

1 IN THE DISTRICT COURT OF BRAZORIA COUNTY, TEXAS
2 239TH JUDICIAL DISTRICT

3 ---000---

4 MANDY STAPLES, as mother and
next friend of JONATHAN STAPLES (age 10),
5 JUSTIN STAPLES (age 8); and SHELBY
STAPLES (AGE 5); CHRISTINA CARL, aunt
6 and guardian of the person and estate
of CARLIN DAVID STAPLES, JR., (age 16);
7 and ROBERT STAPLES, as uncle and next
friend of JESSE STAPLES (age 13)

NO. 13798*JG00

8 vs.

9 SHINTECH INCORPORATED

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14 **DEPOSITION OF OTTO WONG**

15 **MARCH 13, 2002**

16 **Volume II**

17 (Pages 262 - 355)

18

19 Taken before KAREN E. THOMPSON

20 CSR No. 2792

21

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4 MARCH 13, 2002

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11 PX 12 Environmental Health Perspectives, 1981, 268

12 "Epidemiologic Study of Vinyl Chloride

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13 1972, 11 by W. Clark Cooper, 6 pages,

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14 PX 13 June 8, 1982 letter from Carol R. Stack, 290

15 Vinyl Chloride Program, CMA, to

G.E. Disch, Tenneco Chemicals, 2 pages,

16 no Bates numbers

17 PX 14 8 July 1982 letter from Otto Wong to 294

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18 no Bates numbers

19 PX 15 CMA Vinyl Chloride Study Status Report 272

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20 [20 May 1985]" and Table 2, "Initial

Study Deceased [20 May 1985],"

21 2 pages, no Bates numbers

22 PX 16 "A Proposal for the Update of the 269

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23 Workers," prepared for the Chemical

Manufacturers Association by Environmental

24 Health Associates, Third Revision,

September 31 (sic), 1981, 21 pages,

25 no Bates numbers

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5 of a Five-Year Follow-up of an
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7 PX 18 May 15, 1979 letter to T. R. Torkelson, 278

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8 from Richard L. Davis, Environmental

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9 no Bates numbers

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11 Chloride Program Panel, November 8, 1985,

23 pages, no Bates numbers

12 PX 20 Bimonthly Progress Report, Vinyl Chloride 286

13 Epidemiologic Study, Phase I, May 18,

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14 PX 21 March 11, 1982 letter from Carol R. Stack 289

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16 2 pages, no Bates numbers

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4 PX 25 Report, "Epidemiological Investigation 311
of the Polyvinyl Chloride Industry in

5 Reference to Occupational Acroosteolysis,"

by The Institute of Industrial Health,

6 University of Michigan, February 1969,

Confidential report to the Medical

7 Advisory Committee, Manufacturing Chemists

Association, 116 pages,

8 Bates Nos. BA 000061 - BA 000068 and

BA 000070 - BA 000176

9 PX 26 Advance copy of a publication prepared 317

10 for the Association of Plastics

Manufacturers in Europe, June 1986,

11 "Vinyl Chloride Carcinogenicity: Available

Scientific Evidence and Control Measures,"

12 by Pr. Cesare Maltoni, 48 pages,

no Bates numbers

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14 DEFENDANT'S EXHIBITS

15 2A Photocopy of cover, American Journal of 354

16 Industrial Medicine, Volume 20, No. 3,

1991, 1 page, no Bates number

17 6A Photocopy of cover, American Journal of 354

18 Industrial Medicine, Volume 24, No. 2,

1993, 1 page, no Bates number

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1 DEPOSITION OF OTTO WONG

2

3 BE IT REMEMBERED that, on Wednesday,
4 March 13, 2002, commencing at the hour of 8:00 a.m., at
5 the Law Offices of BROBECK, PHLEGER & HARRISON, One
6 Market, Spear Street Tower, San Francisco, California,
7 pursuant to notice and continued from March 12, 2002,
8 before me, KAREN E. THOMPSON, a Certified Shorthand
9 Reporter of the State of California, personally appeared
10 OTTO WONG, produced as a witness in said action, and
11 being by me previously sworn, was thereupon further
12 examined as a witness in said cause.

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14

15 A P P E A R A N C E S

16 VAUGHAN O. STEWART, Attorney at Law, of the
17 Law Offices of VAUGHAN O. STEWART, 115 N. Dixie Drive,
18 No. 500, Lake Jackson, Texas 77566, was present on
19 behalf of the plaintiffs.

20 LESLIE M. STEWART, Attorney at Law, of the
21 Law Offices of TOMBLIN CARNES McCORMACK, LLP, 210 Barton
22 Springs Road, Suite 550, Austin, Texas 78704, was
23 present on behalf of the plaintiffs.

24 KEVIN L. COLBERT, Attorney at Law, of the Law
25 Offices of GARDERE WYNNE SEWELL, LLP, 1000 Louisiana,

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1 A P P E A R A N C E S

2 (Continued)

3

4 Suite 3400, Houston, Texas 77002-5007, was present on
5 behalf of the defendant.

6

7 STEVEN E. MARQUES, Videographer, of DAN
8 MOTTAZ VIDEO PRODUCTIONS, LLC, 402 Dewey Boulevard,
9 San Francisco, California 94116, was present videotaping
10 the proceedings

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DEPOSITION OF OTTO WONG - VOLUME II 267

1 PROCEEDINGS 8:01 A.M.
2 THE VIDEOGRAPHER: This marks the beginning of
3 Volume 2, Tape 1, in the deposition of Dr. Otto Wong in
4 the matter of Mandy Staples, et al., versus Shintech,
5 et al. Today's date is March 13, 2002. All other
6 aspects from Tape 1 remain the same.
7 The time is 8:01. We're on the record.
8 OTTO WONG,
9 having been previously sworn as a witness by
10 the Certified Shorthand Reporter,
11 testified as follows:
12 EXAMINATION BY MR. STEWART (CONTINUED)
13 (Whereupon, Plaintiffs' Exhibit No. 12
14 was marked for identification.)
15 MR. STEWART: Q. Dr. Wong, I'm going to hand
16 you what's identified as Plaintiffs' Exhibit No. 12 and
17 ask you if this appears to be a copy of Clark Cooper's
18 paper of 1981.
19 A. Yes, it is.
20 Q. Okay. I just wanted to get that into the
21 record. I don't have any questions about it.
22 THE VIDEOGRAPHER: Can we go off the record for
23 just one second? Time is 8:02. We're off the record.
24 (Discussion off the record.)
25 THE VIDEOGRAPHER: Time is 8:03. We're on the
DEPOSITION OF OTTO WONG - VOLUME II 268

1 record.

2 (Whereupon, Plaintiffs' Exhibit No. 16
3 was marked for identification.)

4 MR. STEWART: Q. I realize that I'm skipping
5 numbers with my exhibits, but I'll go back and pick up
6 the others.

7 I'm now handing you what's identified as Wong
8 Exhibit No. 16 and ask you to tell me what that is,
9 please, sir.

10 A. It is a proposal for the update of the
11 epidemiologic study of vinyl chloride workers.

12 Q. It's probably made by EHA, the company that you
13 were working with at the time this proposal was drafted?

14 A. Just the time when I just joined EHA, right.

15 Q. And is this proposal something that you and
16 your colleagues submitted to the Chemical Manufacturers
17 Association in response for their call for proposals
18 from several different epidemiological firms?

19 A. Yes.

20 Q. I don't want to go over the proposal sentence
21 by sentence, but generally speaking, what is described
22 in this proposal? Do you tell CMA how you plan to go
23 about conducting your epidemiological study?

24 A. Yes.

25 Q. And do you make reference to the fact that this

1 is a follow-up study of the prior Cooper study?
2 A. Yes. It was an update of a previous study.
3 Q. Now, I notice on page 7 of this document, at
4 the very top, the first sentence is numbered 2:
5 "Provide full information (on new forms) for all
6 individuals who should have been included in the cohort,
7 but were not."
8 Then out beside it, it's got the word "delete."
9 Do you know if that was written by somebody
10 within your company or somebody within the Chemical
11 Manufacturers Association?
12 MR. COLBERT: Objection. Form.
13 THE WITNESS: I do not know. I don't recognize
14 the handwriting.
15 MR. STEWART: Q. Now, on page 13, "Task 7,
16 Distribute Study Forms to Plants."
17 Do you see that?
18 A. Yes.
19 Q. In -- and this Task 7, you're telling the
20 Chemical Manufacturers Association that it's the
21 intention of your company to distribute study forms for
22 all individuals included in the cohort from each plant,
23 and will be reviewed by the plants and sorted into four
24 groups, and then you list those four groups, do you not?
25 A. Yes, that's -- that would be one of the sources
DEPOSITION OF OTTO WONG - VOLUME II 270

1 of vital -- vital status information that we tried to
2 obtain in that study.

