lectures, symposia -- what the scientific
20 community says about a particular issue and what is
21 taught about a particular issue and what we teach our
22 interns and residents about a particular issue.

23 And I may do that by attending conferences,
24 by giving conferences, by listening to conferences, by
25 reading articles, by going on the Medline and -- and

1 when a topic comes up that I don't know about, try to
2 look at what other people think about that, and so on,
3 to get a flavor of what is the prevailing opinion in the
4 peer-reviewed medical literature or, as some people like
5 to call it today, evidence-based medicine. I like to
6 see what the evidence-based medicine is about multiple
7 myeloma.

8 Q. How does your approach as a board certified
9 medical doctor in -- board certified in internal
10 medicine and hematology, how does the approach that you
11 bring differ from the approach that epidemiologists
12 employ?

13 A. Well, it's a -- it's a different approach
14 because, of course, the -- the -- the hematologist has a
15 background of actually seeing the disease evolve in
16 patients and its response to treatment. And when you're
17 seeing patients for many, many years, in a sense I
18 consider that doing an informal epidemiologic study.

19 In other words, if all -- if you're seeing
20 a particular disease, like hairy cell leukemia, and you
21 soon realize that virtually all the patients with it are
22 men, because it's very rare in women. So you don't
23 require an epidemiologic study to tell you that it's a
24 man's disease, and so on. So it gives you a unique
25 perspective on some of these illnesses.

1 At the same time, one looks at it a little
2 differently than the epidemiol- -- epidemiologist in
3 that, whereas I look at and may reference epidemiologic
4 studies, what I'm looking at is not necessarily the
5 an- -- the analysis of one individual study, but looking
6 at what do the -- the people who write in the
7 peer-reviewed literature -- what is the overall analysis
8 of epidemiologic studies.

9 So if I look at an article like the
10 Alexander one where he and his group, from reputable
11 institutions, have looked at 300 and some-odd studies
12 and come to a particular conclusion, I'm interested in
13 that conclusion. And others write articles about that.

14 So I do look at that literature, but I
15 don't analyze it in the same way as an epidemiologist
16 looks at it in terms of was the cohort selected
17 properly, are the statistics perfect, and so on. So
18 we -- we have a little different approach to what the
19 publication is, but we certainly are interested in that
20 literature. Those are some of the things that I would
21 look at.

22 We attend lectures. For example, in the
23 case of myeloma, one of the most prominent authors and
24 researchers in the country on that illness is Dr. Kyle
25 of the Mayo Clinic, and I've listened to him lecture

1 several times. He's been a guest at our Hematology
2 Blood Club. He's published several of these articles as
3 an invited symposium director, and he gives, again, a
4 prevailing opinion that we pay attention to because he's
5 done this all his life.

6 We also look at reviews in other major
7 journals, such as the New England Journal or The Lancet,
8 and that gives us an idea of what the medical community
9 around the world is saying about this particular issue.
10 We put all -- take all of that into consideration.

11 Q. The -- is it fair to say that hundreds of
12 articles have been written about occupational exposures
13 to benzene?

14 A. Yes.

15 Q. And earlier you were asked by plaintiff's
16 counsel about some -- something less than, say, a dozen
17 articles about -- that he referenced. And my question
18 to you, sir, is why did you not consider these articles,
19 the dozen or so that plaintiff's counsel previously
20 mentioned?

21 A. Well, some of these I were -- were fam- -- I
22 was familiar with, having them in my own files, but many
23 of them, the ones that are easily available in the
24 peer-reviewed literature, they're -- they're listed in
25 these -- in these reviews, by Alexander, by Wong, and by

1 others, Bergsagel's article, and so it's not like they
2 haven't been considered because they've been considered
3 in the context of many other articles on the same
4 subject.

5 But I haven't gone, let's say, in some of
6 those back to the original source material to study
7 exactly how that cohort was developed as an
8 epidemiologist might.

9 MR. PERRY: No further questions.

10 MR. WILLIAMS: Anybody else?

11 MR. FARNET: Let's take a break for a
12 second.

13 THE VIDEOGRAPHER: We're off the record.
14 It's 3:34 p.m.

15 (Break from 3:34 p.m. to 3:38 p.m.)

