

IN THE SUPERIOR COURT
OF THE STATE OF DELAWARE
IN AND FOR NEW CASTLE COUNTY

-----X
MONSANTO COMPANY,
Plaintiff,
v.
AETNA CASUALTY & SURETY COMPANY,
et al.,
Defendants.
-----X

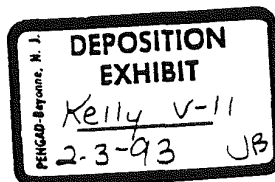
Civil Action Number
38C-JA-113-1-CV
NON-ARBITRATION
CASE

DEPOSITION OF R. EMMET KELLY (VOLUME 2)

Wilmington, Delaware

Thursday, January 28, 1993

Deposition of R. EMMET KELLY, called for further examination pursuant to agreement by counsel, at the law offices of Duane, Morris and Heckscher, 1201 Market Street, Fifteenth Floor, at 9:32 a.m. before JULIE BAKER, Court Reporter, when were present on behalf of the respective parties:



-- continued --

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WATER_PCB-SD0000062870

C O N T E N T SWITNESSEXAMINATION

R. Emmet Kelly (Resumed)

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by Mr. McConnell	390

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P R O C E E D I N G S

Whereupon,

R. EMMET KELLY

resumed the stand and, having been previously duly sworn,
was examined and testified further as follows:

EXAMINATION (Continued)

BY MR. MC CONNELL:

Q Good morning, Dr. Kelly.

A Good morning, sir.

Q Dr. Kelly, do you remember some time ago you
were contacted by an investigator from Clarence Kelley
Investigation Services?

A Yes, I remember it.

Q Did he contact you in person or call you on the
telephone?

A Telephone.

Q Do you remember his name?

A Clarence Kelley. I remember it because I
thought he was associated with the FBI.

Q Did Clarence Kelley call you, or was it an
investigator working in Clarence Kelley's investigation
office?

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1 A I can't answer that. I don't recall.

2 Q You don't recall. Do you remember when this
3 telephone call occurred?

4 A No, sir, I don't.

5 Q Do you remember the year?

6 A No, sir.

7 Q When he called, did he tell you that he was an
8 investigator with the Clarence Kelley investigation firm?

9 A I can't answer that. I mean, I don't know. I
10 don't recall how he introduced himself, but I just
11 remember that Clarence Kelley because I think that
12 Clarence Kelley was in charge of the FBI about six months
13 before, and I really didn't know if it was the same fellow
14 or not or what his association with any investigative
15 group was, except that it was with the FBI.

16 Q In the course of the telephone call, though, he
17 told you that he was with the Clarence Kelley
18 investigation firm?

19 A I don't know if he told me if he was with it or
20 he wasn't.

21 Q It was either Clarence Kelley or one of his
22 investigative staff?

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1 A That's right.

2 Q And he told you he was an investigator?

3 A That's correct.

4 Q He was candid and forthright about that?

5 A Yes.

6 Q Do you know where the Clarence Kelley firm is

7 located, sir?

8 A No, sir. I thought it was Kansas City.

9 Q It is.

10 A Is it?

11 Q And Clarence Kelley is the former director of

12 the Federal Bureau of Investigation?

13 A That was my impression.

14 Q And you knew that even before this gentleman

15 called?

16 A Yes, sir. He was in the newspapers quite a bit,

17 I believe, around that time.

18 Q Did you ask any questions of the investigator

19 when he called you, sir?

20 A What did he want and what are you asking me

21 about? What do you want to do with me?

22 Q Did he answer those questions?

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1 A Yes. I don't exactly know what he said, how he
2 identified himself, but my relationship what was not
3 bothering him, but what he was interested.

4 Q Was he candid and forthright about telling you
5 that?

6 A Yes, as far as I know.

7 Q Can you remember any other things that you asked
8 the investigator about?

9 A I think I asked him, well, who do you
10 represent? Are you investigating me for Monsanto or for
11 somebody else? And then when he said somebody else, I
12 said well, here's the lawyer you talk to.

13 Q So he told you he wasn't working for Monsanto?

14 A That's correct.

15 Q And do you remember anything else he told you?

16 A No, sir.

17 Q Do you remember whether you asked him whether
18 this was the same Clarence Kelley who was the former
19 director of the FBI?

20 A I don't know whether I asked him that or not.

21 Q Do you remember that he told you anything about
22 that?

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1 A I don't recall.

2 Q And he told you he wasn't working for Monsanto;
3 right?

4 A To the best of my recollection; that's correct.

5 Q Did he tell you that his client was an insurance
6 company?

7 A I do not remember anything about any association
8 that he had with anybody outside of Monsanto. He wasn't
9 representing Monsanto, and I don't know if he identified
10 who his client was.

11 Q Did you tell the investigator that you wanted to
12 call the Monsanto law department?

13 A I told him -- yes, I told him I would call or he
14 should call them.

15 Q What was his response?

16 A Okay.

17 Q He didn't object to that, did he?

18 A No, I don't think so. There wasn't any hassle
19 about it.

20 Q Can you remember anything else you said during
21 that call, Dr. Kelly?

22 A Anything else that what?

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1 Q Can you remember anything else that you said
2 during that call?

3 A No. It wasn't a very prolonged conversation.
4 It didn't strike me as a very important telephone call.

5 Q Do you remember how long the call was?

6 A Less than five minutes.

7 Q Can you remember anything else at all that the
8 investigator said during that call?

9 A No, sir, I don't.

10 Q Did you give the investigator any information at
11 all about Monsanto?

12 A No, sir.

13 Q Or about any of Monsanto's chemicals?

14 A No, sir.

15 Q Or about any of Monsanto's plants?

16 A No, sir.

17 Q Or about any of Monsanto's operations?

18 A No, sir.

19 Q You didn't give him any information whatsoever
20 about Monsanto?

21 A That's correct.

22 Q And you understood that the person calling you

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WATER_PCB-SD0000062877

1 was an investigator?

2 A Yes, but I didn't exactly know what the function
3 of -- what he was going to investigate.

4 Q You understood that you could choose to talk
5 with him or not?

6 A Oh, certainly. If there was a voice on the
7 telephone, I could always hang up.

8 Q And you chose not to talk with him at that
9 point; is that right, sir?

10 A That's correct.

11 Q Did you call the Monsanto law department about
12 this, Dr. Kelly?

13 A Yes, I did.

14 Q And who did you talk to there?

15 A Either Tom Bistline or Dave Snively.

16 Q Was that immediately after the call that you got
17 from the investigator?

18 A I think it was on the same day, but I don't know
19 if he hung up, and I called him immediately.

20 Q Did you later talk again on the phone with the
21 investigator?

22 A I don't remember talking with him at any time

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1 more than once.

2 Q Did you offer to talk with the investigator if
3 he paid you your normal hourly rate for consulting?

4 A No, I would want to know what he wanted to talk
5 about, whether or not there was any conflict of interest,
6 and after all, I'm not even sure if I had been apprised of
7 the fact of this case at that time. The question of
8 payment never entered into it.

9 Q You do some consulting work, don't you,
10 Dr. Kelly?

11 A That's correct.

12 Q And you have a normal hourly rate for that work?

13 A That's correct.

14 Q And it's \$200 an hour?

15 A That's correct.

16 Q You don't recall offering to talk with the
17 investigator if you were paid your normal hourly rate?

18 A I beg your pardon?

19 Q Do you recall offering to talk with the
20 investigator if you were paid your normal hourly rate?

21 A I'm sure I didn't. I mean, I did not talk to
22 him about discussing the case at all until after I talked

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1 to one of the Monsanto lawyers. So I must have known
2 about the case because when I told him to call Bistline or
3 Snively, they must have apprised me of this case and that
4 I may be called as a witness in this case.

5 Q So you already knew about this case when the
6 investigator called?

7 A I must have because I knew who to refer him to.

8 Q To the best of your recollection, Dr. Kelly, did
9 you ever speak with the investigator again?

10 A No, sir, I do not remember speaking with him
11 more than once.

12 Q At any time, did you ever provide any
13 information about Monsanto to the investigator?

14 A No, sir, I never did.

15 MR. MC CONNELL: Dr. Kelly, let me show you a
16 document which we will mark as Kelly Exhibit 27.

17 (Kelly Exhibit 27 identified.)

18 BY MR. MC CONNELL:

19 Q Do you recognize this, Dr. Kelly, as an
20 affidavit that you provided on or about May 24, 1990?

21 A Yes, sir.

22 Q And is that your signature on the second page?

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WATER_PCB-SD0000062880

1 A Yes, it is.

2 Q Do you recall who you provided this affidavit
3 to?

4 A No, I don't.

5 Q Did you work with the Monsanto attorneys on this
6 affidavit, sir?

7 A I didn't draw this up by myself, so I must have,
8 but I don't know which attorney I worked with.

9 Q Could it have been Mr. Snively?

10 A It could have been Snively. It could have been
11 Bistline.

12 Q Do you believe it was one of those two?

13 A I think so.

14 Q Let me direct your attention, Dr. Kelly, to
15 paragraph 5 of the affidavit. You say in paragraph 5
16 asked on whose behalf the caller was working. I was
17 informed by the caller that he did not work on Monsanto
18 Company's behalf and that his client was an insurance
19 company.

20 You told me earlier he told you he did not work
21 for Monsanto; that's right, isn't it?

22 A That what?

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1 Q That he did not work for Monsanto?

2 A That's right.

3 Q And is it also correct that he told you his
4 client was an insurance company?

5 A Well, presumably this was six months after he
6 called, and I'm sure my memory was better then, and I
7 would say this is more correct in my recollection today
8 than my earlier testimony.

9 Q And you believe that the information in your
10 affidavit is correct?

11 A Yes, sir.

12 Q So you agree that the investigator did tell you
13 that his client was an insurance company?

14 A Will you repeat that.

15 Q You agree that the investigator did tell you in
16 the call that his client was an insurance company?

17 A Yes.

18 Discussion off the record.

19 BY MR. MC CONNELL:

20 Q Dr. Kelly, did you ever participate in
21 negotiating insurance contracts for Monsanto?

22 A Did I ever --

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WATER_PCB-SD0000062882

1 Q Did you ever participate in negotiating
2 insurance contracts for Monsanto?

3 A No, sir, I did not.

4 Q That was the responsibility of the insurance
5 department?

6 A That's correct.

7 Q Who was the head of Monsanto's insurance
8 department during the time you were actively employed at
9 Monsanto?

10 A Towards the end of my career with Monsanto, it
11 was Bob Chapman. Prior to that -- I don't know if he
12 would be called the head -- there was a George Wingard,
13 W-i-n-g-a-r-d. I thought Chapman reported to Wingard, but
14 I'm not 100 percent sure of that. There were other people
15 at various times, but I don't recall their names.

16 Q Did you ever have any role at all in obtaining
17 insurance coverage for Monsanto?

18 A No, sir.

19 Q Did you ever meet with Travelers or any
20 Travelers people in connection with obtaining insurance
21 coverage?

22 A No, sir. The only time I ever met with

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1 Travelers was when they came on board in 1970 or 1971, but
2 it was an accomplished fact at that time. They were our
3 insurer. They followed Liberty Mutual.

4 Q Did you meet with them just one time or more
5 than that?

6 A I know definitely one time, and I have some
7 vague recollection of a second meeting.

8 Q Let's talk about the one you definitely
9 remember. When did that meeting take place, sir?

10 A I think in 1971.

11 Q Where did it take place?

12 A At Monsanto offices.

13 Q Who was at the meeting?

14 A Chapman. I don't know who was there from
15 Travelers. And there was somebody from Marsh & McLennan.

16 Q Do you remember his name?

17 A No, I don't.

18 Q You can't remember the names of any of the
19 Travelers people who were there?

20 A No, sir.

21 Q Do you know if there was one Travelers person or
22 more than one?

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1 A More than one. I don't know how many.

2 Q What was the purpose of the meeting?

3 A Frankly, I never -- I thought it was just to
4 introduce us to the Travelers people.

5 Q Was there any discussion about the scope of
6 insurance coverage?

7 A I don't remember any such discussion.

8 Q Was there any discussion about the terms or
9 conditions of the insurance contract?

10 A I can't remember. I didn't pay much attention
11 to it because it wasn't any of my problem.

12 Q If there was any discussion about that, you
13 can't remember it now?

14 A That's correct.

15 Q Do you remember anything at all substantively
16 that was discussed at that meeting?

17 A No, sir. I don't remember anything much about
18 it at all.

19 Q Do you remember how long the meeting lasted?

20 A Half a morning. I think it was less than two
21 hours, I believe.

22 Q Do you remember talking about any engineering

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1 services during that meeting?

2 A No, sir, I don't remember.

3 Q As we sit here today, you can't remember really
4 anything at all about the substance of that meeting?

5 A That's correct.

6 Q Now, you said you had a vague recollection of
7 maybe another meeting. Can you tell me anything at all
8 about whether that meeting took place?

9 A Whether it took place?

10 Q Yes, sir.

11 A Oh, I believe it did, but I'm not scientifically
12 certain of it. I believe it had something to do with --
13 well, I'd just be assuming things. I don't know the
14 entire of that -- my recollection is that it was something
15 to do with Travelers and some of our industrial hygiene
16 people visiting some of our manufacturing sites.

17 Q Do you remember anybody else from Monsanto who
18 would have been at that meeting?

19 A Wheeler would have been there.

20 Q Mr. Wheeler in the medical department?

21 A Yes.

22 Q Anybody else from Monsanto?

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1 A I don't remember if Chapman was ever there or
2 not.

3 Q Anybody else?

4 A No, sir. I don't remember any other names.

5 Q Do you remember who was there from Travelers?

6 A No, sir.

7 Q Do you remember whether there was one or more
8 than one?

9 A No, sir.

10 Q Anybody from Marsh Mc?

11 A I don't think so. I don't recall. I certainly
12 don't recall any name from Marsh Mc.

13 Q Do you remember anything at all about the
14 discussion at that meeting, sir?

15 A I think it was just a preliminary discussion,
16 preparatory to visiting some of the plants to see what
17 manufacturing -- not problems -- what manufacturing
18 departments were -- what they were doing in the plants.

19 Q Do you remember anything that the Monsanto
20 people said at that meeting, Dr. Kelly?

21 A Well, I think they said if you want to go
22 around, we'd be happy to go around with you.

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1 Q Do you remember anything at all that the
2 Travelers people said?

3 A Well, no, I don't. I mean, with the exception
4 that I believe they said well, yeah, let's get together
5 and figure out when we're going to go around and see these
6 places.

7 Q And that's all you can remember about that
8 meeting?

9 A That's it.

10 Q Did you ever on any other occasion meet with any
11 Travelers people for any purpose?

12 A I may have, but I don't recall.

13 Q Did you ever talk with any Travelers people on
14 the phone at any time?

15 A I don't recall whether I did or not.

16 Q Can you remember any other dealings at all with
17 the Travelers people?

18 A No, sir.

19 Q Did you ever go on any visits to the Monsanto
20 plants with the Travelers people?

21 A No, sir.

22 Q Did you ever meet with any of the Travelers

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1 engineers for any purpose?

2 A No, sir.

3 Q Any phone contacts with them?

4 A I beg your pardon?

5 Q Did you have any phone contacts with any

6 Travelers engineers?

7 A I don't remember any.

8 Q Any correspondence?

9 A There may be. I don't remember it.

10 Q You don't remember it now?

11 A No, I don't.

12 Q Did you have anything at all to do, Dr. Kelly,

13 with putting together engineering service instructions for

14 the Travelers engineers?

15 A What was -- would you repeat that.

16 Q Yes, sir. Did you have anything at all to do

17 with any engineering service instructions for the

18 Travelers engineers?

19 A No, sir.

20 Q Do you know what that term means?

21 A Well, outside of the English, I don't know what

22 Travelers called it or what Monsanto included under that

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1 particular term, but I didn't have anything to do with it
2 no matter what it was.

3 MR. MC CONNELL: Could you read back the last
4 part of his answer on this.

5 The reporter read the record as requested.

6 MR. MC CONNELL: Dr. Kelly, let me show you a
7 document which we will mark as Kelly Exhibit 08.

8 Kelly Exhibit 08 identified.

9 BY MR. MC CONNELL:

10 Q Dr. Kelly, this is a copy of the engineering
11 service instructions we've been talking about, and I know
12 you've told me that you didn't have anything to do with
13 these, and I just want to confirm that you haven't dealt
14 with these before. Do you have any recollection of these
15 engineering service instructions, Dr. Kelly?

16 A No, sir, I do not.

17 Q Dr. Kelly, let me ask you to turn to the second
18 page of this exhibit at the upper right-hand corner. The
19 instructions are dated March 1970. Do you see that, sir?

20 A Yes, I do.

21 Q And let me ask you to turn briefly to the third
22 page, at the very top, paragraph 2. The instructions say

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1 "do not develop pollution information at locations. It
2 will be obtained from Monsanto corporate headquarters, and
3 evaluated by the chemical unit, home office."

4 Do you recall, Dr. Kelly, that the Travelers
5 engineers were instructed not to develop any pollution
6 information at the Monsanto locations?

7 A That they were --

8 Q Do you recall that the Travelers engineers were
9 instructed not to develop any pollution information at the
10 Travelers locations?

11 A Instructed by whom?

12 Q By Monsanto and Travelers.

13 A No, sir. I didn't know anything about it.

14 Q So that was not one of the topics that was
15 discussed in the meeting that you referred to earlier?

16 A No, sir.

17 Q Would this have been handled by someone else at
18 Monsanto other than you?

19 A Yes, sir. It certainly wasn't by me.

20 Q Dr. Kelly, let's go back to talking about the
21 styrene process at the Texas City plant. What is styrene
22 tar, Dr. Kelly?

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1 A Styrene tar is a chemical mixture that remains
2 in the bottom of distill columns after the conversion of
3 ethylbenzene to styrene.

4 Q What's in that chemical mixture, Dr. Kelly?

5 A I don't know. I mean, I think it's pretty well
6 ill-defined. It's sort of like a soup down there.

7 Q It would contain a wide variety of hydrocarbons?

8 A That's correct.

9 Q Hydrocarbons that are derived from oil?

10 A Yes, sir.

11 Q And do you recall, Dr. Kelly, some of the things
12 that would have been contained in that mixture?

13 A Sure. Probably some residual catalysts.
14 Probably some residual benzene. Probably some residual
15 ethylbenzene.

16 Q Sulfur?

17 A If there were sulfur in the oil stream, yes.

18 Q Anything else you can remember?

19 A No, sir.

20 Q There would be some toxicity concerns about the
21 catalyst, residual catalyst?

22 A There's probably some spent catalyst in there.

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1 yes.

2 Q And there would be toxicity concerns about the
3 benzene?

4 A Well, not particularly. We did have acute
5 toxicity testing of the material and we knew enough about
6 it, how to handle it safely. So there was some concern,
7 but it wasn't looked upon as a major toxic element.

8 Q What about the ethylbenzene, sir?

9 A What about it?

10 Q Was there a toxicity concern about ethylbenzene?

11 A It's not a terribly toxic compound.

12 Q But it is toxic?

13 A I beg your pardon?

14 Q It is toxic?

15 A Well, again, it depends: whose definition are
16 you using? It's not as toxic as benzene.

17 Q Benzene is very toxic?

18 A It's toxic. Again, I have to go back to say do
19 you consider the toxicity in relationship to the
20 exposure? If you use benzene in shoe polish, do you
21 consider that a toxic situation? If you use benzene in
22 making styrene, it wasn't toxic in our use of the

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1 material, in its basic toxicity, but there was not any
2 particular exposure to it.

3 Q Would you be concerned about exposure to styrene
4 tars?

5 A It all depends on the exposure. If you're
6 heating it up in a room the size of a small closet, I
7 think you wouldn't want to be breathing it. If you were
8 just putting it in a dump truck and moving it someplace,
9 you wouldn't be concerned about the toxicity. If you're
10 putting it in a landfill of the type we used at Texas, I
11 wasn't concerned about the toxicity.

12 Q Let me ask you, Dr. Kelly, during the course of
13 our deposition, you've described some materials as
14 moderately toxic or toxic or highly toxic. How would you
15 classify styrene tars?

16 A Moderately toxic.

17 Q What is flux oil, Dr. Kelly?

18 A What is what?

19 Q Flux oil.

20 A I couldn't hear the word.

21 Q Flux oil, f-l-u-x oil. Do you know what that
22 is?

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1 A No, I don't.

2 Q Do you know whether flux oil was contained in
3 the styrene tars at Texas City?

4 A I don't know whether it was or not.

5 Q Did you know if styrene tars were a waste
6 material from the styrene process?

7 A Yes. We certainly didn't go out to manufacture
8 styrene tars; we went out to manufacture the styrene.
9 This was left behind, so I think you could consider it a
10 product of the manufacture of styrene.

11 Q And there were large quantities of styrene tar
12 from the Texas City plant?

13 A Yes, quite a lot.

14 Q Was the tar regarded as a troublesome disposal
15 problem, Dr. Kelly?

16 A Well, well, I don't know how you would qualify
17 it as troublesome. We'd rather there not be any tars, but
18 we had them and we could live with it.

19 Q If Mr. Garrett told you that the tar most
20 certainly constituted a disposal problem, would you take
21 his word for it?

22 A Yes, sir.

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1 MR. MC CONNELL: Let me show you a document,
2 Dr. Kelly, which we will mark as Kelly Exhibit 09.

3 (Kelly Exhibit 09 identified.)

4 BY MR. MC CONNELL:

5 Q Dr. Kelly, this is an article written by Jack
6 Garrett?

7 A Yes, sir.

8 Q The title is Tars, Spent Catalysts and
9 Complexes as Petrochemical Waste Sources.

10 A Yes, sir.

11 Q And the article, if you'll look at the top of
12 the page, was written in 1959?

13 A Yes, sir.

14 Q Are you familiar with this article, Dr. Kelly?

15 A Well, I've seen it before.

16 Q Let me ask you to look on page 1 under the
17 section called "Scope of problem."

18 A Yes, sir.

19 Q And Mr. Garrett describes here a process may be
20 considered in which an organic liquid A and a gas B are
21 reacted catalytically to produce crude AB. The crude
22 material is subsequently distilled to give the refined

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1 product AB.