3 Q. All right. There's nothing in here that
4 mentions 1942, is there?

5 A. No.

6 Q. And on page 17, the -- the project staff is
7 identified, and Donald Whorton was to be the project
8 director and principal investigator?

9 A. Right.

10 Q. All right. Apparently, W. Clark Cooper, who
11 had done the previous study, was going to be working
12 with you to some extent on your study?

13 A. Yes.

14 Q. And the person who was going to be in charge of
15 the finances and budget and so forth was Mr. --
16 Mr. Davis, Richard L. Davis?

17 A. Yes.

18 Q. Is Mr. Davis an epidemiologist, or is he an
19 accounting-type person, or do you know what his
20 educational background is?

21 A. He was not a technical person. He was a
22 business person.

23 Q. Okay. And then it mentions the "Supervision of
24 the data collection, coding and keytaping will be the
25 responsibility of Kathleen Claxton," and

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1 "computerization of the data base and data analysis will
2 be the responsibility of Otto Wong."

3 Is that accurate?

4 A. Yes.

5 Q. And then, the "...biostatistical aspects of the
6 project will be performed by Dr. Wong and Ms. Jane
7 Schulman."

8 What is Ms. Jane Schulman's educational
9 background?

10 A. She was working as a programmer for us at that
11 time.

12 Q. Was she a college graduate?

13 A. Oh, yes. Yes.

14 Q. Do you know what her degree was in?

15 A. I believe she has a master degree in public
16 health.

17 Q. In public health?

18 A. Yes.

19 (Whereupon, Plaintiffs' Exhibit No. 15
20 was marked for identification.)

21 MR. STEWART: Q. Let me hand you what's
22 identified as Wong Exhibit No. 15 and ask you to tell me
23 what that is, please, sir.

24 A. It appears to be a table attached to a status
25 report dated 1985, looks like.

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1 Q. What's listed in that table?
2 A. All the locations in the -- in the study.
3 Q. All of the plants that were involved in the
4 study?
5 A. Yes.
6 Q. Did you ever visit any of those plants?
7 A. No, I did not.
8 (Whereupon, Plaintiffs' Exhibit No. 17
9 was marked for identification.)
10 MR. STEWART: Q. Now I'm handing you what's
11 identified as Wong Exhibit No. 17 and ask you to tell me
12 what that is, please, sir.
13 A. It appears to be a proposal for Mr. Davis to go
14 to Rockville, Maryland, to look at some old records from
15 the previous study, to determine -- I guess to get some
16 information to determine how much it would take to go
17 over the old records in order to perform the update.
18 Q. Okay. This Mr. Davis is the same R.L. Davis
19 that we just talked about who was in charge of budget
20 and financing for EHA?
21 A. Yes.
22 Q. Okay. What records were in Rockville,
23 Maryland?
24 A. I believe the data on the study subjects in the
25 Cooper study were still in some place here in Rockville,
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1 Maryland.

2 Q. Is that where Clark Cooper's office was at the
3 time he did his study?

4 A. No. The data -- actually, at that time, the
5 analysis was conducted by Equitable Environmental Health
6 Associates.

7 Q. You used to work for them?

8 A. I used to work for them, yes.

9 Q. Okay.

10 A. And they were located in Rockville, Maryland.

11 Q. Okay. So, back when Clark Cooper was doing his
12 study, he had gathered some records and sent them to
13 equitable in Rockville, Maryland. Equitable had done
14 some analyses of these records and reported their
15 results back to Clark Cooper?

16 A. Yes.

17 Q. And Equitable had kept the records in Rockville
18 and put them in storage?

19 A. Right.

20 Q. Okay. On page 2, where it's talking about
21 Task 2, I can read the words, but I'm not -- I don't
22 follow what it -- what it means. Tell me -- "...EHA's
23 Berkeley office" -- "Upon return to EHA's Berkeley
24 office, Mr. Davis will review his findings with W. Clark
25 Cooper and Thomas H. Milby, M.D."

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1 Review what findings?

2 A. Well, in order to perform the update, we need
3 to find out the status of the records. We need to look
4 at the data from the previous study in order to do the
5 update. If they're well organized, it makes our job
6 much easier. If they are not organized, well, then, it
7 takes more time. The whole purpose is to determine how
8 much effort had to go into looking at the data,
9 preparing the data for an update.

10 Q. Okay. Is Clark Cooper a medical doctor?

11 A. Clark Cooper, yes. It says M.D. after his
12 name.

13 Q. Yeah, I knew that it did, but I didn't know if
14 that was an error.

15 Is there any particular reason why the data was
16 going to -- that Mr. Davis went and got at Rockville and
17 brought back to Berkeley was going to be reviewed by two
18 gentlemen, Dr. Cooper and Dr. Milby, both of whom are
19 medical doctors as opposed to being biostatisticians?

20 A. There's no particular reason. The reason
21 Dr. Cooper was involved, because that was his study.

22 Q. Right.

23 A. We update his study, so obviously, we need to
24 talk to him about his data. That's obvious.

25 Dr. Milby, he was the president of

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1 Environmental Health Associates at that time, and he was
2 the one who was identified as the -- I guess the officer
3 or the key person at Environmental Health Associates
4 when the proposal was made to CMA.

5 Q. All right. Under Task 2, down under No. 2,
6 there's a mention of "to identify and analyze for PVC
7 dust and ethylene dichloride exposure or restrict
8 analysis to vinyl chloride exposure."

9 Was the study protocol limited to analysis to
10 vinyl chloride exposure?

11 A. Yes, the analysis was limited to vinyl
12 chloride.

13 Q. Okay. So, EHA did not undertake an analysis
14 to -- or undertake an effort to identify and analyze for
15 PVC dust and ethylene dichloride?

16 A. Well, that was under consideration, but that
17 was not -- I don't -- I don't know what happened to that
18 proposal, okay? That proposal was to -- should we look
19 at other substances besides vinyl chloride at those
20 locations, and I don't know what happened to -- whether
21 we don't have enough records to identify people exposed
22 to vinyl chloride as opposed to exposed to other
23 chemicals or, because of the budget, it was not
24 accepted. I don't know. I did not prepare this
25 document.

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1 Q. All right. Can you tell me why it was even
2 being considered to perhaps identify and analyze for PVC
3 dust?

4 A. Well, because vinyl chloride was the focus of
5 the investigation, and they would like to look at PVC
6 dust.

7 Q. All right. This has nothing to do with the
8 specific question of whether or not inhalation of PVC
9 dust is related to pulmonary disorders?

10 A. I don't know the rationale for that, but PVC
11 dust is an obvious exposure variable to look at.

12 Q. And do you know why it might have -- might have
13 been considered by your company to identify and analyze
14 for ethylene dichloride exposure?

15 A. I think I answered your question before, and
16 that is, in addition to vinyl chloride exposure, there
17 were other chemicals in many of those locations. And
18 ethylene dichloride was one of the other exposures. I
19 don't understand why that was singled out. I didn't
20 prepare the document. But I assume it's -- it was one
21 of the other exposures, and people may be interested in
22 that.

23 Q. Are you aware that the most -- well, one of the
24 methods for manufacturing vinyl chloride monomer is to
25 heat ethylene dichloride up above 700 degrees Fahrenheit
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1 and break out the vinyl chloride monomer from the
2 ethylene dichloride?

3 A. I don't know the industrial process.

4 Q. Okay.

5 (Whereupon, Plaintiffs' Exhibit 18 was
6 marked for identification.)

7 MR. STEWART: Q. I'm now handing you what's
8 identified as PX 18. Can you tell me what that is,
9 please, sir.

10 I've just got two. I'm sorry, I've got three.

11 A. It's a letter from Mr. Davis to Torkelson, who
12 was the chairman of the CMA Vinyl Chloride Program at
13 that time. The letter was dated May 15, 1979.

14 Q. Okay. On page 2 of Mr. Davis's letter, right
15 in the very middle of the page, Mr. Davis says:

16 "Before discussing proposal details, let me
17 review some of the imponderables which

18 mitigate against preparation of a
19 definitive study proposal at this time."

20 Do you see that sentence?

21 A. Yes.

22 Q. Can you tell me what a definitive study
23 proposal is, as opposed to some other type of study
24 proposal?

25 A. I assume at that time Mr. Davis did not have a

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1 good knowledge of all the data, the underlying data,
2 what kind of status the data were in, the records were
3 in, in order to prepare a definitive proposal in terms
4 of time and effort and money. He needed more
5 information.

6 Q. Okay. And what is Mr. Davis telling Ted
7 Torkelson in No. 1? I can read the words, but I don't
8 understand what he's talking about.

9 A. What he was saying -- and this was also
10 reported in Dr. Cooper's report -- that out of the
11 10,000 or so workers in the study, about one-third of
12 them were identified by the plant personnel with regard
13 to their exposure status.