16 THE VIDEOGRAPHER: We're back on the
17 record. It is 3:38 p.m.

18 Q. (BY MR. PERRY) Dr. Natelson, following up on
19 your prior answer, if, for example, you wanted to find
20 out the most accurate and up-to-date assessment of the
21 Pliofilm studies and the determinations in those studies
22 regarding multiple myeloma, would you look at the Rinsky
23 study from 1987?

24 A. No. I would look at the more current version
25 in 2002 because those studies, they're -- they're

1 designed to continue to follow the patients until
2 they -- they don't exist anymore, until they're dead.
3 That's a study of about 1,800 people. And the final
4 report is tallied up when they have all the statistics.

5 Q. And -- and, further, if you wanted to look at
6 the Australian Health Watch study for the most
7 comprehensive and up-to-date assessment on any
8 relationship between benzene and multiple myeloma, would
9 you look at the Ninth Report?

10 A. No. Again, that's a closed study, which was
11 opened in, I think, 1980 and closed in year 2000, and
12 it's -- it's 18,000 people. It's ten times the size of
13 Pliofilm, and it's going to be continued, just like
14 Pliofilm was, until all the patients are dead.

15 And so each subsequent -- each subsequent
16 study gets you closer to the original intent of the
17 study, which was to see what happens to a large cohort
18 of patients.

19 Q. And for this lawsuit did you review and
20 consider the Health Watch, Thirteenth Report, from
21 November 2007?

22 A. Yes.

23 Q. And what was the determination in the Health
24 Watch, Thirteenth Report, November 2007, regarding any
25 alleged association between benzene exposure and

1 multiple myeloma?

2 A. There was no evident association.

3 Q. And as for the Rinsky 2002 update regarding the
4 Pliofilm study, what was the assessment in that study
5 regarding an alleged association between benzene
6 exposure and multiple myeloma?

7 A. There was no statistically significant
8 association.

9 MR. PERRY: Thank you, sir. No further
10 questions.

11 FURTHER EXAMINATION

12 BY MR. WILLIAMS:

13 Q. Doctor, just a few more questions. Doctor, how
14 many patients have you seen -- well, how long have you
15 been practicing as a hematologist in Houston?

16 A. Well, I started seeing hematology patients
17 exclusively in 1969 when I was a fellow. In Houston, it
18 would be when I got out of the service, and I'm guessing
19 that was around '71 or '72. And so I've been doing
20 hematology exclusively here in Houston since 1972.

21 Q. Okay. And, Doctor, what year was the -- what
22 was the first year that you handled any type of --
23 that -- that you saw patients from Shell Oil?

24 MR. PERRY: Object to form, asked and
25 answered.

1 A. I -- I would have no idea.

2 Q. (BY MR. WILLIAMS) Well, was it in the '70s?

3 A. I would have no idea because what would happen
4 in the -- in the 19 -- oh, you're talking about as an
5 expert witness or -- or how are you talking about?

6 Q. As a patient.

7 A. Well, I would have no way of knowing that in
8 this sense, that I would see a patient in the hospital
9 admitted with, let's say, multiple myeloma, and I don't
10 know that I would pay much attention as to whether they
11 worked at Shell or -- or in Galveston or wherever.

12 I mean, I would take a history in terms of
13 what their background was, did they smoke, did they
14 drink, what was their family history, as we normally do,
15 but I don't know that I would even inquire about what
16 particular company name they worked under.

17 Q. Okay. Would it be important to you to have a
18 work history for someone that came in your office
19 with -- diagnosed with multiple myeloma?

20 A. Well, I take that with anybody who I see with a
21 hematologic problem, and whether it's pertinent or not,
22 I take that history, as to whether or not they could
23 have anything that they've done in their lifetime that
24 might influence their blood counts.

25 Q. Okay. Doctor, can multiple myeloma transform

1 into any kind of acute myelogenous leukemia?