2 A Yes, sir.

3 Q Is that generally the description of what
4 happens in the styrene process at Texas City?

5 A He's calling it a hypothetical. In a broad
6 sense, yes. You take -- we took ethylbenzene and reacted
7 it to form styrene. Then we distilled it. Yes, that's
8 pretty close.

9 Q Would you read for us the next two sentences,
10 Dr. Kelly.

11 A There are several places in this process where
12 troublesome disposal problems could arise. Distilled tars
13 from the distillation step would most certainly constitute
14 such a problem. The spent catalyst, in the form of an
15 organic catalyst complex, a spent-catalyst tar, or spent
16 dry-bed material, would pose another disposal problem, the
17 extent of which would depend on many factors. Before an
18 adequate disposal process could be designed, intelligent
19 answers would have to be found to questions such as: In
20 what form is the spent material when removed from the
21 process? How much of the spent material is produced per
22 unit of time? How toxic is the spent catalyst or its

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1 combustion products? Can the catalyst be regenerated or
2 can some recoverable product be produced from the spent
3 material?"

4 Q Let's go back to the first part of that
5 paragraph, Dr. Kelly. Mr. Garrett said in this article
6 that first of all, "there are several places in the
7 process where troublesome disposal problems could arise?"

8 A Yes, sir.

9 Q And he said "distilled tars from the
10 distillation step would most certainly constitute such a
11 problem"?

12 A Yes, sir.

13 Q And distilled tars would be tars such as the
14 styrene tars we've been talking about?

15 A Yes, sir.

16 Q Mr. Garrett knew that in 1959? He wrote about
17 it in this article?

18 A Yes, sir.

19 Q And Mr. Garrett was the person on your medical
20 department staff who was responsible for waste disposal
21 matters?

22 A For what?

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Q Waste disposal matters. In the medical department?

A In the medical department. Again, he was not responsible for the overseeing of the day-to-day disposal.

Q That was the plant people?

A That was the plant people.

Q But Mr. Garrett was the man in the medical department who was responsible for those issues: is that right?

A Responsible for knowing what went on there, yes, sir.

Q Let's talk about monochlorobenzene, Dr. Kelly. What is it?

A It's a benzene ring with one atom of chlorine.

Q It was used in Texas City?

A I don't remember. I just don't remember now.

Q Do you recall that that was an intermediate chemical in the styrene process?

A I don't recall. I've been away from the styrene manufacturing for quite some time.

Q What is meant by the term maximum permissible concentration for a chemical, Dr. Kelly?

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1 A Well, from the industrial hygiene point of view.
2 it's the maximum allowed for either an eight-hour working
3 day over a lifetime, or it could be the upper limit that
4 could be -- the individual could be exposed to for shorter
5 periods of time, 30 minutes, half hour or an hour.

6 Q Would it be correct to say that over that
7 maximum permissible concentration, the exposure would be
8 considered unsafe?

9 A Yes, I think so. If you -- again, you have to --
10 if you're talking about breathing the material for two
11 minutes, that's one thing. If you're talking about
12 breathing it for eight hours, that's something else. But
13 that's what maximum allowable concentrations are supposed
14 to do. You're supposed to observe them and not exceed
15 them over a period of time.

16 Q What can you tell me about the toxicity of
17 monochlorobenzene, Dr. Kelly?

18 A It doesn't have any of the toxic characteristics
19 on the blood-forming organs as benzene does. It's again,
20 I'd say a moderate toxicity from the standpoint of an
21 industrial chemical.

22 Q Is it a narcotic?

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1 A Yes, I think if you breathe enough of it in high
2 concentrations. Whether it had to be -- the temperature
3 had to be elevated to get a sufficiently high
4 concentration; I believe it has to be elevated
5 temperatures. I don't know how high.

6 Q What does it mean to say that a chemical is a
7 narcotic, Dr. Kelly?

8 A It will put you to sleep if you get enough of
9 it. It affects the central nervous system as much as an
10 anesthetic.

11 Q If you get too much, it can kill you?

12 A If you get too much?

13 Q If you get too much, it can kill you?

14 A Oh, I think so, if you get too much of it.

15 Q Would you get headaches with overexposure to
16 monochlorobenzene?

17 A One could.

18 Q Dizziness?

19 A Yes.

20 Q Stupor?

21 A Yes.

22 Q All of those things were known back in the

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1 1950s?

2 A Yes, sir.

3 Q Did Monsanto exceed the maximum permissible
4 concentration for monochlorobenzene in some of its plants?

5 A They may have at times.

6 MR. MC CONNELL: Let me show you a document,
7 Dr. Kelly, which we will mark as Kelly Exhibit 30.

8 Kelly Exhibit 30 identified.

9 BY MR. MC CONNELL:

10 Q Do you recognize this, Dr. Kelly, as a memo you
11 wrote in 1951?

12 A Yes, sir, I do.

13 Q It's dated February 6, 1951?

14 A Yes, sir.

15 Q The subject is monochlorobenzene?

16 A Yes, sir.

17 Q You're telling -- and I can't read the name of
18 the person it's addressed to -- but you're telling someone
19 that you would give a customer the following data
20 concerning monochlorobenzene?

21 A Yes, sir.

22 Q You go on to say that monochlorobenzene has the

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1 effect of a narcotic?

2 A Yes, sir.

3 Q You go on to say the symptoms of overexposure
4 are headaches, dizziness and stupor?

5 A Yes, sir.

6 Q You go on to say the maximum permissible
7 concentration has been set at 75 parts per million?

8 A Yes.

9 Q And then you go on to say "I think this is
10 extremely conservative. As in several of our operations,
11 I am sure the concentration exceeds that. Nevertheless,
12 that is the law in many states, and presumably in Ohio."
13 Is that correct, Dr. Kelly?

14 A Yes, sir.

15 Q Accurate statement when you made it in 1951?

16 A Yes.

17 Q Monsanto was exceeding the maximum permissible
18 concentration in several of your operations?

19 A Well, I don't believe I would put it that we
20 were exceeding it as an ongoing practice. What I meant by
21 that was, I'm sure we got over 75 parts per million at
22 various times.

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1 Q In several of your operations?

2 A Yes, sir. And I also say it was conservative
3 because we never had any ill effects in our workers from
4 exceeding such levels. If there were any, I didn't have
5 any documentation, but I was fairly convinced that we did
6 exceed it at times, yes.

7 Q That you did exceed the maximum permissible
8 concentration?

9 A Yes.

10 Q Dr. Kelly, what is ethylene dichloride?

11 A Well, it's two atoms of chlorine and a molecule
12 of ethylene, C_2H_4 , and a couple of carbons on it.

13 Q Is it a chlorinated solvent?

14 A I beg your pardon?

15 Q Is it a chlorinated solvent?

16 A Yes. I don't know if it's a solvent or if it's
17 a gas, though.

18 Q Is it also known by other names, other chemical
19 names?

20 A It might be called perchloroethylene. I'm not
21 sure.

22 Q Is it a toxic material, Dr. Kelly?

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1 A Yes and no. It's been used as an anesthetic, a
2 short acting anesthetic, so it can't be too toxic although
3 anything that's an anesthetic, you could give a person
4 enough of the anesthetic that they will not recover. So
5 from that point of view, you could say it's toxic, yes.

6 Q Is it used today as an anesthetic, Dr. Kelly?

7 A No.

8 Q How long ago was it used as an anesthetic?

9 A Gosh, 30 years ago, 40 years ago. It was used
10 just for very brief periods. If somebody were setting a
11 fracture, you'd want to give them an anesthetic that would
12 just last for one or two minutes. You'd have them inhale
13 the stuff, and it wasn't used widely. It was used mostly
14 in doctors' offices rather than any prolonged surgical
15 procedures.

16 Q What are the effects of long-term exposure to
17 ethylene dichloride, Dr. Kelly?

18 A It all depends on how much exposure. I mean,
19 you get all these symptoms that we talked here about,
20 headache, dizziness, stupor, but long-term exposures to
21 the levels under the maximum allowable concentration or
22 threshold limit value, as it was called later on, I don't

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1 think there are any prolonged effects. But the material
2 is, as I said, is an anesthetic and if you give enough of
3 it, you could cause a fatality.

4 Q What does the term 'maximum allowable
5 concentration' mean, Dr. Kelly?

6 A Just what it says. That's the amount of
7 material in the air that is accepted by the workers in the
8 field as a level that should not be exceeded.

9 Q Does it mean the same thing as maximum
10 permissible concentration that we talked about earlier?

11 A Well, just semantics, one says permissible, one
12 says allowed. Maximum allowable or maximum permissible.
13 Neither one is used anymore. It's called threshold limit
14 values.

15 Q But those terms were used back in the 1950s?

16 A The '70s?

17 Q In the 1950s.

18 A I don't think TLV was used in the '60s. It may
19 have been. I don't know when it came in.

20 Q What about maximum allowable concentration, was
21 that used in the 1950s?

22 A Yes, sir.

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1 2 And above that concentration, the exposure would
2 be unsafe?

3 A Presumably. It depends on how far above and how
4 long the subject was exposed.

5 2 Do you remember what the maximum allowable
6 concentration was in 1958 for ethylene dichloride?

7 A No, sir, I do not.

8 Pause.

9 MR. MC CONNELL: Dr. Kelly, let me show you an
10 exhibit which we will mark as Kelly Exhibit 31.

11 (Kelly Exhibit 31 identified.)

12 BY MR. MC CONNELL:

13 2 Do you recognize this, Dr. Kelly, as a memo you
14 wrote in 1958?

15 A Yes, I do.

16 2 It's addressed to Mr. Gilmore?

17 A Yes, sir.

18 2 And who is Mr. Gilmore?

19 A Safety director at the Texas City plant of
20 Monsanto Company.

21 2 And the subject of the memo is Ethylene
22 dichloride?

1 A That's correct.

2 Q You see in the second paragraph you say this is
3 a compound on which a great deal of laboratory work has
4 been done'; is that correct, sir?

5 A Yes, sir.

6 Q And you go on to say 'the maximum allowable
7 concentration is in the neighborhood of 100 parts per
8 million'; is that correct, sir?

9 A Yes, sir.

10 Q Is that the same as the standard for benzene at
11 that time?

12 A It may have been, but '58, I just don't know.
13 Benzene came down from 100 parts to one and I don't know
14 the time frame.

15 Q I understand. And you go on to say that there
16 may be nausea or drowsiness?

17 A Yes, sir.

18 Q Would it be fair to say the ethylene dichloride
19 is a narcotic like monochlorobenzene?

20 A Yes, I think it's more of a narcotic.

21 Q What is ethylene trichloride, Dr. Kelly?

22 A It's got an ethylene molecule with three

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1 chlorines on it.

2 Q Was that also used in Texas City?

3 A I don't know. I don't remember.

4 Q Is that another chlorinated solvent?

5 A I don't know whether this is a liquid or a gas.

6 At the present time, I just don't know whether it's a
7 solid.

8 Q Is it closely related to ethylene dichloride?

9 A Well, it's got two chlorine atoms and the other
10 has three. It's really in that fashion. I don't know how
11 it relates as far as volatility or even the physical
12 structure, whether it's a liquid or a gas.

13 Q Is the toxicity of ethylene trichlororide
14 similar to that of ethylene dichloride?

15 A I just have to assume. I really don't know off
16 the top of my head what the toxicity of ethylene
17 trichlororide is.

18 Q Is it a narcotic?

19 A I don't know much about the toxicity of it.

20 Q You just don't know one way or the other?

21 A That's correct.

22 Q What is tertiary butylamine, t-e-r-t-i-a-r-y.

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1 b-u-t-y-l-a-m-i-n-e; two words, tertiary, butylamine?

2 A That's a catalyst for various chemical
3 reactions.

4 Q Could you tell me some of the reactions it's
5 used in.

6 A Ethylbenzene to styrene, and I don't know what
7 other areas it may be used in, but it's a pretty common
8 catalyst, as I recall.

9 Q It was used at the Texas City plant?

10 A Yes, it was.

11 Q In the styrene process?

12 A Yes, sir.

13 Q It's also referred to as TBA?

14 A Yes, sir.

15 Q Would you say, Dr. Kelly, that tertiary
16 butylamine is a fairly severe toxic agent?

17 A No, I don't think I would. I think it may be
18 severe as far as irritation of the skin is concerned, but
19 I think from the systemic toxicity, as far as my
20 experience is concerned, we never had a great problem with
21 our workers using this catalyst.

22 MR. MC CONNELL: Let me show you a document.

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1 Dr. Kelly, which we will mark as Kelly Exhibit 32.

2 Kelly Exhibit 32 identified.

3 BY MR. MC CONNELL:

4 Q Do you recognize this, Dr. Kelly, as a memo you
5 wrote in 1971?

6 A Yes, I do.

7 Q That's your signature on the memo?

8 A Yes, sir.

9 Q And the subject is tertiary butylamine?

10 A Yes, sir.

11 Q It's a memo you wrote to Mr. Fox at the Texas
12 City plant?

13 A Yes, sir.

14 Q And the first sentence says This refers to our
15 conversation concerning the toxicology of tertiary
16 butylamine.

17 A Yes, sir.

18 Q Would you read the next sentence for us?

19 A This, as you know, is a fairly severe toxic
20 agent.

21 Q So in 1971 when you wrote this, you knew that
22 tertiary butylamine is a severe toxic agent?

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1 A Yes, sir.

2 Q You went on to say "This is from the standpoint
3 of oral intake?"

4 A Yes, sir.

5 Q Would you read the next sentence, Dr. Kelly.

6 A "This is from the standpoint of oral intake. It
7 is extremely toxic from the standpoint of inhalation in
8 concentrated form and is only mildly toxic from the
9 standpoint of the skin. It is, however, corrosive on the
10 skin and corrosive on the eye."

11 Q So you knew in 1971 that tertiary butylamine is
12 extremely toxic from the standpoint of inhalation?

13 A Yes, sir.

14 Q You knew that it was corrosive to the skin and
15 corrosive on the eye?

16 A Yes, sir.

17 Q Would you read the first two sentences in the
18 next paragraph for us, Dr. Kelly.

19 A After analyzing the cases --

20 Q No, sir, the middle paragraph.

21 A Pathological investigation of the animals after
22 taking the material orally showed effects on the lungs,

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1 liver, and intestinal tract. The same type of pathology
2 was noted following skin application. The kidneys in
3 these acute experiments were not remarkable.

4 Q So in January 1971 when you wrote this, you knew
5 that tertiary butylamine had effects on the lungs?

6 A Yes, sir.

7 Q And on the liver?

8 A Well, I would have to look over the report to
9 answer that.

10 Q Does your letter say that the tertiary
11 butylamine in this study showed effects on the liver?

12 A Yes, sir, it does.

13 Q And did you also say that it showed effects on
14 the intestinal tract?

15 A Yes, sir.

16 Q And you knew those things in January of 1971
17 when you wrote this letter?

18 A Well, yes, we knew that here's a corrosive
19 compound and you had the animal swallow it and it's going
20 to irritate or be corrosive to the upper part of the
21 intestinal tract, and it's a corrosive material. We knew
22 that.

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1 Q And had you known that back in the 1950s,
2 Dr. Kelly?

3 A '50s?

4 Q Yes, sir.

5 A I don't know if I did or not.

6 Q Do you remember what you knew about tertiary
7 butylamine in the 1950s as we sit here today?

8 A No. I knew it was a corrosive compound. I
9 don't believe I knew the extent of the damage it could
10 cause to tissue, either in the lungs or the skin.

11 Q You knew about its corrosive effect in the
12 1950s?

13 A Which?

14 Q You knew about the corrosive effects in the
15 1950s?

16 A Yes, sir. That's the neat stuff. TBA just by
17 itself, not mixed up with a bunch of tars, component of
18 the tars and absorbed by tars.

19 Q Not something you'd want to put in your coffee?

20 MR. BRAY: Object to that trivialization.

21 THE WITNESS: No, it would not. It's not a
22 manufactured -- in fact, I don't know if we manufactured it

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1 or just used it but it was never recommended as a food
2 additive.

3 BY MR. MC CONNELL:

4 Q Do you remember a chemical known as TBC?

5 A Polyvinyl chloride, PVC?

6 Q No, sir, TBC?

7 A C, like a cat?

8 Q T as in Tom, B as in boy, C as in cat.

9 A TB -- what was the last?

10 Q C.

11 A TBC, no, sir, I don't know what it means or what
12 the chemical is.

13 Q Do you remember that there was a TBC used in the
14 styrene process at Texas City?

15 A No, sir, I don't remember it.

16 Q Do you remember anything about TBC being used as
17 an inhibitor at Texas City?

18 A No, sir.

19 Q Dr. Kelly, we've been going for a little over an
20 hour. Would you like to take a short break or would you
21 like to continue?

22 A It depends on what the majority wants.

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1 Q I can keep going. I just wanted to make sure
2 you had a chance to break, if you wanted one.

3 A I'm all right.

4 Q Why don't we go ahead and if you need a break,
5 would you please tell me.

6 A Sure.

7 Q What is hydrogen chloride gas, Dr. Kelly?

8 A Well, it's hydrogen chloride gas. It's hydrogen
9 chloride gas.

10 Q Was it present at various Monsanto plants?

11 A Yes, sir.

12 Q At Texas City?

13 A I'm sure it was. I don't know where it fit into
14 the manufacturing process, but wherever you have chlorine,
15 you're liable to get hydrochloric -- HCl gas.

16 Q Can you tell me about the toxicity of hydrogen
17 chloride gas, Dr. Kelly?

18 A Well, it's corrosive to the eyes, to the skin,
19 to the lungs. It does not have any systemic toxicity
20 apart from the local action of the compound. Its
21 corrosive effect -- after all, hydrochloric acid itself is
22 present in the normal human stomach.

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1 Q What's the relationship between hydrogen
2 chloride gas and hydrochloric acid?

3 A Well, it's the same thing. One is in the liquid
4 phase; one is in the gaseous phase.

5 Q It's basically the vapor from hydrochloric acid?

6 A Yes, sir.

7 Q And in the 1940s, Monsanto knew about hydrogen
8 chloride gas poisoning?

9 A Poisoning?

10 Q Yes, sir.

11 A Well, I don't know if anybody was poisoned by
12 it. It was an acid compound, and it had corrosive
13 features, but it was not accepted as a widespread agent
14 that was causing systemic illness, which is what a poison
15 is.

16 Q You knew it could damage the eyes?

17 A Oh, certainly.

18 Q You knew it could damage the lungs?

19 A Yes.

20 Q That was well known?

21 A Yes, in sufficient quantities, yes.

22 Q And did you have hydrogen chloride gas poisoning

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1 cases at Monsanto's facilities?

2 A No, sir. I mean, we may have had temporary
3 irritation of the lungs or temporary irritation of the
4 eyes from hydrogen chloride gas, but we didn't have any --
5 again, if you say poisoning, I would interpret that as
6 being a systemic poison, which affects the body elsewhere
7 where you get -- in other words, if you get hydrogen
8 chloride gas inhaled, you'll get an irritation of the
9 trachea and the lungs. If you get the vapor in your eyes,
10 you'll get irritation of the eyes.

11 MR. MC CONNELL: Let me show you a document,
12 Dr. Kelly, which we will mark as Kelly Exhibit 33.

13 (Kelly Exhibit 33 identified.)

14 BY MR. MC CONNELL:

15 Q Do you recognize this, Dr. Kelly, as a letter
16 you wrote in 1940?

17 A Yes, sir.

18 Q You were working for Monsanto at the time?

19 A Yes, sir.

20 Q And it's a letter from you to Dr. F.W. Clark at
21 the General Electric Company?

22 A Yes, sir.

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1 Q Do you remember why you wrote this to Dr. Clark?

2 A He must have asked me how we treat cases of
3 exposure to hydrogen chloride gas.

4 Q Would you read the first sentence?

5 A "Our medical routine for the treatment of
6 hydrogen chloride gas poisoning has two forms."

7 Q The next paragraph is about minor cases?

8 A Yes, sir.

9 Q And you explain in that paragraph how you treat
10 the minor cases?

11 A We give it an an anti-spasmodic, such as
12 atropine sulfate, given by mouth one ounce of Hatden's
13 Viburnum compound which is another anti spasmodic that I
14 guess we used 50 years ago. In addition we sprayed it
15 with the mineral oil. Sometimes we gave oxygen and we
16 give morphine.

17 Q And do you remember, Dr. Kelly, that you had
18 some cases of hydrogen chloride gas poisoning that were
19 treated that way?

20 A Yes, sir. Again we used their term "poisoning"
21 as such a catch-all. We had cases of irritation of the
22 lungs from from hydrogen chloride. They occur off and on.

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1 Q The term "hydrogen chloride gas poisoning" is
2 the phrase you used in this letter, isn't it?

3 A Yes, sir.

4 Q Would you read the third paragraph, Dr. Kelly.

5 A "In the hospital the serious cases are given
6 oxygen and carbon dioxide mixtures of the same proportion
7 by nasal catheter as well as morphine and 50 percent
8 glucose intravenous to diminish pulmonary edema."

9 Q So Monsanto had serious cases of hydrogen
10 chloride gas poisoning at that time?

11 A We must have. I don't know how many. It really
12 does not -- I don't recall it being a great problem with
13 some of our plants but we had plants where we made
14 chlorine, and there would be an offshoot of hydrogen
15 chloride gas present if there were a release of chlorine.

16 Q And those cases were treated in the hospital?

17 A I don't recall too many of them going to the
18 hospital, really. We gave oxygen at the dispensaries but
19 I just don't remember any hospitalized cases.

20 Q But the serious cases were sent to the hospital?

21 A If we had them, yes.

22 Q Let's talk about hydrochloric acid, Dr. Kelly.

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1 That's the liquid form of hydrogen chloride?

2 A Yes, sir.

3 Q It's toxic?

4 A I beg your pardon?

5 Q It's toxic?

6 A Is it what?

7 Q Is it toxic?

8 A Well, there again, it's present in the human
9 stomach so it obviously is not toxic from that point of
10 view. It's an irritant, corrosive liquid, and I usually
11 refer to something that's toxic as something that's a
12 compound that will cause damage to the human organism
13 apart from the local damage. It will cause systemic
14 damage and if you do not -- if you do not count the local
15 action on the eyes, skin, lungs, I wouldn't call it toxic,
16 but it's certainly toxic as far as putting on your skin or
17 your eye.

18 Q It will damage the eyes?

19 A Oh, yes, sure it will.

20 Q It will damage the skin?

21 A Yes.

22 Q It's corrosive?

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1 A What?