14 Q. With what?

15 A. With regard to their exposure status.
16 The other 66 percent or so were based on a
17 review of the records by the original contractor,
18 meaning Clark Cooper's group at that time.

19 Q. All right. Now, tell me what that means. Does
20 that mean that Dr. Cooper got one-third of his data from
21 the plants filling out questionnaires and sending those
22 answered questionnaires back to him, as opposed to
23 Dr. Cooper and his colleagues going to the plant and
24 microfilming records?

25 A. Let me take a look.

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1 Q. Okay.

2 A. Yes, in Dr. Cooper's publication, he described
3 how the data were collected. For about two-thirds, 66
4 percent, of the study population, he actually sent
5 people out to the locations to copy personnel records,
6 employment records.

7 Q. As to -

8 A. And -

9 Q. As to approximately 66 percent?

10 A. That's 66 percent, two-thirds.

11 Q. Okay.

12 A. And for the remaining one-third, or 33 percent,
13 the exposed workers were identified by the companies.

14 Q. Okay. Now, turn the page to No. 3 -- to
15 page 3. And once again, I can read the words in No. 2,
16 but I don't know what it means. What does that mean?

17 A. Oh. Basically, No. 2 says that one of the
18 weakest aspects of the study, of the Clark Cooper study,
19 was the exposure classification in terms of high,
20 medium, and low. It was stated by Tabershaw and Gaffey,
21 even in their very first report, that the classification
22 of high, medium, and low was only relative to each other
23 within each location. The classification was not
24 standardized across locations, and that create a
25 problem, obviously, because one location's medium may be

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1 high in another location. So, that is not a good way of
2 doing classification of exposure, and they recognized
3 that, and Mr. Davis talk about that.
4 And indeed, when we update the Clark Cooper
5 study, we decided that that information is not
6 appropriate. We did not use that classification at all.
7 Q. Okay. You abandoned the procedure of
8 quantifying exposures by low, medium, and high in your
9 study; is that correct?
10 A. That's correct.
11 MR. COLBERT: Objection, form.
12 MR. STEWART: Q. Now, down in the paragraph
13 that's numbered 3, what is Mr. Davis telling us there?
14 A. Well, that refers to the same thing.
15 Q. All right. On page 4, in the second
16 paragraph -- well, on page 4 as a whole, is Mr. Davis
17 saying, in essence, therefore, based on the foregoing
18 reasons, EHA suggests that we do the study in a manner
19 which does not undertake to quantify exposures into
20 high, medium, and low, because really and truly, that
21 doesn't make a lot of sense when you're comparing
22 plants, because what might constitute high in Plant 1
23 perhaps would -- would be classified as low in Plant 3?
24 A. Where do you get that on page 4?
25 Q. Well, yeah. I mean, I'm just saying, is
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1 Mr. Davis in essence telling Torkelson that because of
2 the fact that we don't see any real value in sticking
3 with the quantification of high, medium, and low, as far
4 as exposure goes, we're proposing just to go to a
5 category of "exposed"?

6 MR. COLBERT: Objection. Form.

7 THE WITNESS: I don't think Mr. Davis make that
8 decision at that time.

9 MR. STEWART: Q. Well, it's --

10 A. It's not indicated in the letter.

11 Q. Is that what happened eventually?

12 A. Eventually, when we look at a study, when we
13 run the analysis, we decided -- as I told you, we
14 decided not to use that. But that was a much later
15 decision.

16 We recognized the limitations early on, as
17 Dr. Tabershaw and Dr. Gaffey, as well as Dr. Cooper,
18 pointed out a long time ago in their own papers, that
19 the classification may not be a hundred percent
20 accurate. And based on that, we decided not to use
21 that. Instead, we use other exposure indexes, such as
22 age at first exposure, time period of exposure. We used
23 those instead of the high, medium, and low.

24 (Whereupon, Plaintiffs' Exhibit 19 was
25 marked for identification.)

DEPOSITION OF OTTO WONG - VOLUME II

1 MR. STEWART: Q. I'm now handing you what's
2 identified as Plaintiffs' Exhibit No. 19, which appears'
3 to be a record of a meeting of the Vinyl Chloride
4 Research Coordinator Group of the Vinyl Chloride Program
5 Panel of the Chemical Manufacturers Association. And it
6 shows that you and Dr. Whorton were present.
7 Do you recall, not specifically this meeting,
8 but do you recall attending meetings of the Vinyl
9 Chloride Research Coordinator Group during that period
10 of time when you were making your proposals for a study
11 to the Chemical Manufacturers Association?

12 A. Yes.

13 Q. And according to this exhibit, Dr. Otto Wong
14 presented an update on Phase II of the epidemiological
15 studies.

16 Do you know what your update was that you
17 presented to the group? Can you tell from this
18 document?

19 A. We present the status at that time to the
20 group, the status of the project at that time.

21 Q. All right. This is actually reporting to the
22 CMA group results of analyses up to that point?

23 A. Basically, we described where the project was
24 at that time in terms of how many people we have found
25 out whether they are still alive or dead, how many death

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1 certificates we have obtained and so on. But we did
2 not -- we did not perform any mortality analysis, and we
3 did not present to the group at that time any results.

4 Q. Did you discuss with the group at this meeting
5 whether or not a system of reclassification should be
6 adopted?

7 A. I think there was some discussion on can we
8 make something out of the classification, make it -- if
9 we can modify it, can we make it into something more
10 meaningful. And the final conclusion was we won't be
11 able to do that. So, at the end, we did not use the old
12 classification of high, medium, and low.

13 Q. Okay. On page 2, down at the -- in the last
14 paragraph, next to the last sentence, was it the
15 conclusion at that meeting:

16 "In any system of reclassification, one
17 must look for both the false positives, as
18 well as the false negatives. The latter
19 was not done as no new individuals were
20 identified as needing to be added to the
21 cohort. In addition, at plant 39 two
22 previously unexposed jobs were reclassified
23 as exposed."

24 What is that talking about? I don't understand

25 "one must look for both the false positives as well as

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1 the false negatives."

2 MR. COLBERT: Objection. Form.

3 THE WITNESS: In other words, we are talking
4 about the potential problem of misclassification in
5 terms of exposure. And in any epidemiologic study,
6 there is always certain amount of misclassification. It
depends on how serious the problem is.

8 And in this case, we are talking about if we
9 use the old system, some people who were -- indeed were
10 exposed might have been classified as not exposed. But
11 the reverse might also have happened, okay? So, when we
12 talk about false positive, meaning that the system
13 classified that person as exposed, when indeed, that
14 person was not. And false negative would be the system
15 classified that person as unexposed, but indeed, that
16 person was exposed.

17 So, we have errors both ways, potentially.

18 And since we are not adding any new people to
19 the study because we make the decision of just updating
20 the same cohort in Clark Cooper's study, so any false
21 negative, okay, anybody who were classified as unexposed
22 when Clark Cooper did his study, we would never include
23 them in our update. So, since we didn't do that, we
24 decided not to go through the reclassification again.

25 MR. STEWART: Q. And that was certainly agreed

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1 to by the CMA representatives who were present at this
2 meeting, was it not?

3 A. That's true, yes.

4 (Whereupon, Plaintiffs' Exhibit 20 was
5 marked for identification.)

6 MR. STEWART: Q. I'm now going to hand you
7 what's identified as Plaintiffs' Exhibit No. 20 and ask
8 you to tell me what that is, Dr. Wong.

9 A. Well, the first two pages represent a bimonthly
10 progress report of our study.

11 Q. Okay. You've already gotten your contract
12 signed with CMA. This document says that that happened
13 March 11, 1982. And so this is a progress report that
14 you and your company submitted after you had signed your
15 contract with CMA?

16 A. Yes. The contract was signed on March 11th,
17 and the progress report was dated May 18th. So, two
18 months after the contract was signed.

19 Q. Now, over on pages 3 and 4, these appear to be
20 questionnaires seeking information. Tell me about
21 these. What -- who prepared these questionnaires, and
22 who were they sent to to be filled out?

23 MR. COLBERT: Objection. Form.

24 THE WITNESS: In the Cooper study, not everyone
25 in the study had a Social Security number in the

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1 database. Some companies did not provide Social
2 Security number or name to Clark Cooper because of
3 confidentiality. I don't know what kind of policy they
4 have with the company.

5 MR. STEWART: Q. Do you know which companies
6 that was?

7 A. I don't know. This -- there's some individuals
8 in the study that do not have a name or a Social
9 Security number in the database.

10 When we did our update, we need that
11 information. We need the personal identifier -- the
12 name, the Social Security number -- in order to obtain
13 vital status information from external sources, such as
14 the Social Security Administration, the National Death
15 Index.