2 A. Well, actually, it's not exactly -- I guess the
3 answer would probably be yes in two ways: One is that
4 in some patients with multiple myeloma, they will
5 develop what's caused plasma cell leukemia, where the
6 cells become less differentiated and they circulate in
7 the blood. Normally, there are not very many plasma
8 cells circulating in the blood. And that's referred to
9 as plasma cell leukemia.

10 More commonly, however, we see acute
11 myeloid leukemia in the patients with myeloma that we
12 treat with chemotherapy, and they can develop an acute
13 leukemia, much like any other acute leukemia.

14 Q. Okay. Doctor, earlier I believe you testified
15 that there were approximately 300 studies that dealt
16 with benzene and blood malignancies; is that --

17 A. I don't know the actual number. I know in the
18 Alexander article he references -- and perhaps not all
19 of them are cohort or -- or case control studies, but
20 he's got something like 347 references or so. Some of
21 the other articles have 100 or 200 references. There
22 are a large number of studies out there.

23 Q. Well, Doctor, the reason I'm asking you is is
24 because Dr. Pyett -- I'm sorry -- Dr. Mundt stated that
25 there are 80 peer-reviewed, published epidemiological

1 studies evaluating occupational exposure to benzene and
2 multiple my- -- is there 80? Is there 300? Do you
3 know?

4 A. Well, I --

5 MR. PERRY: Object to form.

6 MR. FARNET: Object to the form.

7 MS. YATES: Object to form.

8 A. -- you know, he's testifying as an
9 epidemiologist. Maybe there are 88 that he thinks
10 are -- are -- should be classified as a occupational
11 study, and some of them are not very good. But there
12 are a lot of articles out there that have comments, and
13 maybe they don't have enough statistics to be classified
14 as an epidemiologic study.

15 Q. (BY MR. WILLIAMS) Right. I guess my question
16 is he said there are 80 peer-reviewed, published studies
17 evaluating occupational benzene exposure as a risk
18 factor for lymphohematopoietic cancers, including
19 multiple myeloma. And he says half talk about multiple
20 myeloma, 40. Would you agree with that statement?

21 MR. FARNET: I object to the form.

22 MS. YATES: Same objection.

23 A. I -- I can't comment about that. In other
24 words, he's -- he selected that number on the basis of
25 his being an epidemiologist and what he classifies as

1 epidemiologic studies. I don't know how he -- how he
2 picked that number. You'd have to ask him.

3 Q. (BY MR. WILLIAMS) But as you sit here today,
4 you don't know whether that number is correct one way or
5 the other?

6 A. No, I don't know that.

7 Q. Fair enough. Let me take that back.

8 (Sotto voce discussion off the record.)

9 Q. (BY MR. WILLIAMS) Doctor, can you give me a
10 approximate number of how many patients that you've seen
11 for Shell as a -- as a hematologist?

12 A. I would have no idea.

13 MR. PERRY: Object to form.

14 MR. FARNET: Object to form.

15 MS. YATES: Object to form.

16 MR. PERRY: He says he doesn't know. He
17 doesn't work for Shell.

18 Q. (BY MR. WILLIAMS) You don't know?

19 A. I really don't know.

20 Q. Do you know that you have or haven't seen
21 patients from Shell?

22 A. I can't tell you that. I don't -- I don't pay
23 any attention to -- to the name of the company that they
24 work from. In other words, when I see a patient, I'm
25 generally told by our insurance people what the

1 insurance is, do we take that insurance, and what the
2 illness is. And then I work the patient up for that
3 illness, and I -- and in some instances, if it's a
4 company patient, I -- I may write a letter back to the
5 company physician. That's not a common event for me. I
6 usually write it back to the referring physician, who is
7 usually an internist -- another internist in town, but
8 I -- I -- I cannot tell you how many patients I've seen
9 specifically for Shell.

10 Q. Well, have you met with the medical director
11 for Shell on any occasion?

12 A. No.

13 Q. Okay. Do you see Workers' Compensation
14 patients?

15 A. Very, very rarely.

16 Q. Okay. And what -- what type of disorders would
17 you see those patients for?

18 A. Oh, usually injuries that might have a bleeding
19 problem associated with them, an issue where they were
20 injured and took anticoagulants and/or got clotting
21 complications, pulmonary thromboemboli, things of that
22 nature. That would be, I think, the sum and substance
23 of it. It's not a common event for me to see Workers'
24 Compensation patients.