2 Q It's corrosive?

3 A Well, it doesn't dissolve it. I mean, it will
4 cause similar to a third-degree burn.

5 Q Do you recall that there was a problem with
6 Monsanto workers who were exposed to hydrochloric acid?

7 A Well, we had some in our Massachusetts plant
8 where it bothered the enamel of the teeth. With the
9 exception of that and the exception of acute episodes, we
10 didn't really have much trouble with it.

11 Q What happened to the workers who lost the enamel
12 on their teeth because of hydrochloric acid exposure?

13 A Eventually they lost their teeth.

14 Q At what point in time did that come to your
15 attention, Dr. Kelly?

16 A Late '80s.

17 Q The late 1980s?

18 A Right.

19 MR. MC CONNELL: Let me show you a document,
20 Dr. Kelly, which we will mark as Kelly Exhibit 34.

21 Kelly Exhibit 34 Identified.

22 BY MR. MC CONNELL:

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1 2 Do you recognize this as a letter you wrote to
2 Dr. H.H. Golz at the American Cyanamid Company?

3 A Yes, I do.

4 Q It's dated April 10, 1961?

5 A Yes, sir.

6 Q It's about the effect of hydrochloric acid on
7 teeth?

8 A Yes.

9 Q And it describes the workers who lost their
10 teeth because of hydrochloric acid exposure?

11 A Yes, sir.

12 Q Do you see in the middle of this letter,
13 Dr. Kelly, the sentence that starts "the people who had
14 worked in this department"?

15 A Do I see it?

16 Q Yes, sir.

17 A Yes, I see it.

18 Q Would you read that complete sentence for us.

19 A Starting where?

20 Q "The people."

21 A "The people who had worked in this department
22 for years lost almost all their teeth. How we got away

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1 with it, I will never know, but we never had a suit. They
2 just accepted it as a fact of life. The enamel more or
3 less dissolved. I feel this is rather well documented
4 someplace in the ancient occupational medicine literature
5 although obviously we didn't write it up. These
6 individuals did not complain about upper respiratory or
7 eye irritation.

8 Q So Monsanto got away with that, Dr. Kelly?

9 A Well, I don't know if I'd use the term 'get away
10 with it.' This happened before I came there. I came in
11 the '30s, and I think the compensation laws were such that
12 injuries to the teeth were not compensable unless they
13 were in an accident and knocked a tooth out.

14 Q You did say, Dr. Kelly, 'how we got away with
15 it, I will never know' didn't you?

16 A Yes.

17 Q What did you mean, Dr. Kelly by 'obviously we
18 didn't write it up'?

19 A Well, what I mean by that, I meant that here
20 this is past history that had occurred before I had any
21 contact with them, and I didn't know this was an old
22 process that we weren't using anymore, and I didn't see

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1 any particular reason for writing it up.

2 2 Not something you'd want to tell the public
3 about?

4 A I don't know if that's the reason. It was not
5 of any great interest at the present time in the '60s. I
6 don't exactly know whether a journal would take a paper
7 saying here in the 1930s or '40s we had workers have their
8 enamel of their teeth destroyed by exposure to
9 hydrochloric acid fumes. That may very well have been
10 written up by other people, because anybody who used this
11 Mannheim furnace would have the same exposure we had.

12 2 What is VCM, Dr. Kelly?

13 A V --

14 2 Yes, sir, VCM?

15 A Vinyl chloride monomer.

16 2 Monsanto made vinyl chloride monomer at Texas
17 City?

18 A Yes, it did.

19 2 Vinyl chloride monomer causes cancer?

20 A In a very limited operation in which during the
21 course of polymerizing the vinyl chloride monomer into
22 vinyl chloride polymer, inside the kettle is a

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1 precipitation of the resin of vinyl chloride polymer,
2 inside this big kettle. When I say 'big kettle,' it's
3 about 8 feet in diameter by 8 feet tall. And in some
4 operations, some plants -- not in Monsanto -- would have
5 their workers go in and chip out this, after they're
6 finished with the kettles with a batch of the stuff.

7 We did not use that system, and we never had any
8 cases. The total amount of cases were probably less than
9 10 in the whole industry. So in that sense, it did cause
10 cancer under those -- it caused a very rare type of cancer,
11 and it caused in that particular operation where a man
12 would spend days in this confined kettle chipping it out.
13 But if you say does it cause cancer, it causes those
14 cancers, but as far as causing any other cancers, it did
15 not.

16 Q When did you find out that vinyl chloride
17 monomer could cause cancer, Dr. Kelly?

18 A When?

19 Q Yes, sir.

20 A We found it out when it was reported by Goodrich
21 in 1971 or '72. There have been no other cases reported
22 with the exception of the hemangiosarcomas in the kettle

1 cleaners, and there weren't any more after they went to
2 any type of solvent rather than manual chiseling of the
3 stuff off the inside of the kettle.

4 Q Even before that time, Dr. Kettle, you knew that
5 vinyl chloride monomer was a toxic material, didn't you?

6 A Well, according to your definition, every
7 industrial chemical is a toxic compound. I mean it just
8 is, but there are varying degrees of toxicity. But vinyl
9 chloride monomer does not have any particularly high level
10 of toxicity. I think it could be a narcotic. It could be
11 an asphyxiate. It's not supposed to be breathed at
12 elevated concentrations.

13 Q What is an asphyxiate, Dr. Kelly?

14 A Lack of oxygen. In other words, something you
15 are breathing to the exclusion of the 21 percent oxygen at
16 room air.

17 Q Can it be fatal?

18 A Oh, sure, if you go on enough with it. If
19 you're in a swimming pool, you could be asphyxiated. If
20 you get pulled out it's not fatal, but if you stay at the
21 bottom for three or four minutes, it could be fatal.

22 Q And you knew about the toxicity of vinyl

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1 chloride monomer in the 1950s?

2 A I'm not certain about the date. There was a
3 certain amount of laboratory work done on it, but I don't
4 know when that date was.

5 Q What's your best estimate, Dr. Kelly?

6 A What?

7 Q What is your best estimate? I'm not talking
8 about the cancer. I'm talking about the other toxicity.

9 A Do you mean the irritating and the possible
10 narcotic effect?

11 Q And the asphyxiation.

12 A Oh, I guess it would be sometime in the '50s,
13 but I'm not certain.

14 Q You don't remember the exact year?

15 A No, I don't.

16 Q But it would have been in the 1950s?

17 A Well, to the best of my knowledge. I'm not
18 morally certain about that.

19 Q The workers that you told me about that got
20 cancer, they got angiosarcomas?

21 A Hemangiosarcomas. Not our workers. There were
22 probably less in the entire industry in both the United

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1 Kingdom and the United States.

2 Q What was the term that you used for those
3 cancers?

4 A Hemangio, h-e-m-a-n-g-i-o, sarcoma,
5 s-a-r-c-o-m-a.

6 Q And what are hemangiosarcomas, Dr. Kelly?

7 A Blood vessel tumors.

8 Q What part of the body did they occur in?

9 A Liver.

10 Q Was there some prior evidence that before that
11 time, Dr. Kelly, before 1971 that vinyl chloride monomer
12 caused liver toxicity in addition to the other things
13 we've talked about?

14 A I don't think there was. In fact, even after
15 the occurrence of these tumors, there were no signs of any
16 liver toxicity in the individuals who did not develop the
17 tumors.

18 MR. MC CONNELL: Maybe this would be a good time
19 to take five. We've been going for about an hour and a
20 half.

21 Recess.

22 BY MR. MC CONNELL:

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1 2 Dr. Kelly, do you remember in the mid-1970s
2 finding some potentially serious worker exposure problems
3 in some of the Monsanto plants?

4 A Will you repeat a little louder, please.

5 2 Sure. Do you remember back in the mid-1970s
6 finding some potentially serious worker exposure problems
7 in some of the Monsanto plants?

8 A To what?

9 2 The question is do you remember that you found
10 some potentially serious worker exposure problems?

11 A Well, we had some, but I don't think it was the
12 inception of the 1970s. We had some ongoing serious one
13 in the '60s.

14 2 What was that, sir?

15 A The para-aminobiphenyl problem with bladder
16 cancer -- we're talking about Texas City. This is not at
17 Texas City. Are you talking about Texas City now?

18 2 I'm talking more generally now. There were
19 Monsanto workers who had bladder cancer?

20 A Yes, sir.

21 2 Resulted from the exposure to what chemical?

22 A Para-aminobiphenyl,

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1 p-a-r-a-a-m-i-n-o-b-i-p-h-e-n-y-l, para-aminobiphenyl.

2 Q You found out about that in the 1950s?

3 A Late '40s or beginning '50s.

4 Q How many workers had bladder cancer as a result
5 of their exposure to that chemical, Dr. Kelly?

6 A I'd say 30 to 100.

7 Q Some of the cases were fatal?

8 A Yes.

9 Q How many?

10 A 18 to 20.

11 Q Some of the workers had to have their bladders
12 surgically removed?

13 A That's correct.

14 Q Bladder cancer is a serious disease?

15 A It sure is.

16 MR. MC CONNELL: Dr. Kelly, let me show you a
17 document that we will mark as Kelly Exhibit 35.

18 Kelly Exhibit 35 identified.

19 BY MR. MC CONNELL:

20 Q Dr. Kelly, do you recognize this as a memo you
21 wrote to Dr. George Roush, Jr. in 1975?

22 A Yes, I do.

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1 Q It's dated March 16, 1975?

2 A Yes, sir.

3 Q Who was Dr. Roush?

4 A He was my successor as medical director.

5 Q He was the medical director of Monsanto?

6 A That's correct.

7 Q You were retired at this time?

8 A Yes. I was on a year's consulting basis from
9 December 1, '74 to December 1, '75. Roush had come with
10 us, I think in about '70, I believe.

11 Q Would you read the first paragraph of this
12 letter for us, Dr. Kelly.

13 A "There are two potentially serious conditions in
14 some of our manufacturing plants which demand an intensive
15 investigation and correction. They concern in-plant
16 exposure to our workers and could involve possible
17 development of occupational disease and/or government
18 stoppage of our plant operations. In these matters the
19 medical department bears primary responsibility but such
20 responsibility exists in concert with the operating
21 company and CED" -- that's central engineering department
22 -- so joint efforts must be undertaken."

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1 2 At this point in time you had identified two
2 potentially serious conditions involving worker exposure?

3 A Yes, sir. And of course, we don't have the
4 bladder problem down there because we had discontinued
5 manufacturing of it in 1955 or something like that.

6 2 You didn't stop manufacturing the bladder
7 carcinogen immediately when you found out some of the
8 workers had bladder cancer, did you?

9 A Not the next day, but we did it I'd say within
10 two years, I believe, when -- first of all, we had to be
11 sure that we were still getting exposure to the material,
12 and it took a little while to do that because we had to
13 develop a method for air analysis, we had to develop a
14 method for metabolites of the PAB to see whether the men
15 were still getting exposure to this carcinogen.

16 At first we thought our problems were due to the
17 less sophisticated manufacturing processes in the '30s or
18 '40s, and so when we found that no matter how we tightened
19 up the operation, we didn't have any material in the air,
20 but we still had areas where we had to dig out the
21 material from various kettles, and we had pumps that had
22 to be repacked, and we had developed this metabolic --

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1 analytical method to show that people were getting
2 absorption of the PAB in spite of everything we did. We
3 got out and heard the Europeans were able to carry out a
4 process somewhat similar to ours. Well, when I went over
5 to Germany and found out that we really were still having
6 cases, I told the manufacturing people in St. Louis, well,
7 we've got to get out.

8 So we did, but, of course, as I said,
9 occupational cancer and everything else, there's a long
10 lag time, and so people who were exposed in the '30s still
11 could develop a tumor in the '50s.

12 Q Monsanto continued to make PAB for two years
13 after you found out about the bladder cancer problem?

14 A Yes, sir.

15 Q And the workers continued to be exposed?

16 A Well, yes, but they continued to -- our belief at
17 that time was they were getting the cancers from their
18 exposure in the earlier days. We weren't getting any
19 cancers from workers who had just entered into our
20 employment in that particular department. In other words,
21 if a person came to work in 1950, he wasn't getting any
22 tumors, but we got out anyway because we knew that if we

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1 didn't get out, these people would have. There might be
2 fewer people, but we knew we shouldn't be exposing people
3 to a carcinogen.

4 Q And you knew that in the 1950s?

5 A Yes, sir.

6 Q Let's go back to Exhibit 35, Dr. Kelly. There
7 are two paragraphs talking about the problems you had
8 found. The first one says "The DMAC, VER, UNCL and AN
9 exposures in our textile plants, especially Decatur and
10 Lincoln." What is DMAC, Dr. Kelly?

11 A Dimethyl acetamide.

12 Q What is that, Dr. Kelly?

13 A That's a solvent for acrylic fiber.

14 Q Is it a chlorinated solvent?

15 A I don't think so. Dimethyl acetamide, no, it's
16 not chlorinated.

17 Q What was the exposure problem with DMAC,
18 Dr. Kelly?

19 A Well, you spin this acrylic fiber into a bath of
20 DMAC and there's volatilization there. There's also skin
21 contact because the stuff eats up gloves, and you can't
22 very well handle these little thin fibers that are coming

1 out of the spinnerets with tongs or something else. You
2 sometimes have to put your hands in there.

3 Q What was the toxicity problem for the workers
4 with that exposure?

5 A I beg your pardon?

6 Q What was the toxicity problem with CMAC?

7 A Liver problems.

8 Q What kind of liver problems, Dr. Kelly?

9 A Well, it increased liver enzymes, and we had no
10 fatalities. We had very few hospitalizations from it, but
11 we did have elevated liver -- a more sophisticated liver
12 function test that had been available before the 1970s.

13 Q Was CMAC used at Texas City?

14 A I beg your pardon?

15 Q Was CMAC used at the Texas City plant?

16 A No.

17 Q Let's talk about VER. What is VER, Dr. Kelly?

18 A Vinyl bromine, I think. Vinyl bromine.

19 Q Is that VER? Have I misread it?

20 A V for Victor, B for Bear, R for Robert.

21 Q And what is vinyl bromide, Dr. Kelly?

22 A What is -- it's the same as vinyl chloride, only

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1 it has a bromine atom instead of a chlorine atom.

2 Q Same kind of toxicity as vinyl chloride?

3 A I think so.

4 Q Causes cancer?

5 A Not that I know of.

6 Q But the other toxicity is the same?

7 A Pretty much so.

8 Q Was that used at the Texas City plant,

9 Dr. Kelly, vinyl bromide?

10 A No, sir.

11 Q What is VNCL, Dr. Kelly?

12 A Probably vinyl chloride. I don't know why I've
13 got that N in there, vinyl chloride.

14 Q And that was made in Texas City?

15 A Yes, sir.

16 Q And we've already talked about the toxicity of
17 vinyl chloride?

18 A What?

19 Q We've already talked about the toxicity of vinyl
20 chloride?

21 A Yes, sir.

22 Q And what is AN, Dr. Kelly?

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1 A Acrylonitrile.

2 Q That was made in Texas City?

3 A Yes, it was.

4 Q And we've talked about the toxicity of
5 acrylonitrile?

6 A Yes.

7 Q Let's look at the second paragraph, Dr. Kelly.
8 You say the SO₂, fluorine, silica, nuisance dust and
9 possibly arsenic in our phosphorus manufacturing units.

10 I take it from your memo there was a potentially
11 serious exposure problem with those materials?

12 A Well, yes, sir. We had electric furnaces and in
13 electric furnace operations, you have an awful lot of
14 particulate matter, both in the dust and the gaseous
15 phase.

16 Q Were any of these materials used at Texas City,
17 Dr. Kelly?

18 A I don't think so, but there were no problems.
19 If they were used, it would be in a small amount. SO₂
20 would be a problem from boiler -- from stacks. Nuisance
21 dust, of course, is pretty ubiquitous. Fluorine we didn't
22 use in Texas City.

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1 Q I'm sorry, you did or did not?

2 A Did not. Silica, I don't think we used it.

3 Q So those were problems at other plant sites?

4 A Yes, sir.

5 Q What is SO₂, Dr. Kelly?

6 A Sulfur dioxide.

7 Q And could you tell me about the exposure
8 problems you were having with SO₂?

9 A Well, I would say the stacks -- the largest of
10 what the exposure problem. I don't know where the SO₂
11 entered into the manufacturing process, per se.

12 Q And by stacks, you mean from smokestacks?

13 A Yes.

14 Q Emissions from the plant?

15 A That's correct.

16 Q What was the problem that you faced with those
17 SO₂ emissions, Dr. Kelly?

18 A What is what?

19 Q What was the problem that you faced with those
20 SO₂ emissions?

21 A It's an irritating compound to the lungs and
22 that was -- but here, this is a phosphorus manufacturing

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1 unit, and so there was a lot of SO_2 coming out of the
2 electric furnace, which is a pretty big thing, about 35
3 feet in diameter and about 10 feet in height. And you run
4 an awful lot of electric current in there and you melt all
5 this phosphorus that you have picked up or dug out of the
6 Columbia neighborhood. And there is sulfur in the ore
7 also and under the reduction process, you get SO_2 .

8 Q And what would be the consequence of human
9 exposure to those SO_2 emissions, Dr. Kelly?

10 A Chest irritation.

11 Q Irritation to the lungs?

12 A Yes, sir.

13 Pause.

14 BY MR. MC CONNELL:

15 Q Dr. Kelly, what is vinylidene chloride.
16 v-i-n-y-l-i-d-e-n-e?

17 A It was a compound. We didn't make it. Dow made
18 it. It's used similarly -- it was used, although not as
19 extensively as vinyl chloride, to make lightweight film
20 and flexible film. I don't know the -- I can't give you
21 the chemical formulation right at the present time.

22 Q How is it related to vinyl chloride, Dr. Kelly?

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1 A I don't know. I can't remember the chemical
2 formulation of it, but it's a fairly close cousin to vinyl
3 chloride.

4 Q Did Monsanto make vinylidene chloride?

5 A To the best of my recollection, it did not.

6 Q Do you recall some concern at Monsanto in the
7 early 1970s about the cancer aspect of vinylidene
8 chloride?

9 A No, sir. If I see a memorandum, I might be
10 refreshed.

11 MR. MC CONNELL: Let me show you a document,
12 Dr. Kelly, that we'll mark as Kelly Exhibit 36.

13 Kelly Exhibit 36 identified.

14 BY MR. MC CONNELL:

15 Q Do you recognize this, Dr. Kelly, as a memo that
16 you got from Mr. Wheeler in 1974?

17 A Yes, sir, I've read it.

18 Q Do you recognize this as a memo that you
19 received from Mr. Wheeler in 1974?

20 A Well, I received a copy of it. The original
21 went to John Chamberlain, who was manufacturing
22 superintendent of our textile department.

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1 Q Your name appears here in the upper right-hand
2 corner as one of the people receiving the copy?

3 A Yes, sir.

4 Q You're the second name on the list?

5 A Yes, sir.

6 Q And in the very first paragraph Mr. Wheeler says
7 "I have discussed with Joe Martin and George Hughey the
8 current concerns involving a possible cancer aspect of
9 vinylidene chloride.

10 A Yes, sir.

11 Q Do you remember that being a concern at Monsanto
12 at that time?

13 A Do I what?

14 Q Do you remember the cancer aspect of vinylidene
15 chloride being a concern at that time?

16 A Well, it certainly was a concern of PPG. We
17 didn't manufacture the material, and I'm not sure what the
18 concern was on the part of Monsanto as well as the other
19 21 different companies that were somehow involved with
20 vinylidene chloride, obviously. They're asking for 5
21 percent of the costs of the laboratory work. We weren't a
22 very prominent factor in the vinylidene chloride business.

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1 Q Mr. Wheeler was recommending that Monsanto pay
2 part of the cost of that research?

3 A That's correct.

4 Q Would you have done that, Dr. Kelly, if you
5 weren't making vinylidene chloride?

6 A I think so, because I really don't know what
7 happened, whether they went along with this or not. That
8 was in my last year at the company, and I don't know what
9 they did. But we would because if you tar one film, one
10 product, you got a second cousin in the next room, you
11 want to find out if there's any truth to the rumor that
12 that causes cancer. We'd be happy to find out that it
13 would not because it would reflect on our vinyl chloride
14 film.

15 Q Let me direct your attention to the second
16 paragraph in this memo. Would you read that for us,
17 Dr. Kelly.

18 A As you can imagine, this subject was developed
19 because of the vinyl chloride cases in humans after the
20 demonstration of the cancer potential in animals.

21 Q So at this point in time, you already knew that
22 vinyl chloride would cause cancer in humans?

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1 A Oh, yes, I think I said earlier that around '70,
2 they discovered these cases at Goodrich and the Kettle
3 cleaning people had developed hemangiosarcomas.

4 Q 1971 or '72?

5 A That's correct.

6 Q And prior to that time, there had been studies
7 showing that vinyl chloride could cause cancer in animals?

8 A I don't know about that. I mean, it doesn't
9 ring a bell as to where the cancers were or where they
10 were shown.

11 Q Mr. Wheeler's memo seems to suggest that there
12 were vinyl chloride cases in humans discovered after the
13 demonstration of the cancer potential in animals?

14 A That's what he says.

15 Q Do you remember when those animal studies were
16 done, Dr. Kelly?

17 A No, sir, and I don't remember who did them.

18 Q Do you think you'd remember those if we showed
19 you copies of them?

20 A What?

21 Q Do you think you'd remember those if we showed
22 you copies?

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1 A Yeah, sure I would.

2 Q That would refresh your memory?

3 A Yes.

4 Q Let's talk about mercury, Dr. Kelly. Is that a
5 toxic material?

6 A Again, if you have it in a filling in your
7 mouth, it's not toxic. If you take it as dichloromercury,
8 it's quite a deadly compound. If you take it as calomel,
9 which everybody down South used to take every spring as a
10 medicine, it isn't toxic. Now, elemental mercury itself,
11 which occurs very, very widespread, it's in coal. It's in
12 rivers. So the human lives with it but again, it's how
13 much you take.

14 Q Many mercury compounds are known to be toxic?

15 A Sure. Many are not toxic.

16 Q It was known in the 1940s and 1950s that many
17 mercury compounds were toxic?

18 A I don't know whether the term "many" is correct,
19 but it was known there was some toxic potential in mercury
20 salts.