16 And this questionnaire, the purpose of this
17 questionnaire was trying to obtain the personal
18 identifiers from those companies so that we can do an
19 external follow-up on those individuals.

20 Q. Did any of the companies to whom you sent this
21 form refuse to fill it out and provide you all of the
22 personal identifiers that you were seeking?

23 A. We ran into some difficulties. Some companies,
24 some plants, decided not to spend the time to look up
25 the information for us.

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1 The other problem is we are talking about a
2 time lapse of 10, 15 years between our update and Clark
3 Cooper's data collection in the first study. And all we
4 provide to the plant was a study number. That's the
5 only identification we have. And some plants, they did
6 not keep a copy of that ID number and the name and the
7 Social Security number, so they have no way of going
8 back to identify who that person was, based on our study
9 ID number.

10 Q. Uh-huh.

11 A. The key was gone -- to this was gone.

12 And we tried to tell them, please try to
13 identify the individual by looking at their hire date,
14 birth date. With that you can -- you know, with those
15 two dates, maybe you can identify that individual. And
16 some companies reported -- replied by saying that it
17 just take too much time. We can't do that. We cannot
18 go through all the records for the last 40, 50 years
19 just looking at the birthday and the hire day just to
20 match up these people.

21 In fact, one of the letters that you showed me
22 yesterday was exactly that: The person replied by
23 saying if we don't give you the information and you
24 don't update our group, what kind of impact it would
25 have on your study. What they are trying to say is, my

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1 group is so small, the number of people from our
2 location is so small, maybe it doesn't matter that much.
3 Indeed, we pointed out in our report that 803
4 workers were not updated in our update. In other words,
5 their vital status remained the same as in the previous
6 study, and we cut off the person years of observation
7 from that time on.

8 Q. In addition to some of the companies telling
9 you that it was just too much trouble for them to go
10 through, you also got responses in the form of the
11 letter from Torkelson that we looked at last night,
12 where he said it was Dow's policy not to furnish
13 information on certain Michigan employees who were still
14 living.

15 Do you recall that letter that we looked at?

16 A. Yes.

17 (Whereupon, Plaintiffs' Exhibit 21 was
18 marked for identification.)

19 MR. STEWART: Q. I'm now going to hand you
20 what's been identified as Wong Exhibit No.

21. And I believe this is just a copy acknowledging that your
22 contract with CMA had been consummated.

23 Is that accurate?

24 A. Yes.

25 Q. Did you tell me yesterday that you knew who

1 Carol Stack was?
2 A. Yes. She was a -- what we call a program
3 manager at CMA.
4 (Whereupon, Plaintiffs' Exhibit No. 13
5 was marked for identification.)
6 MR. STEWART: Q. I'm now going to hand you
7 what is --
8 MR. COLBERT: Being altered.
9 MR. STEWART: Q. -- what is being altered, but
10 the alteration amounts to a mere transferal of a tab
11 from one document to another document which is one and
12 the same.
13 I hand to you what's identified as Plaintiffs'
14 Exhibit No. 13 and ask you to take a look at that.
15 And I only have two of these.
16 This is a letter that's obviously from the
17 Chemical Manufacturers Association, dated June 8, 1982,
18 and it reflects on the second page, does it not, that a
19 copy was sent to you at EHA?
20 A. What's that? I'm sorry.
21 Q. I said this purports to be a letter from the
22 Chemical Manufacturers Association, dated June 8, 1982,
23 and on the second page, it indicates that a copy of this
24 letter was sent to you at EHA?
25 A. That's what it says, yes.
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1 Q. And it also indicates that a copy was sent to
2 Ted Torkelson at Dow, does it not?

3 A. That's what it says.

4 Q. All right. Do -- do you have any recollection
5 of having known or met this G.E. Disch, D-I-S-C-H,
6 general manager of Tenneco Chemicals?

7 A. No, I never met him or her. Him, I guess.

8 Q. This letter is signed by Carol R. Stack. This
9 is the same Carol R. Stack that you told me a minute ago
10 was Vinyl Chloride Program administrator for the CMA; is
11 that correct?

12 A. She was the administrator for that program at
13 that time.

14 Q. All right. In the very first paragraph, the
15 name Donald Hunter is mentioned. Is that a name with
16 which you're familiar?

17 A. No.

18 Q. Okay. In the second paragraph, Ms. Stack is
19 apparently reminding Mr. Disch that an original study
20 was done under contract to Tabershaw/Cooper Associates
21 and Equitable Environmental Health. Final report was
22 released in '78. Study consisted of a population of
23 approximately 10,000, so forth.

24 Down in the third paragraph, in the last --
25 well, let me read the third paragraph:

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1 "When the final report was issued, EEH
2 suggested that the population be studied
3 again within 5 years to clarify questions
4 about cancer at sites other than the liver.
5 Accordingly, major U.S. procedures of VCM
6 and PVC, including Tenneco, came together
7 under CMA and committed funds for a
8 seven-year update."
9 Was that your update or Cooper's update, or can
10 you tell?
11 A. Neither one. I mean, at that time they were
12 talking about -- well, let's go back. EEH recommended
13 an update after five years.
14 Q. Uh-huh.
15 A. And the next time it says that CMA was
16 considering a seven-year update, so it move from the
17 five to the seven.
18 When we actually update Clark Cooper's study,
19 it was a 10-year update.
20 Q. Okay. Now, the last sentence in that third
21 paragraph reads this: "The producers" -- that would
22 refer to the companies that produce vinyl chloride
23 products? Would that be correct?
24 A. I would assume that's correct, yes.
25 Q. -- "felt strongly that a good retrospective
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1 mortality study would be an invaluable reference in
2 future vinyl chloride litigation."

3 Did Ms. Stack or anybody else with CMA ever
4 have discussions with you about the fact that these
5 vinyl chloride studies that CMA was sponsoring and
6 paying for would, among other things, be a good
7 retrospective mortality -- would represent a good
8 retrospective mortality study that would be an
9 invaluable reference in future vinyl chloride
10 litigation?

11 MR. COLBERT: Objection. Form

12 THE WITNESS: I don't disagree with that
13 statement because litigation should be based on good
14 science, and if CMA is going to sponsor a study so that
15 we can have good science, so be it.

16 MR. STEWART: Q. Now, my question was, did
17 anybody from the Chemical Manufacturers Association,
18 whether it was Ms. Stack or anybody else, discuss with
19 you that one of the reasons that CMA was undertaking
20 these vinyl chloride studies was to gain invaluable
21 reference in future vinyl chloride litigation?

22 MR. COLBERT: Objection. Form.

23 THE WITNESS: No, sir. No, they did not.

24 MR. STEWART: Q. So, you didn't know that that
25 was one of the purposes that CMA had in mind for doing

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1 these studies?
2 MR. COLBERT: Objection, form.
3 THE WITNESS: They never talked to me about
4 that.
5 (Whereupon, Plaintiffs' Exhibit No. 14
6 was marked for identification.)
7 MR. STEWART: Q. Okay. Now going to hand you
8 what's identified as Wong Exhibit No. 14. I'll ask you
9 if you can tell me what that is, please, sir.
10 A. This is a cover letter that went out with those
11 forms that we talked about to obtain information, such
12 as name and Social Security number.
13 Q. This cover letter went to a gentleman by the
14 name of Ralph Ferrel, plant manager with Conoco in
15 Westlake, Louisiana; correct?
16 A. Yes.
17 Q. And the letter is signed by you; is that
18 correct?
19 A. Actually, that doesn't look like my signature.
20 I think we send the form out to many plants,
21 and I believe the project manager, Kathleen Claxton,
22 actually signed that letter for me. But I look at the
23 letter. I didn't sign on the letter.
24 Q. She had your permission to sign this letter?
25 A. Right. Right.

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1 Q. Okay. And in this letter, in the second
2 paragraph, last sentence, you state, do you not -- or
3 your assistant, with your approval -- states:
4 "The producers felt strongly that a good
5 retrospective mortality study would be an
6 invaluable project from both the medical
7 and legal points of view."
8 Did I read that correctly?
9 A. Right.
10 MR. STEWART: Let's go off of the record.
11 We've been going for a little more than an hour, and the
12 court reporter is not getting any younger, and her
13 fingers are hurting.
14 THE VIDEOGRAPHER: Time is 9:03. We're off the
15 record.
16 (Recess taken: 9:03 a.m. until 9:12 a.m.)
17 THE VIDEOGRAPHER: Time is 9:12. We're on the
18 record.
19 MR. STEWART: Q. Dr. Wong, back during the
20 time you and your colleagues at Environmental Health
21 Associates were doing your follow-up study of the vinyl
22 chloride workers, do you have any specific recollection
23 of the reporting of some brain tumors at the Union
24 Carbide plant in Texas City? Not the one in
25 South Carolina, but the Union Carbide plant at
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1 Texas City?