25 Q. Have you ever seen a patient for -- for a

1 Workers' Compensation claim for a blood disorder?

2 A. I don't know the answer to that. I at one time
3 reviewed a case with an attorney in Houston named John
4 Shoe- -- Shoebbotham, which was -- which was a case that
5 came under the rubric of that, but it was a question of
6 whether or not he had acute leukemia. It wasn't a
7 question of not -- whether it was occupationally
8 related. It had to do with what the disease was. It's
9 been a long time ago.

10 Q. And, Doctor, one final question. How many
11 cases have you served as an expert that involved
12 multiple myeloma and benzene?

13 A. I -- I can't tell you with any accuracy, but I
14 would suspect it's been certainly well less than ten
15 that I've ever given any testimony on. I -- I don't
16 know how many I might have seen, but I would just pick
17 as a guesstimate no more than ten.

18 Q. Okay. And what about cases that you didn't
19 give testimony in?

20 A. Well, I would count -- I would -- in putting
21 that together, in other words, I think I probably have
22 seen at least about ten patients with multiple myeloma.
23 Some of them have come to deposition, and most have not.

24 Q. When you say you've seen patients, what do
25 you mean?

1 A. I've seen the charts, the records on patients
2 with multiple myeloma.

3 Q. And are you saying served as an expert --

4 A. Yes.

5 Q. -- in -- in that -- for about ten cases?

6 A. Yeah.

7 Q. Fair enough.

8 MR. WILLIAMS: No further questions.

9 MR. PERRY: No further questions.

10 THE VIDEOGRAPHER: Off the record. It's
11 3:49 p.m. It's the conclusion of the deposition.

12 (The deposition concluded at 3:49 p.m.)
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WITNESS NAME:	DATE OF DEPOSITION
ETHAN A. NATELSON, M.D.	JUNE 5, 2009

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

I, ETHAN A. NATELSON, M.D., have read the foregoing deposition and hereby affix my signature that same is true and correct, except as noted on the previous page(s), and that I am signing this before a Notary Public.

ETHAN A. NATELSON, M.D.

STATE OF T E X A S)

COUNTY OF _____)

BEFORE ME, _____, on this day personally appeared ETHAN A. NATELSON, M.D., known to me or proved to me under oath or through _____ (description of identity card or other document) to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

Given under my hand and seal of office on this _____ day of _____, 2009.

NOTARY PUBLIC IN AND FOR
THE STATE OF TEXAS

My Commission Expires: _____

STATE OF TEXAS)
COUNTY OF HARRIS)

REPORTER'S CERTIFICATION

I, Patricia L. Fairley, Certified Shorthand Reporter in and for the State of Texas, hereby certify that this transcript is a true record of the testimony given.

I further certify that I am neither attorney nor counsel for, related to, nor employed by any of the parties to the action in which this testimony was taken. Further, I am not a relative or employee of any attorney of record in this cause, nor do I have a financial interest in the action.

That the amount of time used by each party at the deposition is as follows:

Mr. Eric Williams - 1 hour, 42 minutes
Mr. Richard J. Fernandez - N/A
Mr. Stan Perry - 9 minutes
Mr. Glenn M. Farnet - N/A
Ms. Stacy K. Yates - N/A
Mr. Christopher T. Chocheles - N/A

Subscribed and sworn to on this, the 8th day of June, 2009.

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STATE OF TEXAS)
COUNTY OF HARRIS)

REPORTER'S SUPPLEMENTAL CERTIFICATE

I hereby certify that the witness was notified on _____ that the witness has 30 days (_____ days per agreement of counsel) after being notified by the officer that the transcript is available for review by the witness and if there are changes in form or substance to be made, then the witness will sign a statement reciting such changes and the reasons given by the witness for making them;

That the witness' Changes and Signature page was/was not returned as of _____.

Subscribed and sworn to on this the _____ day of _____, _____.

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