21 Q Monsanto took action to prevent worker exposure
22 to mercury?

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1 A Yes, sir.

2 Q Do you remember there was a mercury problem,
3 Dr. Kelly, at Monsanto's Muscle Shoals plant?

4 A Well, I don't know. I don't remember it. I
5 know we used mercury there in the manufacture of
6 chlorine. I don't recall any cases of illnesses. We may
7 have had some, but I don't recall it.

8 MR. MC CONNELL: Let me show you a document,
9 Dr. Kelly, that we will mark as Kelly Exhibit 37.

10 Kelly Exhibit 37 identified.

11 BY MR. MC CONNELL:

12 Q Do you recognize this, Dr. Kelly, as a memo that
13 you received from Mr. Pfeifer at the Muscle Shoals plant
14 in 1953?

15 A Yes, sir.

16 Q It's dated May 12, 1953?

17 A Yes, sir.

18 Q It starts off by saying Dear Emmet. Thanks for
19 your memo of May 4 on the subject of the mercury problem
20 at Muscle Shoals?

21 A Yes, sir.

22 Q He goes on to talk about a problem with fairly

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1 high concentrations of mercury vapor in certain areas of
2 the cell building?

3 A Yes, sir.

4 Q He goes on to talk about the workers being told
5 to wear respirators to avoid exposure to the mercury?

6 A Yes, sir.

7 Q Was it well known in 1953, Dr. Kelly, that it
8 was important to avoid exposure to these mercury
9 compounds?

10 A Well, this is elemental mercury itself.

11 Q And it was known at that time it was important
12 to avoid exposure to elemental mercury?

13 A Yes, sir.

14 Q What are some of the symptoms of mercury
15 toxicity, Dr. Kelly?

16 A Well, there's acute and chronic. Acute could be
17 kidney failure. Chronic could be neurological
18 disturbances, and I would say those are the two main,
19 neuromuscular for chronic exposure and systemic kidney
20 involvement for acute exposures.

21 Q And by chronic exposures, you mean long-time
22 exposure?

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1 A Yes, sir.

2 Q And what do you mean by neurological disorders,
3 Dr. Kelly?

4 A Well, there's disturbances in gait. There's
5 disturbances in sensory levels. I think there's some
6 mental components are diminished. There's nervousness and
7 tremors.

8 Q What do you mean, Dr. Kelly, when you say that
9 some mental components are diminished?

10 A Well, there's feelings of apprehension, feelings
11 of fright. I think there may be errors in judgment, that
12 there's some psychological problems that may be associated
13 with it. Again, we're still talking about how much you
14 got, how much exposure you got and how long you got it.

15 Q And what do you mean when you say tremors?

16 A You shake.

17 Q What about the sensory problems, Dr. Kelly?
18 What were you referring to there?

19 A I think lack of unaltered feeling in your
20 extremities. You may have areas of anesthesia in your
21 hands. I guess that's the sensory ones that you get.

22 Q You lose the sense of touch? Is that what you

1 mean by anesthesia in the hands?

2 A Yes, sir.

3 Q Does it have an effect on your vision?

4 A I beg your pardon?

5 Q Vision? Does it have an effect on vision?

6 A It could, yes, sir.

7 Q Do you remember there was a serious problem at a

8 Japanese plant that was using mercury as a catalyst to

9 make vinyl chloride?

10 A Yes, sir.

11 Q Small amounts of mercury were released as a

12 waste?

13 A I don't know whether the term "small" is correct
14 or not.

15 Q What happened to the mercury when it was

16 released, Dr. Kelly, do you remember?

17 A It went down on the bottom of some bay over
18 there next to a town, which used that for their water
19 supply.

20 Q The local populace was exposed to that?

21 A To very large amounts, yes, sir.

22 Q What was the result?

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1 A I'm not too familiar with the results at the
2 present time but quite a few of the people got sick. I
3 don't know if there were any fatalities or not. This was
4 an organic mercury and the amount they ingested in the
5 fish was pretty large, and they got a pretty good-sized
6 dose of the mercury compound.

7 Q They suffered pretty serious illnesses as a
8 result?

9 A To the best of my recollection, yes, that was a
10 pretty serious local epidemic over there.

11 Q Who owned the Japanese plant, Dr. Kelly?

12 A I don't know. It wasn't Monsanto.

13 Q And do you recall when that problem occurred?

14 A 60s or 70s. I don't know when.

15 Q Could it have been in the 1950s?

16 A I don't know. I don't remember.

17 MR. MC CONNELL: Let's mark this as Kelly
18 Exhibit 33.

19 Kelly Exhibit 33 identified.

20 BY MR. MC CONNELL:

21 Q Dr. Kelly, do you recognize this as minutes of
22 the medical advisory committee meeting at the

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1 Manufacturing Chemists Association?

2 A Yes, sir. I do.

3 Q It's dated October 5, 1960?

4 A Yes, sir.

5 Q And do you see you're listed as the chairman of
6 the committee?

7 A Yes, sir.

8 Q And you were the chairman of that committee at
9 the time?

10 A Yes, sir.

11 Q Let me ask you to turn, Dr. Kelly, to page 4.
12 The pages are numbered at the top. Down on the bottom
13 third of the page -- I'm sorry, Dr. Kelly, do you have
14 that?

15 A Yes, sir.

16 Q On the bottom third of the page there's a
17 paragraph that reads as follows: "Dr. Kelly quoted an
18 example of a Japanese plant using mercury as a catalyst in
19 the manufacture of vinyl chloride. Small amounts of
20 mercury were released as waste and following concentration
21 by reaction in shellfish were eaten by the local populace
22 resulting in development of neurological disorders." Is

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1 that the incident we've been talking about?

2 A Yes, sir.

3 Q These minutes are dated October 5, 1960. Does
4 that refresh your memory, Dr. Kelly, that this mercury
5 contamination incident in Japan took place in the 1950s?

6 A Whether it occurred in 1960 itself or earlier in
7 the previous decade.

8 Q It was sometime before October 5, 1960?

9 A Oh, sure.

10 Q And you certainly knew about it in October of
11 1960?

12 A Yes, sir.

13 Q And at the meeting we're talking about you
14 reported that small amounts of mercury were released as
15 waste; is that right, Dr. Kelly?

16 A That's what I said here. However, I also said
17 there was bioaccumulation in the fish. That's a
18 phenomenon in which the mercury gets down in the bottom of
19 the -- in the sediment in the bottom of this body of
20 water. The algae -- that might be 1 part per million in
21 the water. The algae eat it 1 part per 100,000 and the
22 fish eat the algae. You might get 1 part per 100 in

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1 fish.

2 So even if it's a small amount of mercury -- and
3 I don't know how correct my quote was on the small amount
4 of mercury released by waste. I thought it was a fairly
5 good-size amount that was released over a relatively long
6 period of time. And so I don't know the exact dose that
7 the people got.

8 Q So you knew that bioaccumulation would take
9 place in 1960; that was a phenomenon you knew about in
10 1960?

11 A It's questionable whether that came to the
12 forefront. I thought it was somewhat later.

13 Q But you were talking in these minutes about
14 concentration in the shellfish, weren't you, Dr. Kelly?

15 A Yes, sir.

16 Q And you knew that if small amounts of mercury
17 were released in the waste, larger amounts could show up
18 in the shellfish?

19 A Yes, sir.

20 Q And that would be true not just in Japan but in
21 other places, wouldn't it?

22 A I don't know if you can generalize from one body

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1 of water in one ecosystem to the other. I just don't know
2 that.

3 Q The mercury that was being used in Japan was
4 used in the vinyl chloride plant; is that right?

5 A That's to the best of my knowledge, yes.

6 Q And Monsanto used mercury in its vinyl chloride
7 process in Texas City; is that right?

8 A Yes, sir. I don't know if it was the same
9 chemical reactions occurring. Whether the mercury would
10 be liberated from our spent catalysts, whether it was the
11 same catalyst as the Japanese or different one, I just
12 don't know.

13 Q What did Monsanto do with the mercury wastes
14 from that process, Dr. Kelly?

15 A It what?

16 Q What did Monsanto do with the mercury wastes
17 from its vinyl chloride process in Texas City?

18 A I think at various times they did various
19 things. Sometimes they shipped the material to a
20 recycling outfit that would recover the catalyst -- that
21 recovered the mercury. Sometimes they landfilled it, and
22 I don't know if they did deep injection wells or not.

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1 Q Sometimes it was dumped in pits?

2 A Yes, sir, in landfills.

3 Q Sometimes it was released to the sewers and went
4 into the bay?

5 A I don't recall that.

6 Q You just don't remember one way or the other?

7 A Well, I never heard about it. I mean, it may
8 have, but I just don't know.

9 Q Dr. Kelly, let's turn, if we could, to the first
10 page of Exhibit 18. These are the MCA minutes we've been
11 talking about.

12 A Yes, sir.

13 Q There's a discussion here about industrial
14 problems in environmental health; is that right,
15 Dr. Kelly?

16 A Yes, sir.

17 Q And there's an account here of the discussion
18 that took place at that meeting, which is not a verbatim
19 account, but is intended to show the thinking of the
20 committee at that time?

21 A Yes, sir.

22 Q And various remarks are attributed to different

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1 people on the committee?

2 A Yes, sir.

3 Q And you took part in that discussion?

4 A Yes, sir.

5 Q The first time your name shows up is right at
6 the start, Dr. Kelly where it says here, According to
7 Dr. Kelly, we have to decide what we mean by industrial
8 problems in environmental health. There is a tendency for
9 government to emphasize the problems. Is that an
10 accurate reflection of what you said at the meeting?

11 A Well, I don't remember. When they have
12 downsized my remarks in a meeting to two sentences, I
13 don't know if it reflects what I was saying at that
14 meeting.

15 Q Let's look further down the page. There's
16 another entry for you, Dr. Kelly. Would you like to read
17 that one for us.

18 A General Hull can: A, claim things are not so
19 bad as people often think, or can, B, show what industry
20 is doing in pollution abatement. If we claim we are
21 keeping pollution down to low enough levels, we will be
22 asked how we know such levels are low enough.

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1 Q Who was General Hull, Dr. Kelly?

2 A He was an ex-general. He was the executive
3 director of the Manufacturing Chemists Association.

4 Q He worked for MCA?

5 A MCA.

6 Q Was that one of the approaches that you took at
7 that time, Dr. Kelly, to claim that things are not so bad
8 as people often think?

9 A No, I don't think so, but I think we wanted to
10 bring a sense of realism into pollution abatement
11 activities.

12 Q Let's look at the next page, Dr. Kelly, at the
13 very top. There's another entry for you.

14 A It looks like we skip number 20. We go from 19
15 to 21.

16 Q There may be a page missing here and if you look
17 at the Bates numbers at the bottom, obviously this is all
18 we got so I don't know anything more than you do. Would
19 you read that entry for Dr. Kelly at the top of the page.

20 A There is bound to be pollution. If industry
21 could raise the price of its commodities, it could reduce
22 the pollution level.

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1 Q Is that an accurate statement, Dr. Kelly, that
2 in 1960, you knew that there is bound to be pollution?

3 A Yes, I think that's accurate. It was accurate
4 then.

5 Q Was it also accurate if you could raise the
6 price of commodities, you could reduce the pollution
7 level?

8 A Well, I guess you could. I certainly was not
9 now and I wasn't then an expert on reducing pollution
10 levels and I don't know how throwing more money in the
11 problem was going to reduce the size of the problem. So I
12 don't know what my basis was for that statement in 1960.

13 Q You don't doubt that you made that statement in
14 1960?

15 A What?

16 Q You don't doubt that you made that statement in
17 1960?

18 A Again, I don't know how it was phrased. This
19 person has paraphrased what I was saying and whether that
20 is the way my statement appeared to him, whether that's
21 the way I believed, whether that reflects my entire
22 thinking of my statements, I don't know.

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WATER_PCB-SD0000062958

1 Q- Dr. Kelly, do you recall that Monsanto sometimes
2 took a calculated risk in allowing pollution at its plant
3 locations?

4 A I don't know what you mean by a calculated
5 risk. We certainly never took a calculated risk that had
6 anything to do with the safety or the health of people who
7 could be exposed to our waste. I think we never took a
8 calculated risk by skirting any of the state or federal
9 regulations that we knew about.

10 MR. MC CONNELL: Let me show you a document
11 which we will mark, Dr. Kelly, as Kelly Exhibit 39.

12 Kelly Exhibit 39 identified.

13 BY MR. MC CONNELL:

14 Q Do you recognize this as a memo you got from
15 Elmer Wheeler in 1957?

16 A Yes, I do.

17 Q It's dated March 22, 1957?

18 A Yes, sir.

19 Q Mr. Wheeler worked for you in the medical
20 department at Monsanto?

21 A Yes, sir.

22 Q Would you look at the second paragraph of that

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1 memo, Dr. Kelly, and read the first sentence for me.

2 A It is our opinion that data is presently
3 available indicating --

4 Q No, I'm sorry, paragraph 2, Dr. Kelly.

5 A A policy which 'would assure that in the
6 location of future company plants the question of possible
7 fume, dust and smoke claims be given consideration' has
8 been in existence for more than five years.

9 Q So you had a policy about that in 1957 and the
10 policy went back to 1952?

11 A Yes, sir.

12 Q The next sentence says "To our knowledge the
13 potential problems related to air pollution have been
14 given consideration.

15 Is it correct, Dr. Kelly, that in 1957 and in
16 the years immediately prior to that, Monsanto considered
17 those issues?

18 A Yes, sir.

19 Q Would you read the next sentence for me,
20 Dr. Kelly.

21 A To our knowledge the potential problems related
22 to air pollution have been given consideration.

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1 Q That's the one I just read. Would you read the
2 next one.

3 A Difficulties have arisen only because
4 management has not agreed in all cases that pollution
5 sources must be controlled or eliminated.

6 Q And it's true, isn't it, Dr. Kelly, that there
7 were some cases where Monsanto's management did not agree
8 to control or eliminate pollution?

9 A I don't know. I mean, Elmer says so.

10 Q Would you read the next sentence for us,
11 Dr. Kelly.

12 A In other words, at some time during the design
13 stages management has decided that a calculated risk might
14 be taken in the interest of conserving initial capital
15 investment.

16 Q So Monsanto decided to take a calculated risk
17 not to control pollution in order to save money; is that
18 right, Dr. Kelly?

19 A I don't know if that's right or not. That's
20 what Elmer says, but I don't know the basis for his
21 statement there.

22 Q Mr. Wheeler worked for you?

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1 A What?

2 Q Mr. Wheeler worked for you?

3 A Yes, but I wasn't inside his head.

4 Q You found Mr. Wheeler to be a reliable person?

5 A Certainly. I think we have to remember that
6 we're talking now in 1957 thinking rather than 1993
7 thinking. And there may be other factors that calculated
8 risk in the interest of conserving the initial capital
9 investment, but certainly my experience with our
10 management was that they took care -- in fact, we were
11 supposed to -- in fact, we did look over the design stage
12 management to see that pollution activities were given
13 consideration and I don't recall any cases where we had to
14 go to the BAT to have a big discussion as to whether or
15 not adequate pollution abatement was considered in our
16 manufacturing units. I don't know.

17 Q But Mr. Wheeler says here that in some cases
18 management decided not to control pollution in order to
19 save the capital cost?

20 MR. BRAY: Excuse me. Object. Where are you
21 reading from?

22 BY MR. MC CONNELL:

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1 2 Dr. Kelly?

3 MR. BRAY: Object to that characterization.

4 MR. MC CONNELL: Would you read the question
5 back to Dr. Kelly.

6 The reporter read the record as requested.

7 MR. BRAY: Same objection.

8 THE WITNESS: Well, that's what Wheeler says. I
9 don't know if Wheeler had the entire picture at that time
or not. I don't know.

10 MR. MC CONNELL: Mr. Kelly, let me show you a
11 document which we will mark now as Kelly Exhibit 40.

12 Kelly Exhibit 40 Identified.

13 BY MR. MC CONNELL:

14 2 This is a letter dated November 20, 1967 to
15 E.J. Putzell, Jr. And I'd like to direct your attention
16 to page 5 of the letter, Dr. Kelly. Do you see that
17 you're listed as receiving a copy of this letter?

18 A Yes, sir.

19 2 And do you recall that you received a copy of
20 this letter about the litigation research committee in
21 1967?

22 A Yes, sir.

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1 Q What was the litigation research committee,
2 Dr. Kelly?

3 A I guess it was a committee.

4 Q Was there a reason that you were receiving
5 copies of this kind of correspondence?

6 MR. BRAY: Excuse me, Dick. Before you go into
7 much questioning about this, just looking at the nature of
8 the document, I'm not going to interfere with your
9 questioning but I want to preserve any claim of privilege
10 that might be appropriate for this. On the face of it, it
11 would appear to be a privileged attorney-client
12 communication. And if, as an MCO number on this
13 indicates, it was produced in this litigation, I want to
14 preserve any claim of inadvertent production as to this
15 document. And if you'll let me just keep an objection of
16 that sort to the whole line of questioning, we can go on
17 without individual interruptions on individual questions.

18 MR. MC CONNELL: I don't agree with your
19 objection, but you can have a standing objection on that.

20 Would you read the pending question back.

21 The reporter read the record as requested.

22 THE WITNESS: Frankly, I don't know why I was.

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1 except that they knew that people in the medical
2 department had some tangential contact or association with
3 our air pollution activities.

4 BY MR. MC CONNELL:

5 Q Who was E.J. Putzell, Jr., Dr. Kelly?

6 A He was the general counsel of Monsanto.

7 Q Was he a vice president of the company?

8 A Sometime he was. I don't know whether he was in
9 '67. Well, he was obviously. That was his title, general
10 counsel and vice president.

11 Q And he was also the secretary of the
12 corporation?

13 A That's correct.

14 Q Dr. Kelly, let me direct your attention to page
15 4 of this letter, if I could. I'm going to read the
16 portion of the paragraph under the heading Insurance
17 coverage. There was a considerable discussion on the
18 position taken by various insurance companies as to
19 coverage in pollution cases. In most instances apparently
20 the insurance companies have taken the position that the
21 injury resulting from pollution was not the result of an
22 accident, but one that occurred in the ordinary operation

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1 of the plant, and therefore, denied coverage. There seems
2 to be a substantial difference in insurance policies, but
3 most insurance companies are apparently rewriting policies
4 and few now seem to accept coverage.

5 So you received this letter in 1967?

6 A Yes, sir.

7 Q And Monsanto knew in 1967 that insurance
8 companies were taking the position that injury resulting
9 from pollution was not the result of an accident, but
10 resulted from the ordinary operation of the plant, and
11 therefore, that there was no coverage?

12 MR. BRAY: Objection. That's a distortion of
13 the letter.

14 BY MR. MC CONNELL:

15 Q You can answer, Dr. Kelly.

16 A You say did Monsanto know that insurance
17 companies were not covering pollution cases? I don't know
18 whether they did or not. This is one lawyer talking to
19 another lawyer. McFarland is the lawyer, outside counsel,
20 talking to our inside counsel. He's saying what some
21 insurance companies -- the position they were taking as far
22 as coverage was concerned. But my impression is that

1 Monsanto also knew at that time that they were covered on
2 pollution cases by their insurance carriers.

3 So it may be Monsanto knew that some companies
4 were turning it down but from the -- my anecdotal
5 experience was that they were covering cases that I had
6 any contact with. We had cases -- I know they were
7 covering fluoride cases. They were covering automobile
8 spray damage. They were covering SO₂ from their stacks.
9 So I don't believe your statement is correct.

10 Q Dr. Kelly, Monsanto received this letter in
11 1967?

12 A Yes, sir.

13 Q The letter does say in exactly these words "in
14 most instances apparently the insurance companies have
15 taken the position that the injury resulting from
16 pollution was not the result of an accident, but one that
17 occurred in the ordinary operation of the plant, and
18 therefore, denied coverage ?

19 A Yes, it says that.

20 Q And that is a communication that you received in
21 1967?

22 A Yes, sir.

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1 Q In the 1960s Travelers didn't provide any
2 insurance coverage to Monsanto; is that correct, sir?

3 A I don't know when they provided it, but I
4 thought it was in the early '70s, but they did have
5 coverage by Liberty Mutual before Travelers.

6 Q And the negotiations on insurance coverage were
7 handled by the insurance department people that we talked
8 about earlier?

9 A To the best of my knowledge. I had nothing to
10 do with it.

11 Q Mr. Chapman?

12 A Whether it was Mr. Chapman and/or any of our
13 legal people.

14 Q You were never involved in those discussions
15 yourself?

16 A No, sir.

17 Q Nobody from Liberty Mutual ever told you they
18 would cover pollution incidents?

19 A They never told me they wouldn't either.

20 Q Nobody from Travelers ever told you they would
21 cover pollution incidents?

22 A Nobody ever -- they never told me they wouldn't

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1 cover it either.

2 Q They didn't tell you one way or the other?

3 A That's correct.

4 Q That would have been handled by the insurance
5 department people?

6 A Somebody other than me, whether it's the lawyers
7 or the insurance people.

8 MR. MC CONNELL: No further questions at this
9 time.

10 MR. BRAY: Does that mean --

11 MR. MC CONNELL: It probably means it's
12 lunchtime.

13 Whereupon, at 12:10 p.m., the deposition was
14 recessed, to be reconvened at 1:15 p.m. this same day.

15
16
17
18
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22

AFTERNOON SESSION

1:25 p.m.

Whereupon,

R. EMMET KELLY

resumed the stand and, having been previously duly sworn,
was examined and testified further as follows:

EXAMINATION

BY MR. MANTA:

Q Good afternoon, Dr. Kelly.

A Good afternoon, sir.

Q My name is Joe Manta. I'm going to be asking
you some questions and I will endeavor not to be overly
repetitive of the material that was covered in the last
day and a half.

A Thank you.

Q Dr. Kelly, you were asked a number of questions
concerning the toxicity of certain chemicals. Do you
recall?

A Yes, sir.

Q For what purpose was your interest in
determining the toxicity of these chemicals?

A The safety in working with the products, the
safety in handling them.