2 A. I don't recall the details.

3 Q. Okay.

4 Do you know or have you ever known a person by

5 the name of Gordon S. Siegal, medical doctor?

6 A. The name sounds familiar.

7 (Whereupon, Plaintiffs' Exhibit 22 was

8 marked for identification.)

9 MR. STEWART: Q. Okay. I'm going to hand you

10 what's identified as Wong Exhibit 22, which is --

11 appears to be on stationery of the Equitable

12 Environmental company that you had once worked for. It

13 is an interoffice memorandum dated March 13, 1979.

14 And I only have one copy.

15 But take a look at that, and my question is,

16 does that memorandum make reference to somebody at

17 Equitable getting a telephone call from a woman

18 purporting to be a reporter, wanting to know why brain

19 tumors had not been -- brain tumors from Union Carbide

20 in Texas City had not been included in -- I guess it

21 would have been Clark Cooper's study?

22 A. Right.

23 MR. COLBERT: Objection. Form.

24 MR. STEWART: Q. Okay. Do you have any -

25 THE REPORTER: I'm sorry. Was there an answer

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1 to the question?

2 MR. STEWART: I think he said "right."

3 THE REPORTER: You know, I actually wrote that
4 down, but I didn't remember that I did.

5 MR. STEWART: Q. Now, are the names that
6 appear within that memorandum names that you recognize?

7 A. Well, I don't recognize the name of the woman.

8 Q. Right.

9 A. The reporter who called Dr. Siegal.

10 Q. Uh-huh.

11 A. I think Dr. Siegal may be the replacement of
12 Michael Utidjian at Equitable Environmental Health,
13 after Dr. Michael Utidjian left the company and joined
14 Union Carbide.

15 Q. All right. Are there any other names in that
16 memorandum that you recognize?

17 A. I'm trying to find what other names there are
18 on that page. I couldn't find it.

19 What other names are you referring to?

20 Q. Well, I don't have a copy of it. Are there any
21 other names in the memorandum, other than Siegal and the
22 woman who called?

23 A. And Mike Utidjian, Michael Utidjian.

24 Q. Mike Utidjian?

25 A. We talked about all three names.

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1 Q. Do you know one way or the other if there had
2 been some documented brain tumors found among workers at
3 the Union Carbide plant in Texas City that had not been
4 included in Clark Cooper's final report?

5 A. Well, in order to determine whether somebody is
6 in the study or not, we have to look at the definition,
7 okay? Number one, without looking at the list of the
8 participating plants, I don't even know whether this
9 location was one of them or not.

10 Q. Well, look at your list and see. It's probably
11 about No. 25.

12 A. Twenty-five? You're off by 10. It's 15.
13 Union Carbide, Texas City, yes.

14 Q. Okay.

15 A. Okay. Then we have to look at when the person
16 worked and how long he worked. Because the definition
17 was the minimum length of employment got to be at least
18 one year.

19 Q. Right.

20 A. And also work sometime after 1942. Okay. And
21 when Dr. Cooper did collect the data, I believe the
22 cut-off date was 1972. He actually went out and
23 collected data around that time. So, anybody who were
24 hired after 1972 would not be included. Anybody who
25 terminate his employment before 1942 would not be

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1 included as well.

2 Q. Why is that? I'm still -- I'm still at a loss
3 to understand where this 1942 comes in.

4 A. Okay. The 1942, we have to determine -- when
5 we define a cohort, we need to know what kind of
6 employees we should include in terms of length of
7 employment. Do we want to include anybody who ever
8 worked there, even for people who worked there for only
9 one day? In most studies, we do not, because people who
10 work only one day may not provide much information
11 because they may spend the rest of their career on -- in
12 another industry. Okay?

13 The 1942, I believe, according to the documents
14 that we looked at yesterday, I believe, some records and
15 some companies were not complete before 1942.

16 Q. Would that have been Union Carbide's plant in
17 South Carolina?

18 A. That I don't know. I don't know.

19 Q. Okay.

20 A. Dr. Cooper mentioned that some records were not
21 complete before 1942, and therefore, in order not to
22 introduce any bias into the study, we started -- he
23 started the study from the time with complete records.

24 Q. Well, do you have any knowledge that there
25 were, in fact, employees working within the vinyl

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1 industry before 1942, and that in all probability, those
2 employees working back during that time got much higher
3 exposures than did employees who worked throughout the
4 140s, 150s and 160s?

5 MR. COLBERT: Objection. Form.

6 THE WITNESS: Most likely is true. The
7 exposure in the early days would be higher than the
8 subsequent years.

9 MR. STEWART: Q. Do you know what area of
10 these participating plants provided the greatest
11 potential for vinyl chloride monomer exposure, or what
12 jobs?

13 A. Well, remember we talk about the classification
14 provided by the plants -- high, medium and low -- and we
15 look at them and decided not to use them.

16 Q. Uh-huh.

17 A. That is the extent of my knowledge of the
18 previous classification.

19 Q. Okay. You've never -- you don't recall ever
20 seeing any documents that talked about workers who
21 cleaned kettles as being that group which was documented
22 as getting the highest exposures?

23 A. I might have seen some job titles classified by
24 the plants as high exposure or medium exposure, low
25 exposure, but certainly, I don't remember those job

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1 titles now.

2 Q. Okay. Matter of fact, you told me yesterday
3 this is the one and only study that you've ever done on
4 vinyl chloride, isn't it?

5 A. This is the study that I am the PI -- one of
6 the PIs -- principal investigator -- together with
7 Dr. Whorton.

8 When I was at Georgetown, Chiazze -

9 Dr. Chiazze also did a study of -- matter of fact, let
10 me -- let me take a look.

11 We did a proportional mortality study of PVC
12 fabricators. And at that time, I just joined
13 Dr. Chiazze, and I also worked on the study. But
14 Dr. Chiazze was the principal investigator in that
15 study.

16 Q. Okay. Now, a PVC fabricator or a person who
17 works in a PVC fabricating plant would be working in a
18 plant that receives polyvinyl chloride and converts it
19 into a finished product; is that correct?

20 A. I don't remember the details.

21 Q. There's not a lot of exposure at those plants,
22 is there?

23 A. I don't remember the details.

24 (Whereupon, Defendant's Exhibit 23 was
25 marked for identification.)

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1 MR. STEWART: Q. I hand you what's been
2 identified as Wong Exhibit No. 23. Tell me what that
3 is.

4 A. I think this is another cover letter that went
5 out with the forms that we want the companies to fill
6 out to provide the information that we need to do
7 follow-up.

8 Q. Well, this is a letter from a gentleman by the
9 name of Robert S-C-H-N-A-T-T-E-R, biostatistician for
10 Union Carbide --

11 MR. COLBERT: Vaughan, I think we are looking
12 at the wrong document. The document that Dr. Wong is
13 looking at is a letter with -- on Environmental Health
14 Associates, Inc. letterhead, signed by him.

15 MR. STEWART: Q. Okay. What does your letter
16 say?

17 A. My letter says, "Dear Susan." Is a letter from
18 me to Dr. Austin, Dr. Susan Austin.

19 Q. Who is that?

20 A. She was the corporate director of epidemiology
21 at Union Carbide.

22 Q. All right. What did you say to her in the
23 letter? I don't have another copy of it.

24 A. This is another cover letter that went out with
25 those forms that we talk about.

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1 Q. What is the date on that letter?

2 A. August 17th, 1982.

3 Q. Okay. And what did you say to Susan?

4 A. I asked her to provide the information to us to
5 fill out the forms so that we can do update.

6 Q. And she's at Union Carbide?

7 A. Yes.

8 Q. And you were wanting her to provide you with
9 forms on both the Carbide plant in South Carolina as
10 well as the Carbide plant in Texas City?

11 A. Yes.

12 Q. Okay.

13 (Whereupon, Plaintiffs' Exhibit 24 was
14 marked for identification.)

15 MR. STEWART: Q. I'm now handing you what's
16 identified as Plaintiffs' Exhibit No. 24. Does that
17 appear to be a letter to you, dated January 21, 1983,
18 signed by the Union Carbide biostatistician Robert
19 Schnatter?

20 A. Yes.

21 Q. Did you ever know him?

22 A. Yes, I know Dr. Schnatter.

23 Q. How is it that you were acquainted with
24 Dr. Schnatter?

25 A. At that time, Dr. Schnatter was working at

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1 Union Carbide, in Dr. Austin's group.