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1 Q Safety for the employees working at Monsanto?
2 A And for the customers.
3 Q Pardon?
4 A And for the customers.
5 Q And for the customers of the end product; is
6 that right?
7 A Yes.
8 Q And is one of the methods that is used to
9 determine toxicity of certain materials animal studies?
10 A Yes, sir.
11 Q In other words, they feed animals certain doses
12 of chemicals and study the reaction?
13 A Yes, sir.
14 Q And now do they get from the animal studies, the
15 dosage affecting an animal to the dosage affecting human
16 beings?
17 A Usually an educated guess. You have a certain
18 amount of difference in size. In other words, you
19 calculate for the animal so much per kilogram of his body
20 weight. Then you sort of transpose that to a 70-kilogram
21 man. But then that's a -- that's sort of a frail reed to
22 rest upon but it's the best thing we have.

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1 Q And do you recall dispute in scientific circles
2 on just how you're able to relate toxicity from one
3 species to another?

4 A Yes, sir.

5 Q And isn't it true that because of the -- that's
6 in part due to the difference in dose as against the size
7 and weight of the recipient of a dose?

8 A I didn't hear the last sentence.

9 Q Let me rephrase that a little bit. You talked
10 about toxicity being, in part, dose-dependent. Do you
11 recall that?

12 A Yes, sir.

13 Q And even as far as a particular dose is
14 concerned, that toxicity depends in part, at least, on the
15 size and weight of the person or subject that is exposed to
16 that dose; isn't that correct?

17 A Yes, sir.

18 Q So you may have a substance which is not
19 obviously toxic to humans that may be toxic to smaller
20 animals and aquatic life; isn't that correct?

21 A Yes, sir.

22 Q And in your studies, did you try and determine

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WATER_PCB-SD0000062972

1 the effect, you, Dr. Kelly, try to determine the effect of
2 these chemicals on aquatic or animal life?

3 A Yes, sir, at various times.

4 Q And how did you do that?

5 A Toxicity of aquatic animals, relatively a
6 latecomer in the toxicity field. There was a great deal
7 of work done on animal toxicity.

8 Q I'm talking about you personally.

9 A Oh, me, I was not a laboratory man. I did not
10 personally do it.

11 Q You didn't personally do it?

12 A No, sir.

13 Q Let's go back now to another area that was
14 touched in your questioning, and that has to do with your
15 role in waste disposal matters. Do you recall those
16 questions?

17 A Yes, sir.

18 Q As I understand what your testimony was, is that
19 you were not involved in waste disposal matters at
20 Monsanto; is that correct?

21 A No, I was not involved with the policing of
22 waste management.

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WATER_PCB-SD0000062973

1 2. What role, if any, did you have in waste
2 disposal?

3 A My role was to keep the executive committee --
4 the management group of the company up to speed on whether
5 or not new or major remodeling operations of the
6 manufacturing sites, manufacturing processes, that waste
7 disposal was given proper recognition and, in the opinion
8 of our industrial hygienist, was conversant with state of
9 the art methods of waste management.

10 2 And did you become -- were you an expert on
11 state-of-the-art matters on waste disposal?

12 A No, sir, I was not.

13 2 And did you rely on somebody who was?

14 A On Wheeler and Garrett, yes, sir.

15 2 In terms of waste disposal, were you involved in
16 the decisions of how and where a particular plant would
17 dispose of its waste materials?

18 A No. We were not -- I personally, in the medical
19 department, was responsible to see that in our opinion,
20 they had given consideration to adequate and sufficient
21 methods of waste disposal. We didn't tell them what kind
22 to use or where to put the treatment plant, if they were

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1 going to treat the plant, whether or not to use a city
2 waste treatment plant or use a landfill or any other of
3 several methods of disposal.

4 Q How did you make this information available to
5 the plant?

6 A We made it available to the executive committee
7 and said we approve what they are doing as far as waste
8 management is concerned. If we did not approve it, then
9 the proposal would be bounced back to them until it came
10 back to meet with our approval.

11 Q Now, would that have to do with waste disposal
12 facilities that would have required a capital expenditure?

13 A Yes, sir.

14 Q What about waste disposal activities which did
15 not require a capital expenditure? Were you involved in
16 that?

17 A Yes, if it was the wrong type, if we threw it in
18 a river and, didn't cost any money, but we were certainly
19 involved in it because we said you can't do that.

20 Q When I ask you, you keep talking about "we" in
21 terms of -- I'm asking about you personally now. I'm
22 talking about you personally. I want to know what your

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WATER_PCB-SD0000062975

1 personal involvement was in connection with waste
2 disposal?

3 A I would sign a memorandum to the executive
4 committee saying it's the viewpoint of the medical
5 department that this is an adequate solution to their
6 waste pollution activities, waste management or it is not.

7 Q Did every plant have to report to the medical
8 department as to how it disposed of its waste? I'm
9 talking about the 50s now.

10 A In new manufacturing installations, in major
11 manufacturing changes, yes.

12 Q What about existing operations, did they have to
13 report on how they dispose of the waste? Did they report
14 to the medical department on how they dispose of their
15 wastes?

16 A No, but the medical department consulted with
17 these plants on -- maybe -- certainly not as formal as a new
18 plant operation or remodeled plant, but they consulted
19 with them on what the state regulations were, what the
20 federal regulations were coming up, and they were close to
21 knowing what the plant was doing as far as the current
22 wastes were concerned.

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WATER_PCB-SD0000062976

1 Q And your job was to bring this information to
2 the attention of the executive committee?

3 A Yes, sir.

4 Q Would you say that during the period of time
5 that you had this role, that the executive committee at
6 Monsanto was fairly informed of the waste disposal
7 activities of the company?

8 A That --

9 Q That the executive committee at Monsanto was
10 fairly informed of the waste disposal practices at
11 Monsanto?

12 A Yes, sir.

13 Q So that's something that you in your job would
14 have brought to the attention of the executive committee?
15 Is that right?

16 A Well, yes, and I'm sure also it was brought to
17 their attention by the division managers, by the heads of
18 engineering, heads of manufacturing.

19 Q How did you, in your role, bring it to the
20 attention of the executive committee?

21 A I can write them a memorandum and say here, I
22 received this proposition for an addition, say, to the

1 styrene plant, in the opinion of the medical department,
2 their plans for waste disposal are adequate and
3 sufficient.

4 Q And did you ever appear at any meetings of the
5 executive committee to report on waste disposal matters?

6 A Yes, sir. I don't know how often I appeared to
7 the whole committee, but I would appear before one or two
8 of them. I mean, I might go down to the executive
9 committee with the head of manufacturing for a division of
10 the company and say here's what we got on this plant at
11 Trenton, Michigan, for example.

12 Q What would you receive? Would you receive
13 anything in return, any response from your written reports
14 to the executive committee?

15 A Well, it really didn't work that way. We would
16 write to the executive committee and say we don't approve
17 of the way Trenton is talking about handling their
18 phosphoric acid waste. And then I would see a
19 correspondence from the executive committee to the
20 division manager under whose responsibility in Trenton,
21 Michigan it was and they'd say look, you've got to give us
22 more adequate information about your waste disposal

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1 procedures. I'd hear it that way.

2 Q Were these reports that you wrote, were they
3 made a part of the minutes of the executive committee?

4 A Well, when I would speak to one member of the
5 committee, it would not be part of the minutes. It would
6 be -- otherwise, it may very well have been in the minutes
7 of the executive committee.

8 Q So your written reports, let's say, to the
9 executive committee as a whole may well have been made
10 part of the minutes of the executive committee?

11 A Yes, sir.

12 Q Now, did you personally do any inspection of any
13 site on waste disposal issues?

14 A No, sir, I personally, I did not.

15 Q That would have been Garrett or Wheeler?

16 A Correct.

17 Q During what period of time did you have the
18 responsibility to report to the executive committee on
19 waste disposal matters?

20 A I thought it was sometime in the middle 50s
21 until 1974.

22 Q Did you personally do any inspections of any

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1 plant sites, industrial hygiene inspection, safety
2 inspections of any type?

3 A Did what? Did I personally do what?

4 Q Let's break it down into a time frame and let me
5 rephrase the question. I'm sorry.

6 From 1950 on, let's say from 1950 to 1960, did
7 you personally do any inspections of any plant site, any
8 Monsanto plant site, any type of inspection?

9 A Of a plant site, sure I went to the plant sites.

10 Q Did you actually conduct an inspection and study
11 of the site during your visit?

12 A No, sir.

13 Q Your visit would have been for what purpose?

14 A Again, dealing with waste --

15 Q No, no. As I understand, your testimony is you
16 did not conduct any inspections dealing with waste
17 disposal; is that correct?

18 A Well, I visited them. I saw the scrubbers at
19 Monsanto, Tennessee or Soda Springs Idaho. I saw the
20 treatment plant at Nitro, West Virginia. I saw other
21 areas where we did have treatment facilities. I didn't go
22 out and check to see what the effluent from this treatment

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1 plant had as far as waste material is concerned, how
2 efficient it was. If that's what you mean by inspection,
3 I did not do that.

4 Q Did you make any study at any of the plants as
5 to where any waste disposal material was taken off site?

6 A No, I did not visit any off-site landfills, if
7 that's what you're talking about.

8 Q Did you determine and visit any outfalls from
9 the residue of any waste treatment plants?

10 A I've seen them when they had fish living in
11 boxes, in cages at the outfalls of plants.

12 Q Do you know what I mean by "outfalls" ?

13 A Yes.

14 Q What do you understand that term to mean, sir?

15 A Well, when a material is not being used and
16 leaves the plant.

17 Q And may leave via pipe and empty into a stream
18 or something?

19 A Yes, sir.

20 Q Did you visit any of those outfalls?

21 A Yes, sir.

22 Q For what purpose?

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1 A I guess to inform myself of what they were
2 doing.

3 Q Let's deal specifically with Texas City. If we
4 can at this point. Do you recall visiting any outfalls at
5 Texas City from the Texas City plant?

6 A Yes, sir. They had an outfall at Galveston Bay
7 and they took me out there to show me people were fishing
8 off the Galveston Bay, off the dock there.

9 Q Who would have taken you out there?

10 A I beg your pardon?

11 Q Who took you out there?

12 A Well, whether it was Gilmore or whether it was
13 somebody in the manufacturing group, I can't tell you
14 which one it was, but I went out there. We talked about
15 it and said these are Monsanto employees who are days off
16 and are fishing out here.

17 Q Was Mr. Garrett with you usually on those trips?

18 A Not on that particular time, no, sir.

19 Q Did you visit any of the off-site locations
20 where waste from Texas City was deposited?

21 A No, sir.

22 Q Did you have any knowledge or were you informed

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WATER_PCB-SD0000062982

1 about where any of the waste material from Texas City was
2 transported off site?

3 A Yes, I did.

4 Q And how did you acquire that information?

5 A Whenever I went to a plant, I talked to the
6 manufacturing superintendent. I talked to the safety
7 department. I went through the plant inside -- all the
8 departments inside the plant and during the course of
9 those conversations, he would say we are shipping this to
10 the Eric site, for example. We're shipping styrene tars
11 or something like that to the --

12 Q Did you make an effort to determine what the
13 constituents were of the material that was shipped to
14 these various sites?

15 A What was in it, and they would say still
16 bottoms.

17 Q Would you know whether the materials were toxic
18 or not?

19 A Were caustic?

20 Q Toxic.

21 A Well, we examined -- we had toxicity tests run
22 on the material and from the acute point of view, it was

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1 moderately toxic, not particularly toxic as far as an
2 industrial compound was concerned.

3 Q When you say 'acute, acute as distinguished
4 from chronic?

5 A Yes, sir.

6 Q Was there any determination of the chronic
7 effect of these chemicals on the environment?

8 A No, sir.

9 Q Was there any study done of the accumulation
10 effect of these chemicals at the site that they were being
11 disposed of?

12 A I don't know what you mean.

13 Q Whether the chemicals would concentrate.
14 Bioconcentration, I think, was a term you used earlier.

15 A Well, there really weren't any -- no, there were
16 no studies taken of that. There weren't an awful lot of
17 organisms living in the waste disposal site.

18 Q Would it be fair to say that one of the reasons
19 that these sites were selected was because they were far
20 from potable water or from any significant site for
21 organisms?

22 A No. The reason they were selected was because

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1 it was our impression that they were safe to dispose of,
2 that they didn't leak. That the Beaumont clay at the
3 sites in Texas were state of the art in Texas. They were
4 approved by the Texas water quality board. There were
5 probably 1000 such sites around our Texas City plant, and
6 it was the common method of waste disposal at that time.

7 Q Was this something that you would have learned
8 from Mr. Garrett, or was this something you found out on
9 your own investigation?

10 A Oh, I guess I learned more from Garrett. More
11 from Garrett than my own investigation, yes.

12 Q In terms of the waste disposal practices at
13 Texas City, for instance, and what was done, would it be
14 fair to say that Mr. Garrett's knowledge would it be
15 greater and in more depth than yours?

16 A Much greater than mine, certainly.

17 Q Now, you indicated that you were not involved in
18 any studies, investigations on insurance matters. Do you
19 recall that?

20 A Yes, sir.

21 Q You testified you were not involved in
22 negotiating the placement of insurance; is that right?

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1 A That's correct.

2 Q And that would be whether it was a Travelers
3 policy or a Liberty policy?

4 A Or anybody's policy, yes.

5 Q Were you involved in any way directly in
6 handling claims?

7 A No. In handling the claims, I guess it came to
8 my attention that there were neighborhood cases where
9 there was people sprayed from a mist from one of our
10 plants. That would be reported by our dispensary to me or
11 our doctor down there to me and I would -- when that
12 happened, which was relatively rarely, I would bring it up
13 to the insurance companies and say here's what the
14 insurance department in our plant, in our central
15 insurance -- I'd say here's what the doctor at Texas City
16 told me or Chocolate Bayou told me. What do you know
17 about it? Or is this your baby?

18 Q And would the insurance department then deal
19 with whatever insurance carrier was on the risk at the
20 time?

21 A Presumably.

22 Q You didn't deal with the insurance company about

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1 the claims, did you?

2 A I didn't -- no, I did not.

3 Q You indicated earlier that there were certain
4 instances where you said that an insurance company covered
5 claims for pollution. Do you recall that?

6 A Yes, sir.

7 Q How did you know that?

8 A I guess word of mouth.

9 Q You didn't have anything directly from an
10 insurance company indicating that they did or did not
11 cover particular claims, did you?

12 A No, sir.

13 Q And you don't know, as to any claim, what the
14 actual decision of the insurance company was, whether it
15 was or was not, in fact, covered, do you?

16 A No, sir.

17 Q So you're just talking about things you may have
18 heard about these claims; is that correct?

19 A Well, yes, and it seemed that there was no more
20 correspondence about it or no more action from the
21 claimants that I heard of, so I thought they were disposed
22 of.

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1 Q But you don't know whether or not the insurance
2 company actually covered those claims, do you?

3 A No, I don't. It was my impression that they
4 did, though.

5 Q Impression from what people have said, people
6 told you?

7 A Yes, people in Monsanto, right.

8 Q Did you ever deal with anyone from an insurance
9 company directly on these claims?

10 A No, sir.

11 Q So you never saw anything from an insurance
12 company indicating that it did cover these claims; is that
13 correct?

14 A No, but I would -- oil spray, paint spray damage,
15 when I was at the Queeny Plant as a plant physician, a
16 worker would come in and say look, I've got all this spray
17 on my automobile, and I said well, talk to the insurance
18 people about it.

19 Q When you say "the insurance people," do you mean
20 the Monsanto insurance department?

21 A Yes, sir.

22 Q And you don't know who paid for that, do you?

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1 A No, but he got paid.

2 Q He got paid by somebody, but you don't know who
3 actually paid it?

4 A No, I don't.

5 Q Now, did you ever do any plant visits with any
6 representative of Liberty Mutual?

7 A Oh, yes.

8 Q And who would they be?

9 A Chuck Williams, Dr. Charles Williams.

10 Q Anyone else?

11 A I don't know the other names, but he was the
12 point man for them. He was the top representative.

13 Q He was the head of their industrial hygiene
14 department, wasn't he?

15 A Yes, sir.

16 Q Did these inspections deal primarily with worker
17 safety, industrial hygiene matters?

18 A Well, I don't know if I should say primarily.
19 It dealt both with the neighborhood cases, if any, and
20 also the working environment cases.

21 Q What visits do you recall that dealt with
22 neighborhood cases?

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WATER_PCB-SD0000062989

1 A Columbia, Tennessee.

2 Q Was that a fluoride situation?

3 A What?

4 Q Fluoride situation?

5 A That's correct.

6 Q Anywhere else?

7 A Soda Springs.

8 Q Fluoride?

9 A Yes, sir.

10 Q Anywhere else?

11 A Gosh, there were some others. They may come to

12 mind.

13 Q If they do come to mind, would you let me know.

14 A I certainly shall.

15 Q But the two you recall were fluoride situations,

16 weren't they?

17 A What?

18 Q The two you recall, Columbia and Silver Springs,

19 were fluoride situations; correct?

20 A That's correct.

21 Q And did you ever see the Liberty policy to

22 Monsanto, any Liberty policy to Monsanto, insurance

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1 policy?

2 A No, sir, I did not see any.

3 Q Do you know whether or not there was a fluoride
4 endorsement on any of the Liberty policies to Monsanto?

5 A I don't know.

6 Q Do you recall any visits with any Liberty
7 personnel to the Texas City plant?

8 A Yes, at the time of the Texas City explosion.

9 Q That was in 1947?

10 A Yes, sir.

11 Q After that, do you recall any -- specifically
12 recall any visits you had with any Liberty Mutual employee
13 to the Monsanto Texas City plant?

14 A Your voice dropped off at the end.

15 Q I'm sorry, and I apologize. The question wasn't
16 very clear either. Other than the Texas City explosion
17 situation, do you recall any visits that you had to the
18 Texas City plant with any employee of Liberty Mutual?

19 A I don't recall.

20 Q Do you recall when you were a member of the MCA
21 general safety committee that part of the duties was to
22 develop safety data sheets?

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1 A Yes, sir.

2 Q And how are the chemicals selected that would
3 have these safety data sheets?

4 A I would say it all depended on how many
5 inquiries they might have gotten from their members or
6 individuals who were not members who would write in and
7 say, what do you know about hydrochloric acid. And if
8 they got enough of those, they'd say well, let's put
9 hydrochloric acid on our agenda for writing a safety data
10 sheet, and they'd look around to the members of the
11 committee and say who will we have do this.

12 Q And were these safety data sheets then assigned
13 to various individuals to develop?

14 A That's right. Yes, sir.

15 Q Did the safety data sheets have a section on
16 waste disposal?

17 A They may have later on. The early days they did
18 not, as far as I can tell.

19 (Kelly Exhibit 41 identified.)

20 BY MR. MANTA:

21 Q I show you a document marked for identification
22 as Kelly Number 41. It purports to be a copy of the

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1 minutes of the joint meeting of the general safety
2 committee and medical advisory committee under the date of
3 January 19, 1948. Do you see that?

4 A Yes, sir.

5 Q Were these minutes of the various meetings, were
6 they prepared regularly after each meeting?

7 A Were they prepared right after --

8 Q Was it usual to get minutes of a meeting?

9 A Was it usual to get the minutes after the
10 meeting?

11 Q After a meeting. Were minutes usually kept of a
12 meeting?

13 A Oh, yes, I would say within two weeks we'd get
14 them.

15 Q Were these minutes prepared in the regular
16 course of the operation of the committee; is that right?

17 A That's correct.

18 Q I'd like to refer you to the third page, if you
19 would. Before I do, do you see in terms of the attendees
20 that you were present at that meeting, Dr. Kelly?

21 A That's correct.

22 Q Let's go to the third page, if you will, section

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1 6, "Waste Disposal." Do you see that, sir?

2 A Yes.

3 Q Let me read the first sentence to you. It says
4 "Arnold reported verbally on his survey of the waste
5 disposal section and the difficulties in preparing a model
6 section." Do you see that?

7 A Yes, sir.

8 Q Do you recall what difficulties he was talking
9 about in preparing a model section on waste disposal?

10 A No, I don't.

11 Q Does this reflect your recollection that in the
12 1940s, or at least as of 1948, there was a waste disposal
13 section for the safety data sheets?

14 A I don't know if that said there was one or they
15 were talking about it, a survey of the waste disposal
16 section. I don't know if that was a preliminary plan to
17 have one or not.

18 Q Do you recall at the time that there were waste
19 disposal sections but Arnold's assignment was to get a
20 standard model kind of a section for waste disposal? Do
21 you recall that?

22 A I don't recall it. I don't know which of the

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1 companies Arnold was in when he was in the general
2 safety. I don't think he was on the medical advisory
3 committee.

4 Q What committee were you on?

5 A Medical advisory.

6 Q Medical advisory committee. Did Monsanto have a
7 representative on the general safety committee?

8 A Yes.

9 Q Who would that have been, do you recall?

10 A I beg your pardon?

11 Q Who would that have been?

12 A I don't know who.

13 Q Would it have been Mr. Gorbel, do you think?

14 A Well, he wasn't listed on this one.

15 Q Do you see any other Monsanto employee listed as
16 an attendee at this meeting?

17 A Looks like I'm the only one. I don't know if
18 any of these other people are Monsanto employees or not.
19 Gorbel was working for Monsanto at that time, but I don't
20 see him listed on here.

21 Q Do you recall a history of the industrial
22 hygiene department at Monsanto prepared by Mr. Henshaw?

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1 A Yes.

2 Q That was prepared after you left?

3 A That's correct.

4 Q Were you consulted on material to go into that
5 document?

6 A He may have called me for dates or something
7 like that, but I certainly didn't see much about the
8 report in either a draft stage or final stage.

9 Q Do you have any recollection as to whether or
10 not you were interviewed concerning the preparation of
11 that document?

12 A I have no recollection, but I said I might very
13 well have had a telephone call from Henshaw.

14 Q But you have no recollection of that?

15 A No, sir.

16 Q Do you recall a joint Liberty-Monsanto
17 inspection of some of the plants in 1950?

18 A Yes, sir.

19 Q You did not take part in that inspection; is
20 that correct?

21 A I personally did not. Members of the medical
22 department did. Wheeler took part in the inspection. I

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1 don't know if Garrett did.

2 Q Did you ever see any document emanating from
3 that inspection?

4 A You mean the results of the --

5 Q Yes.

6 A I feel sure I did, but I have no recollection of
7 what I saw or what the details were. I remember
8 correspondence about the formation of the committee that
9 our president, Mr. Rand, who was on the board of directors
10 of Liberty, said sure, we think you people ought to go
11 around with some of our individuals, and I know he and
12 Wheeler -- Wheeler and Liberty Mutual people went around to
13 all the plants, I believe, over a period of six months.

14 Q Do you recall, how long they spent at each of
15 the plants?

16 A I thought four or five days.

17 Q Do you recall -- did you ever receive any report
18 from Mr. Henshaw about the inspection -- I'm sorry, from
19 Mr. Wheeler about the inspection?

20 A I don't know -- I don't recall having seen a
21 report. I don't know who would issue the report. I don't
22 know who was the chairman of the committee, whether it was

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1 somebody at Liberty or somebody at Monsanto. I don't
2 know.

3 Q Do you recall regardless of who was the
4 chairman, whether Mr. Wheeler reported to you concerning
5 what was done at the inspection and what the results were?

6 A Well, he reported to me orally, sure.

7 Q And do you recall what he said to you?

8 A Well, we went through all our plans. We gave
9 him a pretty good going over and everybody seemed happy.
10 I don't think there were any earthshaking changes that we
11 made in our procedures.

12 Q Was there ever -- you have a recollection of him
13 saying that. Do you recollect him saying anything else?

14 A No, sir, I don't.

15 Q Do you recollect any written report from
16 Mr. Wheeler to you?

17 A No, sir. I don't recall ever seeing a final
18 written report or even a draft copy of a report.

19 Q Do you recall ever seeing any type of report
20 from anyone concerning this inspection?

21 A No, sir.

22 Q And basically what you know about this

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1 inspection is what you told us here today about what
2 Mr. Wheeler told you; is that right?

3 A Well, I know when it was set up. I know the
4 details of how it was set up and when it was set up.

5 Q Would you tell us when it was set up and why?

6 A I said it was a communication between Rand, our
7 president, and some of the top people at Liberty Mutual
8 and I saw a memorandum about that that they were stating
9 who was going to be -- what representatives were going to
10 be on it.

11 Q Who issued that memorandum?

12 A I don't know, but I've seen it, I think, in
13 preparation for this deposition here.

14 MR. MANTA: If there is, I'd like to see it
15 because I request that it be produced. I have not seen
16 any such memorandum.

17 BY MR. MANTA:

18 Q Is there any other memorandum that you saw in
19 connection with this inspection?

20 A No, sir.

21 Q And what did the memorandum say, do you recall?

22 A Well, it just says that -- I'm not sure it was

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1 at the request of Liberty -- it must have been, but I'm
2 going to have to assume that, that somebody brought it up
3 to Rand. He said well sure, we'll have a group go around
4 with you people and we'll go to all our plants and let
5 everything hang out and tell you what we're doing and what
6 our problems are, and you can see for yourself. And so
7 they did.

8 Q Had there been a problem before this in getting
9 access to the Monsanto plants?

10 A Not that I knew of.

11 Q Do you know, if there was no problem before, why
12 this inspection was necessary?

13 A Not on Monsanto's part. I don't know if there
14 was a problem from Liberty Mutual or not.

15 Q Do you know whether or not Liberty had to sign a
16 confidentiality agreement before Monsanto would agree to
17 the inspection?

18 A I don't know but that wouldn't be under my
19 responsibility.

20 Q Have you ever seen this confidentiality
21 agreement?

22 A No, sir.

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1 Q How long was Mr. Rand on the board at Liberty,
2 do you know?

3 A I don't know.

4 Q There were other -- at various times other
5 officials of Monsanto were on the board of Liberty,
6 weren't there?

7 A I don't know. Rand was the only one I knew.

8 Q Do you know who Mr. Rand dealt with at Liberty
9 in connection with setting up this inspection?

10 A No, sir.

11 Q Was there ever any other inspection like this
12 after 1950, to your knowledge?

13 A After what?

14 Q Was there ever any other similar inspection,
15 joint inspection by Liberty and Monsanto after the 1950
16 inspection?

17 A I don't think there was as formal a program as
18 this one, but I do know that Williams and Wheeler and/or
19 Wheeler and Garrett went around to various plants. I know
20 that I went to some plants with Williams on specific
21 problems, but there was no full-blown inspection,
22 organized inspection that I know of.

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1 Q So the other inspections would have been the
2 type of loss prevention inspections that were regularly
3 carried on by insurance companies?

4 A Well, I don't know what the regular inspection
5 insurance company carrier is.

6 Q Why don't you tell me about the inspections that
7 you were involved in with Liberty.

8 A Well, we had our bladder problem.

9 Q The PAB problem?

10 A Yes. Liberty Mutual went around to the plants
11 where they were manufactured and used the
12 para-aminobiphenyl.

13 Q And that's because Liberty was the workmen's
14 compensation carrier; isn't that right?

15 A I suppose, but it also was that in Europe there
16 were cases of bladder carcinoma. They occurred in tire
17 manufacturing companies and Liberty Mutual was concerned
18 about the fact that there might be cases in -- the workers
19 in the Big Three and the tire people.

20 Q But as far as their inspection, it was as to the
21 Monsanto operation, wasn't it?

22 A That's correct.

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1 Q What other type of inspection that you were
2 involved with Liberty?

3 A I beg your pardon?

4 Q What other type of inspection where you were
5 involved with Liberty?

6 A I'm trying to think. We had them pretty
7 frequently in this one memorandum where I said -- the
8 memorandum in '75 I wrote to Roush.

9 Q 1975?

10 A Yes.

11 Q That would have been Travelers, not Liberty?

12 A Yes, but that's when the memorandum was written
13 and I was quoting the problems that we had and they were
14 ongoing problems in our phosphorus plants where they had
15 dust and fluoride and SO₂.

16 Q I don't mean to cut you off. My question has to
17 do with any specific inspections that you have
18 recollections of, not just the general nature of what they
19 may have inspected. I'm talking about anything you
20 specifically have recollection of that you were involved
21 with.

22 A No, sir, I don't recall any specific ones. I

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1 know there were some but I don't know specifically which
2 areas.

3 Q Sitting here today, can you tell us anything
4 about any other -- specifically about any other inspection
5 you may have been on with Liberty?

6 A I may have been what?

7 Q Can you tell us anything specifically about any
8 inspection that you may have been on with Liberty Mutual
9 employees?

10 A I was specific about the PABs.

11 Q That's right.

12 A I don't know any other specific cases, but it is
13 my recollection that there were other cases, other types
14 of inspections on isolated problems at various individual
15 plants because I know that during the years that I was at
16 Monsanto, I was fairly frequently in contact with the
17 Liberty Mutual people. In fact, when we hired Jack, we
18 sent him up to Liberty Mutual for several weeks, I
19 believe.

20 Q Mr. Garrett testified about that in his
21 deposition.

22 (Pause.)

1 BY MR. MANTA:

2 Q Dr. Kelly, we were speaking off the record about
3 the memorandum that you talked about setting up or
4 discussing the teams who were going to conduct the 1950
5 Liberty/Monsanto inspection. And in discussing it with
6 Mr. Bray, there's a question as to whether that's a
7 separate document or whether that was part of the Henshaw
8 report. Do you have any recollection --

9 A It was not a separate document. I thought I
10 mentioned before that it was part of a larger document,
11 not just devoted to Rand and the Liberty Mutual inspection
12 team.

13 MR. MANTA: Mr. Bray, to the extent there is a
14 document separate and apart from the Henshaw report, I'd
15 like it produced because we have looked and made requests
16 at various depositions for any documentary support for
17 that section of Mr. Henshaw's report, including any report
18 that may have allegedly emanated from Liberty or from
19 anyone else. We requested that on a number of occasions
20 and we have not received it.

21 MR. BRAY: Let me say, I'm listening to the back
22 and forth on this and trying not to get involved in it,

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1 but what it sounds like to me is a piece of the Henshaw
2 report or a reference to something in the Henshaw report.

3 MR. MANTA: If that's the case, that's fine.
4 You can let me know and that will be fine, but I want to
5 let you know I've requested now and we've requested at
6 other depositions that if there are any other documents,
7 either in connection with this inspection, either in the
8 setting it up, the confidentiality agreement, which we
9 specifically asked for, any reports resulting from the
10 inspection, we would like to have those produced because
11 we have not seen them.

12 MR. BRAY: I understand. To my knowledge, there
13 are no unproduced documents relating to this and I'll go
14 back and look. I think there were a number of documents
15 produced as hard copy by the Defendants in the seven-day
16 lists, documents for seven-day lists. I can go back
17 easily and check those, but I think I can identify what
18 has been described, and I think it's a piece of what I
19 think of as the Henshaw report.

20 MR. MANTA: I'm aware of the Henshaw report, but
21 what I requested is other data and we have not seen any
22 other data, any other documents dealing with this

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1 so-called inspection other than Henshaw's report.

2 MR. BRAY: For your information and use here
3 today, I know of no unproduced documents on that subject.

4 MR. MANTA: Well, if you know of any produced
5 documents, because there may be a question as to whether
6 or not it is produced or not, because we obviously -- it
7 would be something we would obviously look very carefully
8 at and have not seen.

9 BY MR. MANTA:

10 Q Let me refer you to Kelly Exhibit Number 32,
11 Dr. Kelly.

12 A Yes, sir.

13 Q Now, Dr. Kelly, I'm going to again refer to the
14 second paragraph which I believe has already been read
15 into the record so I'll just have you -- if you could look
16 it over, read it to yourself.

17 Is it fair to say on the basis of this report
18 that the only way it was determined that the TBA had an
19 effect on these animals was by sacrificing and
20 pathologically sectioning the animals?

21 A I do not know if there was pathology done.
22 Usually in acute studies, the animal dies before -- the

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1 choice of pathology that anybody dies -- I mean, it's
2 congestion of the various viscera. There may be
3 hemorrhages in the viscera so.

4 Q Well, do you know whether or not in this case
5 they were sacrificed or whether or not they died from the
6 acute exposure?

7 A I can't make it out from here.

8 Q But in any event, what is reported as the effect
9 of the TBA on the animals was information gained from
10 pathological investigation; is that correct?

11 A Toxicological investigations?

12 Q Pathological investigation, I believe it says
13 here. Doesn't that include cutting up the organs of the
14 animals?

15 A Yes, but it doesn't include sticking a piece
16 under a microscope. It doesn't include putting a slide of
17 tissue under a microscope.

18 Q Isn't it true, though, you may have a dose to an
19 animal and you may not be able to tell clinically of any
20 effect on the animal but the only way you can tell is
21 through a pathological examination?

22 A Yes, but you may have a dose that kills an

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1 animal in 20 minutes and he's dead before there's any
2 pathology that's discernible.

3 Q Even if there's not a fatal dose, that an
4 animal, including human beings, can receive a dose, show
5 no clinical affects but on a pathological study, show
6 affects from the exposure to the toxic substance; isn't
7 that correct?

8 A You lose me on your last half of the question.

9 Q If a human or any other animals are exposed to a
10 toxic substance, isn't it true that there may be no
11 clinical signs of an adverse effect, but pathologically
12 after studies of the organs, there can be an adverse
13 effect on the organs found out?

14 A Yes, sir, but that is by slides, microscopic
15 examination, which does not usually occur in an acute type
16 of testing because the condition is overwhelming, are dead
17 before you've got the opportunity to see the changes in
18 the microscopic structure of the various organs.

19 Q I understand that. But on paragraph 2 of Kelly
20 32 this, in fact, talks about a pathological
21 investigation, doesn't it?

22 A Yes, but it doesn't say what type. In other

1 words, here are these animals, took the very corrosive
2 material by mouth. It showed effects on the lungs, liver
3 and intestinal tract.

4 Q How would you determine that other than by
5 examining it under a microscope?

6 A Well, you look at it. If you --

7 Q A gross specimen would be able to tell?

8 A Yes. If you had an irritating substance like
9 this is, you look down the throat and look at the stomach,
10 there's corrosion in it.

11 Q Would you agree at a dose lower than this acute
12 dose that there would be microscopic damage to these
13 organs before there was gross damage discernible?

14 A I don't think there would in this case because
15 the gross damage is the corrosive action. If you didn't
16 have any corrosive action, I don't think you'd have any
17 other problems with it.

18 Q I'm not talking specifically about TBA. I'm
19 talking about any exposure, that there's going to be
20 microscopic damage, pathological damage before there is
21 either gross damage visible or death?

22 A Yes, there could be situations like that.

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1 Q Now, the second sentence of this paragraph says
2 "The same type of pathology was noted following skin
3 application." Does that indicate to you that the material
4 was absorbed through the skin and caused the same
5 problems, acute problems?

6 A No. I think that's unclear because the same
7 type of pathology, if that means the corrosion, if that
8 what we're talking about, corrosion on the intestinal
9 tract by having contact with the intestinal tract,
10 corrosion on the lungs by inhaling the stuff, if that's
11 the pathology they're talking about, that's one thing. If
12 they're talking about problems with the liver, which this
13 material does not come in contact with, that's a different
14 ballgame.

15 And if -- it mentions here "the same type of
16 pathology was noted following skin application." I find
17 that hard to explain because I don't have enough facts.

18 Q How would the material, TBA, affect the lungs
19 here?

20 A I don't know how it was given. It says here
21 it's extremely toxic from the standpoint of inhalation in
22 concentrated form. That's in paragraph 1. So it was

1 inhaled.

2 Q How would it affect the intestinal tract, then?

3 A It was swallowed.

4 Q Aren't those two different pathways?

5 A One, you inhale and the other, you swallow it.

6 Q But if it's inhalation, how would it affect the
7 intestinal tract, and how would it affect the liver? If
8 you're talking about merely contact, corrosive contact
9 effect and not a systemic effect, how would the exposure
10 affect the lungs, the liver and the intestinal tract?

11 A Well, first of all, it affects the lungs by
12 being inhaled. That's number one. Two, it affects the
13 intestinal tract by being swallowed.

14 Q But we're only talking about inhalation here, it
15 said.

16 A He said it is extremely toxic from the
17 standpoint of inhalation.

18 Q If the only exposure is through inhalation and
19 the only effect is a contact corrosive effect, how could
20 it adversely affect the liver and the intestinal tract?

21 A Well, I believe that we're talking about two
22 different types of examination here.

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1 Q You think there may be ingestion as well as
2 inhalation here?

3 A Yes. Usually in an acute package of toxicity,
4 inhalation, oral administration, skin contact and eye
5 contact, so if I were to see what the experiment was with
6 TBA, I could clarify it a great deal. I don't know what
7 he talked about, how he got the liver involved on an acute
8 study because by the time it gets around to affect the
9 liver, it has to be absorbed and affect the liver and
10 cause pathology from a microscopic point of view. Usually
11 the animal is dead by then and the pathological process
12 ceases.

13 Q It wouldn't have to be a systemic effect then?

14 A If it did, but I don't know what effects the
15 pathology was doing on the liver. I did say the kidneys
16 were not involved.

17 Q Let's refer, if I can, to Kelly Number 38.

18 A Yes, sir.

19 Q This is the minutes of the meeting of the
20 medical advisory committee dated October 5, 1960. Do you
21 see that, sir?

22 A Yes, sir.

1 Q You were indicated as present and as the
2 chairman of that meeting. Do you recall?

3 A Yes, sir.

4 Q Do you recall the meeting, sir?

5 A I don't recall this specific one. They start
6 off when I was chairman with quarterly meetings.

7 Q Now, item 1 -- these minutes, they were again
8 prepareds a regular part of the business of this
9 committee?

10 A Yes, sir, but I don't recall the minutes being
11 in this form where it's not a verbatim account but
12 intended to reveal the thinking of the committee on the
13 matter and I don't think this was circulated to the
14 committee in order to see what their thinking was, I don't
15 think they sent these minutes to me and said is this what
16 you said? Is this what you meant by this stuff?

17 Q Let's put aside for one moment accuracy, whether
18 or not it's accurate. Was it part of the regular course
19 of this committee to have minutes of their meetings?

20 A Yes.

21 Q And these are the minutes of the meeting of
22 October 5, 1960; is that correct?

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1 A - Well, no, it isn't correct because it's not the
2 minutes. It's a secretary's estimation of of what the
3 thinking of the committee was, not really what they said
4 or what they did. It was just the secretary said this is
5 what I think Kelly meant when he was talking about this
6 particular problem.

7 Q Doesn't the heading of this indicate minutes of
8 meeting?

9 A Sure it does.

10 Q And if you look at item 1 under it, it says
11 "minutes of the May 19, 1960 meeting were approved." Do
12 you see that?

13 A Yes, sir.

14 Q Do you recall communicating to the secretary any
15 objection as to the contents of this document?

16 A No, sir.

17 Q And do you recall whether or not at the next
18 meeting they were, in fact, they were approved at the next
19 meeting?

20 A I don't remember.

21 Q You don't remember objecting to these minutes,
22 do you?

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1 A No, sir.

2 Q In the regular course of the way these minutes
3 were kept, they would have been submitted for approval at
4 the next meeting, wouldn't they?

5 A Yes, sir.

6 MR. MANTA: Can we take just about five minutes
7 because I may be pretty much wrapped up at this point.

8 (Recess.)

9 BY MR. MANTA:

10 Q Dr. Kelly, I just have a few more questions.

11 A Fine.

12 Q Did you ever visit the North 80 site?

13 A No, sir.

14 Q Did you ever visit the Brio site?

15 A No, sir.

16 Q Did you ever visit the MOTCO or the Wye site?

17 A No, sir.

18 Q Did you ever visit the South 20 site?

19 A No, sir.

20 Q So you never conducted any investigations
21 personally as to any of those sites, did you?

22 A No, I did not.

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1 Q Do you recall the name of any Liberty employee
2 who you dealt with other than Chuck Williams?

3 A No. There was a man in St. Louis who was in
4 administration of Liberty Mutual. He's not a scientist,
5 to the best of my recollection.

6 Q Would that have been Les Lancaster?

7 A That is he, yes.

8 Q And he was the sales rep at the St. Louis
9 office; right?

10 A He's what?

11 Q The sales rep for the Monsanto account?

12 A He was? Is that right?

13 Q Do you recall any technical employees of
14 Monsanto, the loss prevention or the industrial hygiene
15 department, other than Chuck Williams who you may have had
16 any dealings with?

17 A No, sir, I don't remember their names.

18 MR. MANTA: That's all I have. Thank you.

19 (Discussion off the record.)

20 EXAMINATION

21 BY MS. SCHIFFER:

22 Q Dr. Kelly, I'm Lois Schiffer and I'm a lawyer at

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1 the law firm of Nussbaum & Wald. I represent certain
2 underwriters at Lloyd's of London in this case. My
3 questions will be here and there since I want to try not
4 to duplicate questions that you've already been asked.

5 This case is presently scheduled to go to trial
6 in October of 1993. Would you be available to come to
7 that trial, Dr. Kelly?

8 A Yes, I will.

9 MS. SCHIFFER: I want to note for the record
10 that this deposition is being taken as part of the Trial
11 Group 1 aspect of this case, which relates to five of the
12 sites in this case, and the Defendants reserve the right
13 to take your deposition further as it relates to the other
14 sites in this case.

15 MR. BRAY: As we've said on a number of prior
16 depositions, that's not a position that the Plaintiff
17 agrees with.

18 MS. SCHIFFER: I want to note for the record
19 that that is Defendants' position and we believe it's
20 sustained by orders of this Court.

21 BY MS. SCHIFFER:

22 Q Dr. Kelly, I'd like to invite your attention

1 again to Kelly Exhibit Number 38 in this case which are
2 the minutes of the Manufacturing Chemists Association,
3 medical advisory committee meeting, dated October 5, 1960,
4 and I'd like to invite your attention to page 6 of those
5 minutes, please.

6 A Yes.

7 Q Do you note under the date October 7, 1960
8 there's a line that says "minutes subject to approval"?

9 A Yes.

10 Q Does that note refresh your recollection that
11 this is a draft of minutes of that meeting?

12 A Well, yes, this is a draft of the minutes, but I
13 have to say that the secretary did not say these are
14 verbatim accounts of the minutes but it's a description in
15 her words of what the general thinking of the committee
16 was on this particular matter. In fact, she says that on
17 page 1.

18 Q Were the minutes of the medical advisory
19 committee meetings kept verbatim or were they indeed
20 minutes in the format that you see here?

21 A This is the first time I ever remember seeing
22 something like this. I thought they were kept more or

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1 less verbatim.

2 Q In your capacity as chair, would you have noted
3 if these were minutes that were not kept in the usual
4 format for minutes?

5 A To the best of my recollection, I do not recall
6 that particular secretary note on other minutes of this
7 committee.

8 Q Does the form of these minutes look the same as
9 the form of minutes of other meetings of this committee?

10 A No, it really doesn't. They sort of just -- the
11 other ones talked about almost what the majority view of
12 the committee was rather than attributing statements to 15
13 people, individual members of the committee.

14 Q But you regard these as more accurate than the
15 usual?

16 A I beg your pardon.

17 Q Would you regard these minutes as more detailed
18 and more accurate than usual minutes of these meetings?

19 A Well, there are two statements. One, they're
20 more detailed, and I'm not sure that they're more
21 accurate. I don't know if she reflects the thinking
22 correctly of 15 different people there.

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1 Q Would you say they're equally accurate as the
2 usual minutes?

3 A They're equally accurate as other minutes?

4 Q Correct.

5 A I just don't remember. I mean, I don't have
6 that much recollection of what each of these people were
7 thinking.

8 Q Do you believe this accurately reflects what you
9 thought and what you said?

10 A Well, let's see. I have to decide what we mean
11 by industrial problems in environmental health. Nobody
12 really said what this is that I talked about what Hull
13 could do. I don't know if the top statement on page 3 is
14 correct, if that accurately reflected my thoughts. I
15 think if industry could raise the price of its
16 commodities, it could reduce the pollution level. I don't
17 know if that's a realistic statement or not or if that
18 reflected all my thoughts in 1960 because there are some
19 things, no matter how much money you put into it, you
20 can't cure it.

21 Q Would it have reflected what you said at that
22 meeting, Dr. Kelly?

1 A What?

2 Q Would that sentence have reflected what you said
3 at that meeting, Dr. Kelly?

4 A It may or it may not. I don't really know and
5 there may be stuff left out that would explain more than
6 this bold statement.

7 Q Dr. Kelly, as chair of the committee, would you
8 have reviewed the minutes of a meeting before the next
9 meeting?

10 A Probably, but this didn't look like it was going
11 to be a big deal come out in this meeting. I'm looking
12 back at it 30 years. I don't know what we accomplished at
13 that meeting.