Q. What is Dr. Austin's group?

A. She was the corporate director of epidemiology,
so her group would be the epidemiologic group at Union
5 Carbide.

6 Q. So, Union Carbide had its own epidemiological
7 group?

8 A. Yes.

9 Q. And where -- was -- were they officed in
10 South Carolina?

11 A. No. They're in Connecticut.

12 Q. Connecticut?

13 A. Yes.

14 Q. In addition to Susan Austin and Robert
15 Schnatter, did you know anybody else that was a member
16 of that group?

17 A. Well, Michael Utidjian was a medical director
18 at Union Carbide at that time. I don't know whether he
19 also worked in that group or not.

20 Q. Did you ever see any -- the results of any
21 epidemiological study performed by that group?

22 A. They publish papers of their studies.

23 Q. On what?

24 A. Of Union Carbide employees.

25 Q. Okay. Union Carbide employees who were exposed

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1 to some type of chemical?

2 A. Yes. %

3 Q. What type of chemical?

4 A. I don't know.

5 Q. Did you see -- did they publish more than one
6 paper?

7 A. They published many papers.

8 Q. Were any of -- any of the papers concerned with
9 Union Carbide employees exposed to vinyl chloride?

10 A. I have not gone through all the papers. I
11 don't know.

12 Q. Hmm?

13 A. I don't know, I said.

14 Q. So, the -- the Susan Austin group at
15 Union Carbide, would that group be much like your group
16 at Environmental Health Associates?

17 A. No. Yesterday I told you that our group at
18 Environmental Health Associates, we have toxicologist,
19 we have industrial hygienist, nurse, and so on. Her
20 group was basically epidemiology.

21 Q. Okay. Well, in this letter that -- let me back
22 up.

23 Did you meet Robert Schnatter at a time when he
24 was employed by Union Carbide as a member of Susan
25 Austin's group, or had you met him when he worked in

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1 some other capacity?

2 A. I have met Dr. Schnatter many, many times, and
3 I don't remember whether I met him around that time when
4 he was employed at Union Carbide.

5 Q. Who else has he worked for?

6 A. He's working for ExxonMobil now.

7 Q. Do you know if he left Union Carbide and went
8 directly to ExxonMobil?

9 A. I believe that was the case.

10 Q. Do you know who he worked for before he went
11 with Union Carbide?

12 A. Union Carbide might have been his first job,
13 his first professional job after school.

14 Q. Have you talked to him face to face?

15 A. Ever, in my life?

16 Q. Yes.

17 A. Yes.

18 Q. On how many occasions would you guess?

19 A. I don't remember how many occasions.

20 Q. I mean -- sounds like you might be pretty good
21 friends. Do the two of you get together periodically,
22 or do you see him at meetings or --

23 A. I saw him at meetings, yes.

24 Q. Okay. Do you even at this date correspond with
25 him?

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1 A. We are working on a project on benzene,
2 sponsored by API. I think I told you that yesterday.
3 And
4 Q. You told me that you were working with Robert
5 Schnatter yesterday?
6 A. No, I did not.
7 Q. Okay.
8 A. I said I'm working on a benzene project
9 sponsored by API, and I told you that yesterday. And
10 Dr. Schnatter
11 Q. I appreciate that. Thank you.
12 A. Dr. Schnatter is also involved in that project.
13 Q. And that project is sponsored by API, and is it
14 a project wherein you and Dr. Schnatter and others are
15 doing an epidemiological study of a cohort exposed to
16 benzene?
17 A. No. We are doing a case-control study.
18 Q. Honing in on a particular disease process?
19 A. Yes.
20 Q. What?
21 A. Leukemia and non-Hodgkin's -- leukemia and
22 non-Hodgkin's lymphoma.
23 Q. Any particular type of leukemia?
24 A. We are interested in acute myeloid leukemia.
25 Q. And the persons who are being studied in this
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1 benzene study, are they employees of petroleum plants?

2 A. Not very likely. We are doing the study in

3 Shanghai, China. We are doing a case-control study.

4 The study subjects would be leukemia patients,

5 non-Hodgkin's lymphoma patients, and their controls. I

6 don't think there is a refinery in Shanghai, so most

7 likely we would not run into employees of refineries.

8 Q. Where would the folks who are being studied in

9 Shanghai have conceivably gotten their exposure to

10 benzene?

11 A. Any workers who use solvents with benzene in it

12 would have -- would have exposure to benzene.

13 Q. And you are of the opinion, are you not, that

14 chronic exposures to low levels of benzene does not

15 cause acute myeloid leukemia?

16 A. If you tell me what you mean by "low."

17 Q. Well, I don't have any earthly idea.

18 So, as far as the Union Carbide plant in

19 Texas City and the brain tumors that were mentioned in

20 the document wherein it was described that a woman had

21 placed a call to Equitable and wanted to know if and why

22 some brain tumors had been excluded from a

23 epidemiological study, if those brain tumors in

24 Texas City had been documented, do you have any

25 knowledge that they ever ended up in any study, whether

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1 it was your study or somebody else's study?
2 MR. COLBERT: Objection. Form.
3 THE WITNESS: I have no idea.
4 MR. STEWART: Q. Are you aware that the
5 federal government was looking at -- at those particular
6 employees who had been diagnosed with brain tumor in
7 Texas City?
8 MR. COLBERT: Objection. Form.
9 THE WITNESS: I remember NIOSH looking to that.
10 MR. STEWART: Q. Do you have any recollection
11 that NIOSH ever did a study, rendered a report about
12 those employees who worked for Union Carbide in
13 Texas City and had been diagnosed with brain tumor?
14 A. I remember some reports.
15 Q. What do you remember?
16 A. I remember some reports published by scientists
17 at NIOSH. I don't remember the details.
18 Q. You don't remember what the reports said?
19 A. No, I do not.
20 Q. Would those Union Carbide Texas City employees
21 who had been diagnosed with brain tumor have been part
22 of the cohort that you studied?
23 A. I would not know unless we have the identifying
24 information and match up with our cohort. The fact that
25 somebody works there, may or may not be in the cohort
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1 because that person may or may not be exposed to vinyl
2 chloride.

3 Q. So, the answer is you don't know?

4 A. We don't know.

5 Q. Do you recall, as of the time you first got
6 involved in doing your vinyl chloride study, what the
7 OSHA air standard was for vinyl chloride?

8 A. No, I don't.

9 Q. Have you ever known?

10 A. I must know the number sometime when I was -
11 when I was working on that project. But that was many
12 years ago.

13 Q. Do you know what the standard is today?

14 A. No, I don't.

15 Q. Have you ever heard of a medical disorder
16 called acroosteolysis?

17 A. No.

18 Q. You have never read any studies that were done
19 on vinyl chloride workers to determine whether or not
20 they had a disease called acroosteolysis?

21 A. No, I have not.

22 Q. Is it your belief, after the involvement that
23 you've had with vinyl chloride, that vinyl chloride, if
24 it's going to cause any medical disorders in humans,
25 it's a result of the vinyl chloride or one of its

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1 metabolites attacking and damaging the interior of the
2 blood vessels in the body?
3 MR. COLBERT: Objection. Form.
4 THE WITNESS: I don't know the mechanisms.
5 MR. STEWART: Q. Well, I know you don't. But
6 have you ever heard that that's what happens when vinyl
7 chloride does have an adverse effect upon the human
8 body, is that it attacks the interior lining of. the
9 blood vessels?
10 MR. COLBERT: Objection. Form.
11 THE WITNESS: That's not my area of expertise.
12 I would not be able to answer you.
13 (Whereupon, Plaintiffs' Exhibit 25 was
14 marked for identification.)
15 MR. STEWART: Q. Okay. I'm going to hand you
16 what's identified PX 25, which, on the inside page,
17 claims to be an Epidemiological Investigation of Poly --
18 of the Polyvinyl Chloride Industry in Reference to
19 Occupational Acroosteolysis.
20 Do you see that?
21 A. Yes.
22 Q. Done by whom?
23 A. Are you asking me a question?
24 Q. Yes, sir.
25 A. I thought you said "done by whom."
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1 Q. Who performed the study, according to this
2 document?

3 A. Well, the title page says the Institute of
4 Industrial Health at the University of Michigan.

5 Q. To your knowledge, is there an Institute of
6 Industrial Health at the University of Michigan?

7 A. I don't know.

8 Q. And the date of this document is February of
9 1969, is it not?

10 A. That's what it says.

11 Q. And it purports to be a confidential report to
12 the Medical Advisory Committee of the Manufacturing
13 Chemists Association.

14 Do you see that?

15 A. That's what it says.

16 Q. Is it your belief and understanding that the
17 Chemical Manufacturers Association was previously known
18 as the Manufacturing Chemists Association?

19 A. That's my understanding.

20 Q. All right. Now, on page -- and I to have use
21 the Bates stamp number at the bottom -- 072, at the top
22 it says "Section I, Introduction."