14 Q If the minutes would have been inaccurate, would
15 you have raised it at the next meeting and corrected the
16 minutes?

17 A Yes.

18 Q To your knowledge, did you correct these minutes
19 at the subsequent meeting?

20 A No, I didn't.

21 Q Dr. Kelly, were you a member of any
22 organizations that were involved in industrial health or

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1 hygiene?

2 A Yes. I was a member of the American Industrial
3 Occupational Medical Association. I was.

4 Q Could you repeat the name, please, the
5 American --

6 A The Occupational Medical Society, I guess it
7 was, and there was another, American Academy of
8 Occupational Medicine. I wasn't involved in any
9 industrial hygiene association. I was involved in the
10 medical committee of the American Petroleum Institute and
11 the medical committee of National Agricultural
12 Manufacturers Association. I guess that's it.

13 Q I'd like to go back through the list and have
14 you tell me the years that you were either a member or
15 involved in each of these organizations. The first is the
16 American Occupational Medical Society.

17 A Oh, gosh, 1938 to '65 or something like that.

18 Q Was that organization founded before 1938?

19 A Yes.

20 Q Do you know approximately when it would have
21 been founded?

22 A I thought it was founded in the '20s sometime.

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1 Q. How about the American Academy of Occupational
2 Medicine, when were you involved in that organization?

3 A It was founded in the '50s. I think I stayed
4 with that until I retired from Monsanto.

5 Q You joined it when it was founded?

6 A Yes.

7 Q When were you a member of or involved with the
8 medical committee of the American Petroleum Institute?

9 A About 1958 when we took over and Monsanto
10 acquired Lion Oil Company.

11 Q And until approximately what year were you
12 involved with that organization?

13 A I beg your pardon?

14 Q Until approximately what year were you involved
15 with that organization?

16 A Until we sold Lion Oil, which was, I think, in
17 the mid-'60s.

18 Q And the last one you listed was the medical
19 committee of the American Manufacturers Association?

20 A National Agricultural Manufacturers Association.

21 Q During what years were you involved with or a
22 member of that committee?

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1 A '60s and '70s.

2 Q Did you attend meetings of each of these four
3 organizations?

4 A Yes, I did.

5 Q Could you tell me approximately how frequently
6 those meetings occurred.

7 A Once a year for the societies and conceivably
8 once or twice a year for the committees.

9 Q Did you attend seminars and conferences that
10 were held by the societies and the committees?

11 A Not too often.

12 Q Did you attend them at all?

13 A I may have attended isolated ones. I didn't
14 make it a routine habit of going to any of their seminars
15 once a year or something like that. I didn't do that.

16 Q Do you remember the subject matter of any of the
17 seminars that you attended?

18 A Gosh, I don't remember. They obviously didn't
19 make a great impression on me.

20 Q What was the purpose for which you were involved
21 with the four organizations that you've listed?

22 A Well, one, the American Petroleum Institute, I

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1 didn't know much about oil refineries or the oil business,
2 so I thought I'd go along and see what I could find out.
3 The agricultural chemical manufacturers, I went there
4 because I thought I could learn from them. After all, we
5 were relatively recent in the agricultural business, and I
6 went there for self-education. And the others were just
7 plain old industrial medical societies.

8 Q Was worker safety one of the subjects that was
9 discussed by these organizations?

10 A Yes.

11 Q Did you participate in those discussions?

12 A I'm sure I did. I don't recall what I had to
13 say about it.

14 Q Did any one of these four organizations publish
15 a journal or newsletter?

16 A They didn't publish journals. They did have
17 newsletters.

18 Q Did each of the four have a journal?

19 A Nobody had a journal. Newsletters they may have
20 had. I don't recall doing much with it.

21 Q Would you have reviewed those newsletters?

22 A Oh, I'd see them and pitch them.

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1 Q But you would look at them?

2 A Yes, I'd look at them.

3 Q Was participation in these organizations a way
4 of keeping up with developments in the field of industrial
5 medicine?

6 A Well, the specific field, for example, the
7 specific field of petroleum chemicals, that American
8 Petroleum Institute was a good source of information and
9 the same thing with the Agricultural Chemical
10 Manufacturers Association.

11 Q What else did you do to keep up in the field of
12 industrial medicine?

13 A Well, we subscribed to the leading journals in
14 the English language. There are about three in the United
15 States and two in England and I read those. And Wheeler
16 and Garrett kept up with the industrial hygiene part, and
17 they talked to me about anything that was relevant to --
18 might be relevant to us, to Monsanto as a company.

19 Q Did you attend any seminars, apart from those
20 given by the four organizations you've just outlined?

21 A Oh, I'm sure there have been isolated seminars,
22 but I don't recall the names or the dates at the present

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1 time..

2 Q Did World War II have an impact on the field of
3 industrial medicine?

4 A Yes, a pretty big one.

5 Q Would you describe that, please.

6 A Well, all the defense plants seemed to have all
7 the money in the world, and they were able to do things
8 that the private employers did not seem to find money
9 for. So there also were problems that occurred at the
10 ammunition plants that made it a part that people --
11 individual monitoring of workers at these various chemical
12 warfare plants.

13 Q I'd like to go back through each of those
14 items. You say that the defense plants had all the money
15 in the world. What did they use that money to do in
16 regard to industrial medicine?

17 A Oh, they hired more doctors who were happy to do
18 work in the defense plants, rather than go into the
19 service. They paid much more attention to the industrial
20 hygiene, which was just a struggling offshoot of
21 occupational medicine before World War II. And I think
22 they just gave added impetus to the individual monitoring

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1 of the workers' environment as well as their biological
2 fluids.

3 Q Did you keep abreast of the information that was
4 developed as a result of those World War II experiences?

5 A Abreast during that time or afterwards or --

6 Q Both during and after or either during and
7 after.

8 A I beg your pardon?

9 Q What about during World War II?

10 A Not too much. We had a couple of seminars in
11 the chemical warfare service. We had more than a couple.
12 Quite a few in the four years I was with them, and the
13 last part of the war I was associated with a research
14 group at Edgewood Arsenal and I think I kept abreast
15 pretty well then. Following, the amount of papers dropped
16 off a great deal -- the amount of publications dropped off
17 quite a bit when the doctors left the service or left the
18 defense plants.

19 Q Was the learning from that experience applied at
20 chemical companies after the war?

21 A I think so. Not that they learned anything from
22 the Army, but there was an impetus towards occupational

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1 medicine along various fronts, especially the examination
2 part and in the atmospheric sampling during the war, and I
3 think that was applied to piecetime activities.

4 Q Did you apply those steps at Monsanto?

5 A Yes, we hired one of the Army's industrial
6 hygienists. That's where we got Wheeler. I'd say we were
7 in the forefront of occupational medicine. We were as far
8 up to scratch as defense industries were.

9 Q Did you undertake atmospheric sampling?

10 A When we got Wheeler, we did.

11 Q When was that?

12 A '47, I think; '46 or '47.

13 Q To your knowledge, was atmospheric sampling
14 undertaken at the Texas City plant?

15 A Yes, sir, they were -- not sir. We did, at Texas
16 City, evaluations fairly frequently, not routine as we did
17 later on when OSHA came in.

18 Q In what year was OSHA enacted? In what year was
19 OSHA passed?

20 A '73 or '74.

21 Q And what atmospheric sampling did you do at the
22 Texas City plant before OSHA came into place?

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1 A Occasional benzenes. We did some on styrene.
2 We did some on cyanide.

3 Q On anything else?

4 A I beg your pardon?

5 Q On anything else?

6 A I don't think so.

7 Q How did you conduct -- did you personally conduct
8 atmospheric sampling at the Texas City plant?

9 A No. Wheeler or Garrett did. I'm not an
10 industrial hygienist.

11 Q Did you monitor the results?

12 A Yes.

13 Q And against what standard did you measure the
14 results for each of the chemicals that you've mentioned?

15 A Well, there were standards approved by the
16 American Council of Government Industrial Hygienists.
17 This was a self-appointed group composed of federal, state
18 and city industrial hygienists and academic people from
19 industry were excluded. These people took it upon
20 themselves to develop the standards and when OSHA came
21 along, they adopted very many of the standards of this
22 group.

1 Q Was there at any time between 19 -- strike
2 that.

3 Approximately when did the monitoring that --
4 the sampling that you have described begin at Texas City?

5 A '60s, I think. I'm picking that date pretty
6 much out of the air. I'm not certain of the time.

7 Q Let me go back for a minute, Dr. Kelly. You
8 stated that atmospheric sampling was one of the items that
9 came about during World War II; is that correct?

10 A That's correct.

11 Q Did Monsanto use it at any time approximate to
12 World War II?

13 A When you say "approximate," is that before World
14 War II?

15 Q Let's just say after World War II.

16 A We used it in isolated cases where there would
17 be a question of a possible problem at a specific
18 location, and we'd want to know what the level of any
19 particular contaminant was at that particular plant at
20 that particular department or over that pump.

21 Q And what you've just described, its sporadic
22 use, is what was the case at the Texas City plant?

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1 A- Yes, it wasn't routine. We didn't run it every
2 week or every six months or so as we did later -- as was
3 done later. In '75 we had more industrial hygienists and
4 OSHA had definite directives as to how often you should
5 test areas.

6 Q Did there come any time after World War II but
7 before 1975 when Monsanto conducted atmospheric sampling
8 more routinely at the Texas City plant?

9 A I don't think so. No, we did not do the routine
10 testing until the OSHA requirements were concerned.

11 Q Could you describe what atmospheric sampling
12 entailed, please.

13 A Sure. You take a pump and a measured collection
14 vessel and you pump air through it, and there you have a
15 collective medium and you have a pump calibrated so that
16 you pump a liter of air through there in a certain amount
17 of minutes, so that gives you how much any particular
18 compound is in the air during that minute. You look at
19 the -- if there's 15 liters of air and you have 2
20 milligrams of something in there and you calculate how
21 much you have in the breathing atmosphere all day.

22 Q Atmospheric sampling tests worker exposure

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1 through inhalation; is that correct?

2 A That's correct.

3 Q Does it test worker exposure through any other
4 route?

5 A No.

6 Q Was there any effort -- strike that.

7 Was there any technique arising out of World War
8 II that could be used to test worker exposure through any
9 route other than inhalation?

10 A It might very well have been. I don't recall
11 off the top of my head right now.

12 Q Were you engaged in any such activity at the
13 Texas City plant?

14 A I personally or the medical department?

15 Q The medical department.

16 A Well, we were not -- we weren't developing
17 methods. We were using some -- doing some sampling.

18 Q During what years were you doing that sampling?

19 A '50s and '60s.

20 Q And that sampling was designed to determine
21 what?

22 A What we had in the workplace, what particular

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1 contaminants were in the workplace that we considered of a
2 toxic nature.

3 Q And they would reveal worker exposure through a
4 route other than inhalation?

5 A Well, no, we did get -- we didn't get an exposure
6 by oral exposure. We didn't have people swallowing the
7 stuff.

8 Q You did or did not?

9 A Did not. We did have skin contact, but you
10 could tell that by looking. You didn't need to have any
11 sophisticated instrument to say whether you got something
12 on your hands or not. And inhalation was the one we
13 really had to measure the material the person was
14 breathing and you did that by either a personal monitor
15 stuck on the man's coveralls or general area monitoring.

16 (Pause.)

17 BY MS. SCHIFFER:

18 Q Did Monsanto undertake during the period that
19 you just described which was -- strike that.

20 From the period right after World War II, did
21 Monsanto undertake any studies to determine worker
22 exposure by ingestion, to determine the effects of worker

1 exposure of chemicals by ingestion?

2 A Well, one of the basic methods of determining
3 the toxicity of a product is by oral ingestion so when we
4 did any testing, we always started off with the oral doses
5 and we certainly didn't do any testing on the worker.

6 Q What did you do testing on, did you do testing
7 on animals?

8 A Animals.

9 Q Did you do any testing -- this is on the period
10 right after World War II -- related to ingestion of the
11 chemicals that were either produced or used at Texas City?

12 A We didn't have a great many chemicals down in
13 Texas City. Toxicity was done on a large number of them.
14 We knew what the toxicity of hydrogen cyanide was. We
15 knew what the toxicity of styrene was. We knew what the
16 toxicity of vinyl chloride monomer was, so there wasn't an
17 awful lot of information needed. Besides, we had to
18 consider the exposure.

19 Texas City is like an oil refinery. The plant
20 is like an oil refinery where the material is supposed to
21 be within the kettles, within the pipes and within the
22 pumps and there could be failures of pumps or leaks in

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1 pumps that could occur, and you'd have an exposure that
2 way. There'd be exposure in cleaning out various
3 apparatus. There'd be exposure in filling tank cars, but
4 the exposure was relatively limited at Texas City. It's
5 an outside plant just with all the material inside pipes.

6 Q Did you consider exposure through groundwater as
7 one of the possible routes of exposure?

8 A What?

9 Q Did you consider exposure through groundwater as
10 one of the possible routes of exposure?

11 A To who?

12 Q Did you limit your exposure studies to exposure
13 to workers?

14 A Yes, I'd say, by and large. Remember,
15 groundwater is not like an underground river. It's just
16 moist sand.

17 Q At the Texas City plant, the groundwater was
18 just moist sand; is that correct?

19 A Well, it all depends. There were aquifers which
20 might be 200 feet deep or 2000 feet deep.

21 Q At Texas City, is that where the groundwater
22 was -- were you aware where the groundwater was at Texas

1 City?

2 A Well, I know that some places it was pretty
3 deep, that they had deep well injections.

4 Q Are there places at Texas City where the
5 groundwater was in the surface sand as you just described
6 it?

7 A At what?

8 Q Are there places at Texas City where the
9 groundwater was in the sands as you just described it?

10 A Yes. Groundwater, it's not a puddle on top of
11 soil. It's down beneath the soil. It varies at different
12 geological strata.

13 Q Are there places in Texas City where the
14 groundwater is quite close to the surface?

15 A I think so.

16 Q Did you make any examination of the possibility
17 of worker exposure to the chemicals you've described
18 through the groundwater at Texas City?

19 A No, we didn't even know that there was any in
20 the groundwater. We had this material that we collected
21 in sewers and we sent to landfills. We did not expect the
22 landfill, which was made of a particular clay in Texas at

1 that time -- well, still is -- that was believed impervious
2 to leaking or leaching of any of the material in the
3 landfill.

4 Q Is it your area of expertise hydrogeology,
5 Dr. Kelly?

6 A It certainly is not.

7 Q Were you involved in the hydrogeological issues
8 at the Texas City plant?

9 A No, sir -- I mean, I didn't hear any
10 hydrogeological -- I'm not an expert at all in water
11 contamination.

12 Q But it wasn't one of the areas -- the routes of
13 worker exposure that you were concerned about, that there
14 might be exposure through the groundwater at Texas City;
15 is that correct?

16 A That's correct.

17 Q The only routes that you looked at were worker
18 exposure through inhalation and worker exposure by skin
19 contact?

20 A Yes, I would say that's correct, yes.

21 Q And you were not concerned about worker exposure
22 through ingestion; is that correct?

1 A That's correct.

2 Q And this is at the Texas City plant now?

3 A That's correct.

4 Q Dr. Kelly, I believe you testified that the
5 second industrial medicine component to come out of World
6 War II was individual monitoring of workers?

7 A That's correct.

8 Q Did Monsanto begin to use individual monitoring
9 of workers shortly after World War II?

10 A Yes. In some cases, not every worker didn't
11 have a monitor on them.

12 Q What was the means of individual monitoring that
13 Monsanto used?

14 A What was the means? You said what was the
15 method?

16 Q What was the method of individual monitoring
17 that Monsanto used?

18 A Well, you put a little motor on a fellow and
19 drew this air through a bottle or container that had a
20 solvent in it, and you measured how much you drew in and
21 you analyzed how much you got of anything in there besides
22 the solvent you put in as the starter.

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1 Q And when did Monsanto begin to use that method
2 of individual monitoring at the Texas City plant?

3 A I don't remember.

4 Q Would it have been under your supervision?

5 A Well, we recommended the plant safety people
6 would carry out the details of it. We didn't have a
7 member of our medical department down there seeing that
8 they ran them, the pump, okay. We instructed them how to
9 use it and told them what kind to buy and let them run it.

10 Q Would it have been the 1940s that that was first
11 run at the Texas City plant?

12 A I don't remember..

13 Q Would it have been done in the 1950s?

14 A I'm sure it was being done in the 1950s.

15 Q It maybe was done earlier than the 1950s?

16 A It could.

17 Q Would the results of individual monitoring have
18 been reported to you?

19 A Not uniformly, not in all cases, but I think we
20 would use the individual monitoring because we had a
21 particular problem or a particular request by employees or
22 a particular complaint about exposure that I would hear

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1 the results of what happened after the discussion with the
2 employees or the union or something like that.

3 Q Were the workers at Texas City unionized?

4 A I think they were.

5 Q Do you know what the union was?

6 A No, I don't. I'm not certain they were
7 unionized, but I talked to groups of them, and I thought
8 they were unionized, but I don't know. I'm not certain.
9 I don't know which one it was.

10 Q Do you know what the time frame would be?

11 A No, I don't.

12 Q Do you remember any specific problems at the
13 Texas City plant that would have led to the individual
14 monitoring you described?

15 A I don't remember. I can't answer that
16 question. I don't remember it.

17 Q Would there have been notes or records kept of
18 the monitoring?

19 A I'm sure they were kept. How long they were
20 kept is a different story. We had a records retention
21 program, which was really a records disposal program, and
22 after every five years, you were supposed to go out

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1 through your files and pitch the stuff that was not
2 relevant anymore.

3 Q Would you have pitched the results of the
4 individual monitoring program?

5 A I think so because the plant is changing all the
6 time and what was relevant at one time wouldn't be
7 relevant if we had improved the ventilation or substituted
8 different feedstock or were in general ventilation or spot
9 ventilation.

10 Q Would you have pitched the results of the
11 atmospheric sampling that you described before?

12 A I think so, for the same reasons.

13 Q Do you recall whether there was any time during
14 your stay at Monsanto that the atmospheric sampling
15 results at the Texas City plant exceeded the standards set
16 by the American Council of --

17 A Government Industrial Hygiene.

18 Q -- Government Industrial Hygiene?

19 A It may be on spot cases. I don't recall any
20 specifically, but if you take a sample at 10:00 in the
21 morning, you take another sample at 3:00 in the afternoon,
22 one of those may be higher than the maximum allowable

1 concentration, but on a time weighted basis, the average
2 would come down to an acceptable level.

3 Q Was there any time when Monsanto exceeded the
4 specified standard over a period that you thought required
5 corrective action?

6 A There may have been. I don't recall specifics.

7 Q Would you have kept written records of that?

8 A Now or then?

9 Q Contemporaneous written records?

10 A I don't know how long we kept them. I don't
11 know if they are now. I left 18 years ago.

12 Q Dr. Kelly, would you, at the time of any such
13 activity, have kept a written record or have made a
14 written record?

15 A Kept it in St. Louis? I don't think so. I
16 think it would stay in the plant file in Texas.

17 Q A written record would have been made; is that
18 correct?

19 A Yes, somebody wrote it down.

20 Q And it would have been kept for some period of
21 time?

22 A Yes.

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1 Q And to your knowledge, would it then have been
2 pitched pursuant to the document disposal policy that you
3 just described?

4 A Yes.

5 Q So to your knowledge, records of any such
6 exceedances from the 1940s and 1950s and 1960s would no
7 longer exist; is that correct?

8 A I don't know whether they exist or not. I
9 haven't seen any.

10 Q But they would have been made at the time?

11 A Yes.

12 Q You've described individual monitoring
13 activity. What was the standard against which that
14 individual monitoring would have been measured, starting
15 in the 1940s?

16 A Well, the individual monitoring, the personal
17 monitoring shows what the man is breathing for X period of
18 hours during a day so that's applied, I guess, to the
19 standard of American government industrial group,
20 industrial hygiene group. You can arrive at it two ways.
21 One is by the general atmospheric sampling and the other
22 is by the individual monitoring sampling.

1 Q Would contemporaneous records have been made by
2 Monsanto of the individual monitoring measures?

3 A Yes.

4 Q Where would those records have been kept?

5 A At Texas City.

6 Q And would those records have been subject to the
7 same document disposal policy that you described?

8 A It all depends on where they ended up. If they
9 ended up in a medical file, they would have stayed there.
10 If they ended up in a file related to a particular
11 problem, they would have been pitched. We kept our
12 medical reports, such as an X-ray report, forever, and it
13 all depends on where that record was kept. If it was kept
14 in the industrial hygiene part of the Texas City group,
15 why, it could suffer to be discarded after X number of
16 years.

17 Q And you don't know which of those two categories
18 those records fell into?

19 A No, I don't.

20 Q Do you recall any time when the individual
21 monitoring results exceeded the standards of the American
22 Council?

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1 A I don't remember any specific time, and I feel
2 sure that at times we did, because remember, when we were
3 looking for trouble spots, we were looking where there
4 were complaints of irritation, eye irritation, nose
5 irritation, chest irritation. So when we were taking this
6 monitoring, we were looking at the worst case scenario and
7 we may very well have had higher levels than we wanted.

8 Q Do you recall any instances when, starting in
9 the 1940s, when Monsanto would have taken any corrective
10 action at the Texas City plant because of individual
11 monitoring that exceeded the American Council standards?

12 A I don't recall the specific details, but after
13 all, we were taking the samples to find out what we had
14 and if we had too much, we would take corrective measures,
15 which would usually be ventilation or spot ventilation.

16 Q Are there any other corrective measures that
17 would have been entailed?

18 A Personal protection all the way from gas mask
19 type units to air respirators and conceivably some
20 engineering changes.

21 Q Are there any other kinds of corrective measures
22 that Monsanto would have taken?

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1 A. I don't think so.

2 Q And again, we're talking for the time period
3 from the 1940s on up; is that correct?

4 A Well, the middle '40s on up because I don't know
5 what was happening in the '40s and I don't know when the
6 Texas City plant was not. I thought it was built sometime
7 during the time I was in the service.

8 Q I believe it was built in 1943.

9 A Oh, no, it was going during the war because
10 Texas City, the styrene was used for artificial rubber.

11 Q Dr. Kelly, you've testified that in
12 approximately 1975, when OSHA came into place, that
13 Monsanto increased its activity of worker monitoring. I'd
14 like to take a step back and ask you whether you
15 participated in any way in the development of or lobbying
16 for or against the passage of OSHA?

17 A No, I did not.

18 Q Did you provide any information to anyone at
19 Monsanto who did participate in that activity?

20 A I don't know if anybody at Monsanto lobbied for
21 or against EPA regulations but I did not provide any
22 information for or against anybody at Monsanto.

1 Q For or against any lobbying activity they may
2 have undertaken?

3 A That's correct.

4 Q Do you recall whether anybody asked you about
5 any information about worker safety standards at a time
6 that would have related to the passage of OSHA?

7 A I don't recall.

8 Q You don't recall developing any information for
9 anybody at Monsanto related to worker safety?

10 A That's correct.

11 Q Were you in any way involved in the development
12 of information or standards for regulations that
13 implemented OSHA?

14 A No, I was not.

15 Q How did you first learn about OSHA?

16 A I guess I read it in the Federal Digest or in
17 The New York Times or someplace.

18 Q Do you remember when that was, approximately?

19 A Well, first of all, there was the proposed
20 regulations and there were hearings that were the adoption
21 of the regulations. There was an effective date of when
22 the regulations had to be followed, and I think that whole

1 thing went from about '72 until after '74 when I retired.
2 I retired in '74. And I don't know how long it was before
3 the regulations were passed and the standards were set,
4 how industry should abide by such regulations. I think
5 that was either in '74 or right after '74.

6 Q Did anyone at Monsanto ask you your opinion
7 about what the standards should be?

8 A No, ma'am.

9 Q Did you have any responsibility for implementing
10 OSHA standards at Monsanto?

11 A I don't know if those standards had to be
12 implemented by the time I left.

13 Q Did the state of Texas have any worker safety
14 standards?

15 A I'm sure they did.

16 Q Were you aware of those standards, if they
17 existed?

18 A I personally was not -- Garrett lived in Texas
19 and worked at the plant and the safety department under
20 Gorbel, also had quite a bit of contact with the state
21 safety regulations. Safety was not part of the medical
22 department's responsibility. I mean by that, safety, we

1 weren't responsible for fires or explosions or sticking
2 your hand into a saw, but we were responsible for
3 preventing pulmonary irritation, various systemic
4 poisoning. That would be our responsibility.

5 Q Would you be responsible for being aware of any
6 state standards related to those aspects, the aspects that
7 you've just described?

8 A We really let the plant worry about that. I
9 don't think I was in a position to evaluate the safety
10 standards of the 20 or 25 different states in which we
11 operated.

12 Q Would you have been available for questions
13 about application of any of those standards?

14 A Yes, I'm sure I would have been.

15 Q Do you have any specific recollection of people
16 asking you questions about the application of those
17 standards in Texas?

18 A No, I don't.

19 Q Dr. Kelly, did you at any time undertake --
20 strike that.

21 Did you at any time establish a program of
22 medical examinations of employees at the Texas City plant?

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1 A Yes.

2 Q And when was that?

3 A When I came back from the service.

4 Q So approximately 19 --

5 A '46.

6 Q How long did that program last?

7 A Until '74 that I know of.

8 MS. SCHIFFER: Let's get off the record for a
9 minute.

10 (Discussion off the record.)

11 BY MS. SCHIFFER:

12 Q What was the purpose of those examinations that
13 you set up?

14 A What was the purpose of what?

15 Q Of those examinations, of that examination
16 program.

17 A To find out A, if there were any incipient
18 nonoccupational illness or any signs of any occupational
19 illness.

20 Q And do you recall whether you determined that
21 there was any occupational illness among the Texas City
22 plant workers at any time from 1946 to 1974?

1 A I don't think we had any. Certainly I don't
2 think we had any that we paid a compensation on. I
3 received reports from Liberty Mutual on any compensable
4 claims that were filed and were paid by Liberty Mutual.
5 They sent me quarterly reports of all the plants. And to
6 the best of my recollection, we did not have any
7 significant number in Texas City.

8 Obviously, there were dermatitis cases and stuff
9 like that. But we didn't have any systemic illness like --
10 we didn't have any leukemias that showed up during my time
11 there. Some showed up after I left that had worked there
12 before 1974. Somewhat -- I didn't mean some. I don't know
13 of any other specific ones.

14 Q Was the focus of your concern whether there was
15 any condition that had to be compensated by workers'
16 compensation?

17 A Was the focus of --

18 Q Was the focus of your examination of employees
19 to determine whether there was any injury that had to be
20 compensated by workers' compensation?

21 A Oh, no, the focus of the examination was to find
22 out if they were getting any illness from their job and if

1 we could stop it, we'd stop it. It wasn't a question of
2 paying the compensation to the person. It was a small
3 amount of any expense. So that wasn't the focus. The
4 focus was let's be sure that we don't have a rash of these
5 in any particular department.

6 Q In addition to the leukemia that you just
7 described, was there any other occupational condition that
8 you observed at Texas City at any time between 1946 and
9 1974?

10 A I'm sure there were dermatitis cases. I mean,
11 there's no question about that. Other than that, I don't
12 recall occupational conditions at Texas City. We didn't
13 have too many of them.

14 Q So the only ones you recall are the leukemia and
15 the dermatitis that you've described?

16 A That's correct.

17 Q Did you find any nonoccupational conditions that
18 you paid attention to in the course of those examinations?

19 A Oh, sure. You get people with high blood
20 pressure, high cholesterol, gout, diabetes. You get a
21 host of illnesses that you take -- if you take 100 people
22 walking down Broadway, you'll find, if they're 50 years

1 old, you'll find 100 different conditions. So we had a
2 bunch of those.

3 Q How did you determine whether a condition was
4 occupational or nonoccupational?

5 A If there are other people -- first of all, if the
6 condition has not been reported in a higher percentage of
7 similar workers, one assumes it's not due to their working
8 environment. If it is a condition that occurs with
9 secretaries, lawyers, doctors as well as chemical plant
10 operators, you could also assume that the cause of the
11 factor is something different than the work environment.
12 But it's a pretty tough call to decide whether a condition
13 is occupational or nonoccupational. If a person has
14 cancer of the lung and he smokes, to decide whether or not
15 his cancer is due to cigarette smoking or inhaling SO₂ for
16 a long period of time, that's a tough call to make.

17 Q How did you make those decisions at Monsanto?

18 A How did you make it? You have to use a certain
19 amount of clinical judgment. You have to figure what the
20 percentage of people are who have 50 pack-years of
21 cigarette smoking and whether or not if this is the first
22 person in the department who ever had lung cancer and

1 you've got other people doing the same work that don't
2 have lung cancer and it's not been reported in the
3 literature and similar industries to ours, well, then you
4 make a calculated clinical decision and say I think this
5 is probably not occupational in character.

6 Q Was that decision in your sole discretion at
7 Monsanto?

8 A Was it what?

9 Q Were the decisions about whether an illness or
10 injury or condition was occupational or nonoccupational a
11 decision in your sole discretion?

12 A No, because if the employee did not agree with
13 it, he would take himself down to the compensation board
14 and they would have their experts examine him. We also
15 would have -- sometimes Liberty Mutual would make -- or I
16 mean the insurance carrier would give us their input on
17 whether or not this was an occupational condition or not.

18 Q Was there any other person at Monsanto that
19 would be involved in that decision besides you?

20 A Oh, sure, the plant doctor. Maybe he's the
21 fellow who saw them first.

22 Q Anybody else?

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1 A No.

2 Q Nobody else in management?

3 A No.

4 Q It was viewed as a solely medical decision?

5 A I beg your pardon?

6 Q It was viewed as solely a medical decision?

7 A That's correct.

8 Q Would you be involved in each of the decisions

9 that were made about whether a condition was occupational

10 or nonoccupational?

11 A No. I think it would only be if there was a

12 considerable difference of opinion. Most of them are

13 solved at the plant level and the plant physician would be

14 talking to the man, talking to the man's doctor and they

15 would arrive at a decision as to what the cause was.

16 Q If there was a difference of opinion, that would

17 be a difference between whom and whom?

18 A Between the employee and the Monsanto plant

19 physician.

20 Q And then you would come to be involved in that

21 decision?

22 A That's correct.

1 Q And you and the people you've described but
2 nobody else?

3 A That's correct.

4 Q Dr. Kelly, was there ever a time during your
5 tenure at Monsanto that you requested that animal studies
6 be made of a certain chemical?

7 A Yes.

8 Q And what were those times?

9 A An awful lot of times from 1947 or '48 to 1974.

10 Q Could you specify for me what each of those
11 times were.

12 A We may have 50 of them.

13 Q What would be the conditions under which you
14 would determine that animal studies should be made of a
15 chemical?

16 A One, if there were no toxicity information
17 available, if it was a compound that there was
18 considerable exposure to our workers, if it was a compound
19 that we needed to give adequate information to our
20 customers to protect their workers and if it were going to
21 be a food additive or if it were going to be an
22 agricultural chemical that came under the purview of the

1 U.S. government. There were any number of conditions like
2 that.

3 Q Did you undertake those studies yourself?

4 A No. We used either academic laboratories or
5 commercial laboratories.

6 Q In each instance, you used an outside
7 laboratory?

8 A I beg your pardon?

9 Q In each instance, you used an outside
10 laboratory?

11 A That's correct, until 1975 when we had our own
12 laboratory functioning, but I was gone. And then we
13 started planning and building a laboratory in '74, and I
14 think it went on stream in '75 when we had our own
15 laboratory.

16 Q And where would the results -- who would have set
17 up the study design for those studies?

18 A It varies if there are any government
19 connections, but it would be our toxicologist, the
20 laboratory director that we were -- director of the
21 laboratory we were going to use and the government
22 agency. We were going to submit the reports to the Food

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1 and Drug, Agriculture Department or the other group.

2 Q Who was your toxicologist?

3 A It varied. First it was Dr. Hunt and then it
4 was Dr. Levinskas and we had a Dr. Jacobson -- John,
5 J-o-h-n, Johannson, and I think we had a fourth
6 toxicologist in there.

7 Q Do you know their approximate years?

8 A Sure. Hunt came in the early '60s, I believe.
9 Levinskas came in '71 or '72 and the others, two came
10 sometime between mid-'60 and early '70s.

11 Q Did you have any toxicologists before the early
12 1960s?

13 A No, we did not.

14 Q And for studies that were not done as part of a
15 submission to the government, who established the study
16 design?

17 A I would say I was the ultimate one, and we had
18 Hunt and he established it was. We had a toxicologist and
19 then we had to rely a great deal on the director of the
20 laboratory and his ideas.

21 Q Do you recall getting back any results that
22 showed toxicity for -- showed study results for

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1 acrylonitrile?

2 A No. I believe there was some material in the
3 literature already and also there was a cooperative group
4 that had a study of acrylonitrile, I believe spearheaded
5 by Dow, that ran acrylonitrile studies.

6 Q Was Monsanto a part of that cooperative group?

7 A I'm sure we chipped in.

8 Q And the results would be available to Monsanto?

9 A Yes.

10 Q Do you have any idea when that set of studies or
11 study was done?

12 A I think late '60s or early '70s, but there may
13 have been -- that's when the long-term studies were. There
14 may have been some acute studies 30 or 90 days rather than
15 two-year studies that were done earlier. I thought that
16 was done in the '60s or something like that.

17 Q Were there any studies done of acrylonitrile
18 before the 1960s?

19 A No, I'm not even sure the date of that, whether
20 that '60 date is correct.

21 Q And you were aware of the outcome of those
22 studies?

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1 A Yes.

2 Q And what did they show?

3 A In all these studies, you look for A, low effect
4 level; B, a high effect; level and C, you try to get a
5 level in between. So you always get some effect because
6 you're giving enough of the chemical to get an effect, and
7 what you do it all depends on the purpose of the study.
8 If you're doing it for a -- where there's a possibility of
9 people -- of it getting into the food chain or into the
10 food packaging, you have to analyze what the extraction
11 capability is. And you go down to the government with
12 your extraction data and your toxicity and say here's what
13 we got, what do you think of it?

14 Q Were there any similar studies for styrene?
15 Were there any studies for styrene?

16 A There were acute studies by Dow, inhalation
17 studies by Dow. I guess that was back in the '50s. There
18 were no two-year studies as they were proposed and carried
19 out, I believe, on acrylonitrile.

20 Q And you were aware of the results of those
21 styrene studies?

22 A Yes.

1 Q How about for styrene tars?

2 A No. Styrene tars were not an item of commerce.

3 Q You only undertook these studies for something
4 that would become an item of commerce?

5 A Yes.

6 Q Would you have undertaken any studies regarding
7 wastes?

8 A If we thought the waste was going to be in a
9 position where it would come in contact with humans, we
10 would have.

11 Q Do you recall any waste for which you undertook
12 such studies?

13 A I beg your pardon?

14 Q Do you recall any wastes for which you undertook
15 such studies?

16 A No. We took acute studies in order for us to be
17 secure in advising adequate safe handling for the
18 transportation and disposal of, landfilling, shoveling it
19 into the landfill.

20 Q For what particular chemicals did you undertake
21 such studies?

22 A Several of the tars.

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1 Q Which tars were those?

2 A Styrene and vinyl chloride tars.

3 Q So you did undertake studies for styrene tars?

4 A Yes.

5 Q Do you recall when those studies were
6 undertaken?

7 A What?

8 Q Do you recall when those studies were
9 undertaken?

10 A No, I don't.

11 Q Was it in the 1950s?

12 A I don't think it was that early.

13 Q You think it was the 1960s?

14 A I believe so, but I'm not certain.

15 Q And you would have seen the results of those
16 studies?

17 A Yes.

18 Q Do you recall who did them?

19 A They were done by a small laboratory
20 organization in St. Louis. They were acute studies,
21 remember. Scientific Associates or the Younger,
22 Y-o-u-n-g-e-r, Laboratories, both in St. Louis.

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1 2 Would they have taken any studies for chronic
2 exposure as well?

3 A No, they would not have.

4 Q They were limited to acute?

5 A Yes.

6 2 How about for cyanide?

7 A What about it?

8 2 Were there any studies undertaken regarding
9 cyanide?

10 A Well, everybody knew the toxicity of cyanide.

11 Q And that was true even in the 1940s?

12 A Oh, sure.

13 Q Dr. Kelly, you testified about bioaccumulation
14 this morning, and you got it up to, in your example, that
15 it could be bioaccumulated 1 in 100 in fish. Could there
16 be further bioaccumulation up to humans?

17 A Well, it could but certainly it hasn't occurred
18 because following the finding that PCBs were
19 bioaccumulated in marine animals and avian species and
20 people were or eating fish livers, they did not get very
21 high levels of the PCBs in their blood and fat.

22 Q "Their" meaning human blood and fat?

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1 A Yes.

2 Q What about DDT?

3 A Probably about the same. I'm not -- that was
4 rules out -- that was bad and we didn't make it, so I
5 wasn't -- I'm not too familiar with the bioaccumulation
6 studies with DDT.

7 Q So there can be bioaccumulation that goes beyond
8 fish and into humans; is that correct?

9 A Oh, sure.

10 Q And when you say that didn't occur, were you
11 talking about just a particular chemical?

12 A I'm talking about PCBs and I don't know what
13 they found in DDT in the human fat. I just don't know
14 that, but certainly we did not find levels -- you have to
15 eat an awful lot of fish with 10 parts per billion in the
16 liver of fish or the fat of fish to get started with
17 bioaccumulation into people.

18 Q But the mechanism of bioaccumulation can occur
19 up through the level of man; is that right?

20 A Sure.

21 Q Did you undertake any worker studies at -- I'm
22 going to ask you for each of the off-sites in this case,

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1 for South 20?

2 A Did I --

3 Q Undertake any of the kinds of worker monitoring
4 or studies that you've described for workers at the
5 South 20 site?

6 A No. We gave them the usual physical examination
7 and we gave them the run of the mill workers at Texas
8 City, the wage roll employees.

9 Q The wage roll employees at South 20?

10 A Yes, sir, all through the plant. We didn't give
11 them any special examination program.

12 Q Do you recall whether there was any indication
13 of worker occupational conditions for workers at the
14 South 20 site?

15 A I don't recall hearing of any ill effects of the
16 workers at the South 20 site.

17 Q Did you do any worker monitoring or health
18 examinations of workers at the North 80 site?

19 A No, I did not.

20 Q Did Monsanto?

21 A No.

22 Q And why was that?

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1 A Well, we didn't think there was any particular
2 exposure. Here we have a compound that is not
3 particularly volatile at Texas City temperatures, and it's
4 handled by dump trucks and we didn't see any particular
5 exposure to a compound of only moderate industrial
6 toxicity.

7 Q Was there a reason why you would have done
8 examinations of workers at South 20 and not done them of
9 workers at North 80?

10 A No, I didn't say we did them at South 20. I
11 said we gave them the same examination we gave all the
12 workers at the Texas City plant, whether they worked at
13 the cyanide plant or South 20 or North 40.

14 Q So you would have given those same examinations
15 to workers at the North 80 site?

16 A I beg your pardon?

17 Q You would have given the same examination to
18 workers at the North 80 site?

19 A That's correct.

20 Q What about workers at the MOTCO site?

21 A That was not a Monsanto installation. We didn't
22 do anything as far as examining the MOTCO people or MOTCO

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1 people.

2 Q Would you have informed anybody at the MOTCO
3 site about results you would have learned about worker
4 exposure at the Texas City plant site?

5 A That's a hypothetical question because we
6 didn't -- you're asking me if we found any, would I have
7 told them?

8 Q Correct.

9 A Well, I would have to see what the difference in
10 the exposure at the MOTCO site was in comparison to our
11 workers at the Texas City plant. The toxicities, I said
12 repeatedly through this deposition, varies with the
13 inherent toxicity of the product itself plus the exposure
14 level, and if we had nothing in our workers, I would go
15 over to the MOTCO plant and say here we don't have any
16 problems with our people because I wouldn't know what
17 their duties at the MOTCO site were.

18 Q What about at the Brio site?

19 A Same answer.

20 MS. SCHIFFER: Could I have just one minute.

21 (Pause.)

22 MS. SCHIFFER: I don't have any further

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1 questions, Dr. Kelly.

2 MR. MC CONNELL: I have some very sort follow-up
3 on some of your discussion with Mr. Manta.

4 EXAMINATION

5 BY MR. MC CONNELL:

6 Q Dr. Kelly, are you a qualified geologist?

7 A I am not, qualified or unqualified. No part
8 geologist.

9 Q You're not an expert in that area?

10 A Not in the least.

11 Q Did you personally ever investigate the soil
12 types at the North 80 site?

13 A No, I did not.

14 Q At South 20?

15 A No, I did not.

16 Q At MOTCO?

17 A No, sir.

18 Q Brio?

19 A No.

20 Q At the Texas City plant?

21 A No, sir.

22 Q You have no firsthand knowledge from your own

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1 investigation regarding the soil conditions at any of
2 those sites?

3 A That's correct.

4 Q And anything you know on that subject is
5 secondhand?

6 A Oh, secondhand. That's where most information
7 comes from.

8 Q But anything you know about the soil at those
9 sites is something you heard from somebody else?

10 A That's correct.

11 Q Did you personally, Dr. Kelly, ever investigate
12 the groundwater conditions at the North 80 site?

13 A No, I did not.

14 Q South 20?

15 A No, sir.

16 Q MOTCO?

17 A No, sir.

18 Q Brio?

19 A No, sir.

20 Q Texas City plant?

21 A No, sir.

22 Q You have no firsthand knowledge from your own

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1 investigation about the groundwater conditions at any of
2 those sites?

3 A No, I do not have any such information.

4 MR. MC CONNELL: No further questions at this
5 time. Thank you, Dr. Kelly.

6 MR. BRAY: Nothing. Let's go off the record.

7 (Discussion off the record.)

8 (Recess.)

9 MR. BRAY: I have no questions. Designate the
10 deposition confidential and just note that for any readers
11 of the transcript, we are set to commence video deposition
12 starting Tuesday morning, February 2 at 10:00 of
13 Dr. Kelly. As of this moment, it is still scheduled to
14 occur at Potter, Anderson & Corroon in Wilmington. Just
15 leave it at that.

16 MR. MC CONNELL: Just for the record --

17 MR. BRAY: We can discuss among ourselves
18 anything about relocating it.

19 MR. MC CONNELL: We can discuss the relocation.
20 One thing I would like to make clear is we've concluded
21 our discovery deposition. The video deposition, of
22 course, Jack is the one that you've noticed. It's

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1 Monsanto's deposition.

2 MR. MANTA: And if we do -- I don't know if this
3 has to be on the record -- if it is moved to Washington I
4 would request that it begin at 10:30 rather than at
5 10:00. That's the only request I'd make.

6 MR. BRAY: That would seem to be acceptable. I
7 mean, I would imagine we can still complete the thing on
8 time but let's just make it clear for readers who are not
9 here, as they read the end of the transcript, at the
10 moment it is still set for 10:00 a.m. Tuesday, February 2
11 in Wilmington at Potter, Anderson & Corroon, and in the
12 event that there were to be a change, somehow everyone
13 would be notified, and if not notified, it will be there.

14 MR. MC CONNELL: Fine.

15 (Whereupon, at 4:22 p.m., the deposition was
16 concluded.)

17

18

19

R. EMMET KELLY

20

21

22

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I, JULIE BAKER, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn; that the testimony of said witness was taken in shorthand and thereafter reduced to typewriting by me or under my direction; that said deposition is a true record of the testimony given by said witness; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.



Notary Public in and for the
District of Columbia

My Commission Expires SEPTEMBER 30, 1997

TRANSCRIPT OF PROCEEDINGS

IN THE SUPERIOR COURT
OF THE STATE OF DELAWARE
IN AND FOR NEW CASTLE COUNTY

-----X	
MONSANTO COMPANY,	:
	:
Plaintiff,	:
	:
v.	:
	:
AETNA CASUALTY & SURETY COMPANY,	:
al.,	:
	:
Defendants.	:
	:
-----X	

Civil Action Number
88C-JA-118-1-CV
NON-ARBITRATION
CASE

KELLY DEPOSITION EXHIBITS

PROTECTED MATERIAL: MONSANTO
INSURANCE COVERAGE LITIGATION

Washington, D. C.

Thursday, February 4, 1993

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