23 Do you see that?

24 A. Yes.

25 Q. "Between 1961 and 1963, a bizarre,
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1 previously undescribed syndrome gradually
2 emerged within a polyvinyl chloride
3 synthesis plant in the United States."
4 And it goes on to describe that the -- the
5 effects that this bizarre, undescribed syndrome has on
6 the body may be a clubbing of the tips of the fingers,
7 could be skin lesions, Reynaud's phenomenon, bony
8 lesions and so forth.
9 And the CMA sponsored this study of plants that
10 were in the business of manufacturing PVC or VCM, to
11 determine the extent, if any, to which the employees in
12 these plants suffered the effects of this bizarre,
13 heretofore undefined syndrome. And you are telling me
14 that you have never heard about that study?
15 MR. COLBERT: Objection. Form.
16 THE WITNESS: That's correct.
17 MR. STEWART: Q. Okay. Can you tell from
18 flipping through this document if this is the same or
19 similar type of study that you later performed for the
20 Chemical Manufacturers Association on vinyl
21 chloride-exposed workers?
22 A. I don't believe so. Ours was a historical
23 cohort mortality study, and this is obviously not.
24 Q. What -- what is this?
25 A. I don't know.

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1 Q. Well, from looking at it, you can't tell what
2 type of study this is?

3 A. You asked me to flip through a report with
4 100-and-some pages and tell you in a couple minutes what
5 this study is about? I cannot do that.

6 Q. Can you go so far as to tell me that it's an
7 investigation into the question of whether or not
8 workers in vinyl chloride plants suffered the effects of
9 this syndrome known as acroosteolysis?

10 MR. COLBERT: Objection. Form.

11 THE WITNESS: I assumed that was the objective
12 of the study, just looking -- just based on the title of
13 the project.

14 MR. STEWART: Q. And would it make sense to
15 you that the people from the University of Michigan who
16 did the study would have had to at least identify some
17 sort of a cohort in order to know who to study?

18 A. I don't know their study design, so I cannot
19 comment on that.

20 Q. Well, I mean, they obviously would not have
21 been interested in going to plants or other locations
22 where there was no vinyl chloride and undertaking to do
23 x-ray exams and all sorts of other medical tests to
24 determine if any of the people had a vinyl
25 chloride-related syndrome. That wouldn't make any

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1 sense, would it?

' 2 MR. COLBERT: Objection. Form.

3 THE WITNESS: I don't know what they did, so I
4 cannot comment on it.

5 MR. STEWART: Q. All right. So, if you're
6 trying to determine whether or not vinyl chloride causes
7 osteoac -- acroosteolysis, what you have to do is look
8 at people who have had vinyl chloride exposure., do you
9 not?

10 MR. COLBERT: Objection. Form.

11 THE WITNESS: As I said, I don't know how they
12 identify their study subjects, so I cannot comment on
13 that.

14 MR. STEWART: Q. Well, I mean, if the question
15 is, is there a relationship between exposure to vinyl
16 chloride and the disease acroosteolysis, isn't it
17 logical to assume that the people that you would look at
18 would be a study group who had had exposure to vinyl
19 chloride?

20 MR. COLBERT: Objection. Form.

21 THE WITNESS: Of course, if you want to study
22 the effect of exposure to certain chemical, you got to
23 study persons with exposure to the chemical.

24 But what I'm trying to say is, if you make
25 reference to this particular investigation, I cannot

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1 comment on that. The general question, yes, I will
2 agree with you. /How they apply to this study, I don't
3 know, because I have never look at this study before.
4 MR. STEWART: He's got to change tapes, so
5 we'll have to go off the record.
6 THE VIDEOGRAPHER: This marks the end of
7 Volume 2, Tape 1, in the deposition of Dr. Otto Wong.
8 The time is 9:50. We are off the record.
9 (Recess taken: 9:50 a.m. until 10:01 a.m.)
10 THE VIDEOGRAPHER: This marks the beginning of
11 Volume 2, Tape 2, in the deposition of Dr. Otto Wong.
12 The time is 10:01. We're on the record.
13 MR. STEWART: Q. Okay. Dr. Wong, despite the
14 preparation by the folks at the University of Michigan
15 of this 105-page document, which talks about possible
16 causal relationship between vinyl chloride and a disease
17 process known as acroosteolysis, you have just never
18 heard of that disease or heard of that study; is that
19 correct?
20 A. That's correct.
21 Q. And again, this document is dated back in
22 February of 1969, is it not?
23 A. That's what it says.
24 THE REPORTER: Do you want me to mark more
25 tags?
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1 THE VIDEOGRAPHER: Want me to go off the record
2 for a second?
3 MR. STEWART: Yeah.
4 THE VIDEOGRAPHER: Time is 10:03. We're off
5 the record.
6 (Discussion off the record.)
7 THE VIDEOGRAPHER: The time is 10:04. We're on
8 the record.
9 (Whereupon, Plaintiffs' Exhibit No. 26
10 was marked for identification.)
11 MR. STEWART: Q. All right. I'm now handing
12 to you what is identified as Plaintiffs' Exhibit No. 26,
13 and this purports to be a "Vinyl Chloride
14 Carcinogenicity: Available Scientific Evidence and
15 Control Measures," prepared by Professor Cesare Maltoni.
16 You told me yesterday that you had at least
17 heard that name, did you not?
18 A. I did.
19 Q. Hmm?
20 A. I did.
21 Q. Did you ever read any of the publications that
22 Dr. Maltoni wrote on the subject of causal relationship
23 between vinyl chloride exposure and cancer in laboratory
24 animals?
25 A. I'm not a toxicologist, so I really don't

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1 understand all the technical aspects of
2 Professor Maltoni's experiments. But I was aware of
3 what he was doing, and basically, I was aware of the
4 results of his studies. But I would not be able to
5 comment on the details of how he did his experiment.

6 Q. You took a course, I believe you told me, in
7 toxicology?

8 A. Yes.

9 Q. Can you tell me as a general proposition why
10 toxicologists perform tox studies of various and sundry
11 chemicals on lab animals?

12 A. The rationale behind that is if we see a
13 substance that can produce tumors in lab animals, in
14 experimental animals, we should look at the effects of
15 that chemical in humans. It's kind of like setting the
16 priority what we should do in humans.

17 Q. Okay. And as a matter of fact, within industry
18 in the United States, the Dow Chemical Company has had
19 for many, many years, a very fine toxicology lab in
20 Midland, Michigan, have they not?

21 MR. COLBERT: Objection. Form.

22 THE WITNESS: I know that they have a lab
23 there.

24 MR. STEWART: Q. Have you ever been to
25 Midland, Michigan?

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1 A. Yes, I have.
2 Q. For -- how many times have you been there?
3 A. Maybe once. Maybe once.
4 Q. Why did you go to Midland, Michigan?
5 A. When I was working for Biometric Research
6 Institute, we had a project with Dow Corning, some kind
7 of intraocular lens implant, a clinical trial study.
8 Q. And did you just visit the Dow Corning plant,
9 or did you have occasion to go over and visit the Dow
10 Chemical plant while you were there?
11 A. We didn't even visit any plant. We had a
12 meeting there.
13 Q. And where did you have your meeting?
14 A. In a conference room.
15 Q. At -
16 A. At Dow Corning.
17 Q. -- the hotel?
18 A. At Dow Corning.
19 Q. Oh, at Dow Corning. Okay.
20 I assume that you are aware that the corporate
21 headquarters of the Dow Chemical Company is in Midland,
22 Michigan --
23 A. Yes.
24 Q. -- are you not?
25 That's where Ted Torkelson lived and worked?
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1 Are you familiar with that?

2 A. I don't know that.

3 Q. You don't know where he worked

4 A. He worked in Midland, Michigan, but I don't

5 know where he lives.

6 Q. Do you know whether he was a toxicologist?

7 A. I believe he was a toxicologist by training.

8 Q. Did you ever have occasion to know V.K. Rowe?

9 A. Do I know what?

10 Q. Did you ever have occasion to know another

11 toxicologist who worked for many years for the Dow

12 Chemical Company in Midland, Michigan, by the name of

13 V.K. Rowe, R-O-W-E? Varyl Keith Rowe?

14 A. I don't recall. that name at all.

15 Q. At the time that you heard about or were

16 familiar with the studies and. the findings that

17 Dr. Maltoni was making in the lab animals that were

18 exposed to various concentrations of vinyl chloride,

19 were you aware of the organs in which Dr. Maltoni found

20 tumors in the lab animals which were exposed to vinyl

21 chloride?

22 A. I don't remember that I went into such detail

23 in reading his publication.

24 The reason I read his publication was when we

25 prepare our report, in the introduction, we want to

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1 summarize what we knew at that time, before we did the
2 study. And it's a common practice for epidemiologists
3 to at least refer to some animal studies to discuss
4 whether that substance is a -- an animal carcinogen or
5 not.

6 Q. Is it your recollection that a goal of a
7 toxicologist who expose lab animals to chemical
8 compounds is to hopefully find an exposure level at
9 which they do not see any adverse effects upon the lab
10 animals?

11 A. As long as we're talking about experimental
12 animals, that would be correct.

13 Q. In other words, is one of the goals of a
14 toxicologist to find a no-effect level for a particular
15 chemical?

16 A. In experimental animals, yes.

17 Q. And have you heard that term before, "no-effect
18 level"?

19 A. Yes.

20 Q. Do you know if Dr. Maltoni ever found a
21 no-effect level for vinyl chloride?

22 A. I don't know that.

23 Q. Did you tell me yesterday that you had heard of
24 P.L. Viola?

25 A. I don't recall that name.

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1 Q. Okay. You've never -- you've never heard of
2 the Italian scientist who worked on vinyl chloride
3 studies in the sixties and seventies at the same time
4 that Dr. Maltoni was doing his studies, and this
5 scientist's name was P.L. Viola?
6 MR. COLBERT: Objection. Form.
7 THE WITNESS: I don't remember that name at
8 all.
9 MR. STEWART: Q. At this time in our history
10 of the United States, do we still have an OSHA, so far
11 as you know?
12 A. You mean today?
13 Q. Uh-huh.
14 A. Whether OSHA is still in existence?
15 Q. Yes, sir.
16 A. Yes.
17 Q. Is -- to your knowledge, is EPA still in
18 existence?
19 A. Yes.
20 Q. And to your knowledge, is NIOSH still in
21 existence?
22 A. Yes.
23 Q. Do you have any understanding of whether any of
24 these governmental agencies, be it EPA, OSHA, or NIOSH,
25 at this time publish risk assessments on chemicals that

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1 have heretofore been classified as carcinogens?

2 A. I believe they still do'.

3 Q. Do you know which of the -- these governmental
4 agencies publish such risk assessments?

5 A. I don't have the detail. I don't follow that.

6 Q. Are -- are you in any way involved with any of
7 these governmental agencies at this time, or in the last
8 two or three years, in the preparation of risk
9 assessments on any chemicals which have heretofore been
10 designated as carcinogens?

11 A. No.

12 Q. Do you know any -- anybody who has been
13 involved as part of the working group for either EPA,
14 OSHA, or NIOSH, in doing risk assessments on chemicals
15 that have classified as carcinogens?

16 MR. COLBERT: Objection. Form.

17 THE WITNESS: I have no knowledge of that.

18 MR. STEWART: Q. Have you heard of a
19 governmental publication entitled Toxicological Review?

20 A. That's the title of it? No.

21 Q. Okay. Have you heard of a branch or a subpart
22 of EPA which goes by the acronym I-R-I-S, which is an
23 organization -- which is a group that compiles
24 scientific information on chemicals that have been
25 designated as carcinogens and puts that information into

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1 a database?
2 MR. COLBERT: Objection. Form.
3 MR. STEWART: Q. Have you heard of that?
4 A. I have heard of that database.
5 Q Sir?
6 A. I have heard of that database.
7 Q. Okay. Do you know what that acronym, I-R-I-S,
8 stands for?
9 A. I don't -- I don't remember.
10 Q. All right. Have you used that database?
11 A. No, I do not.
12 Q. You've just heard of it?
13 A. Yes.
14 Q. Do you know how -- how it is that you came to
15 hear about this database?,
16 A. I heard people refer to the database. I don't
17 remember the circumstances.
18 Q. Do you know if any of the information contained
19 within the IRIS database concerns the chemical vinyl
20 chloride?
21 A. What was the question?
22 Q. Do you know if any of the information that's
23 contained within the IRIS database pertains to vinyl
24 chloride?
25 A. Well, I just said a minute ago that I have
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1 never used that database, so I would not know what kind
2 of information it has on vinyl chloride.

3 Q. Do you recall who you heard mention this IRIS
4 database?

5 A. A lot of people talk about that. I don't
6 remember whom I heard that from.

7 Q. Well, if it's a lot of people, can you tell me
8 two or three people who have mentioned it?

9 A. I don't remember their names. I -- it's a
10 database commonly used by some people.

11 Q. Do you know how long it's been in existence?

12 A. No, I don't.

13 Q. Do you know who the individuals were who did
14 the research that went into the IRIS database?

15 A. No, I don't.

16 Q. Do you have any knowledge that those
17 individuals were in any way affiliated with or connected
18 with the Chemical Manufacturers Association?

19 A. No, I don't.

20 Q. How much are you being paid by Shintech's
21 lawyers for your efforts in this case?

22 A. My hourly rate is \$450 an hour. I spent -
23 must be couple of days going over the records, talking
24 to Mr. Colbert last year, when he first contact me. And
25 then there was not much activity until this deposition.

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1 Q. Okay. Do you know how many hours you've
2 chalked up until this point?
3 A. No, I don't.
4 Q. Do you know how much money is clue you at this
5 point?
6 A. No, I don't.
7 Q. Okay. You charge \$450 an hour whether you're
8 sitting in your office looking at documents or sitting
9 in a conference room in a law office giving a
10 deposition?
11 A. Yes.
12 Q. Did you have occasion to see the special on PBS
13 that was done by Bill Moyers, which discussed diseases
14 amongst vinyl chloride workers?
15 A. No, I did not.
16 Q. Have you ever heard of it?
17 A. No.
18 Q. Have you been told anything about the worker in
19 this case who was employed by Shintech and developed
20 glioblastoma multiforme and died in October of 2000?
21 Has anybody told you anything about that individual?
22 A. I come to that understanding based on reviewing
23 some documents provided to me.
24 Q. What -- what documents did you review that
25 pertained to Carlin Staples, who is the individual who
DEPOSITION OF OTTO WONG - VOLUME II 326

1 died of glioblastoma multiforme?

2 A. I think it was a pleading or answer to
3 interrogatories or some terminology that lawyers use.

4 Q. Do you recall how old Mr. Staples was at the
5 time of his death?

6 A. He died in October, year 2000, and he was born
7 in 1961. So that makes him -- what, 39 years old?

8 Q. And do you know what year he began working for
9 Shintech?

10 A. May 1988.

11 Q. And do you know what his job title was for
12 Shintech during the years that he worked there?

13 A. He started as an unloader, meaning that he
14 unload -- part of his job would be unloading vinyl
15 chloride from tank cars and so on.

16 Q. Do you know anything about the unloading
17 procedure that Mr. Staples followed while he was an
18 employee at Shintech?

19 A. No, I don't.

20 Q. Do you know anything about the procedures that
21 are followed by any company that unloads liquid vinyl
22 chloride from railroad tank cars?

23 A. No, I don't.

24 Q. Do you know what a strainer is at a polyvinyl
25 chloride manufacturing plant?

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1 A. I'm not sure, but I assume it is some kind of
2 filter that would separate the liquid from some solid or
3 residue in the -- in the liquid.
4 Q. Do you know at room temperature whether vinyl
5 chloride is a solid, gas, or liquid?
6 A. Under pressure, is a liquid, yes.
7 Q. And --
8 A. I think we have to talk about not only
9 temperature but also what pressure we are talking about.
10 Q. Well, at room temperature and normal
11 atmospheric pressure, is vinyl chloride monomer a liquid
12 or a vapor?
13 A. I believe it's a gas.
14 Q. Do you know whether it's heavier or lighter
15 than air?
16 A. That I don't remember.
17 Q. In order to maintain vinyl chloride monomer
18 vapor in a liquid state, it has to be kept under
19 pressure; is that what you're telling me?
20 A. Yes.
21 Q. Do you have any recollection of the highest
22 exposure that any person within your 10,173-male cohort
23 ever received at any time?
24 A. According to the reports by Tabershaw and
25 Gaffey as well as Cooper, the average exposure in the
DEPOSITION OF OTTO WONG - VOLUME II 328

1 high category in their classification would be in excess
2 of 200 ppm.

3 Q. Do you know how much in excess?

4 A. I don't know that. That's the only information
5 they provide.

6 Q. Do you have an understanding of what the odor
7 threshold for vinyl chloride monomer is?

8 A. I don't know that.

9 Q. You don't know what concentration of vinyl
10 chloride monomer must be in the air in order for the
11 average human being to detect the odor?

12 MR. COLBERT: Objection. Form.

13 THE WITNESS: I have not looked it up, so I
14 cannot tell you today.

15 THE REPORTER: I'm sorry?

16 THE WITNESS: I have not looked it up, so I
17 would not be able to tell you today.

18 MR. STEWART: Q. Do you have any recollection
19 that that is something that you knew back during the
20 time that you were doing your vinyl chloride study for
21 the Chemical Manufacturers Association?

22 A. I don't remember that I ever looked it up or
23 not.

24 Q. Do you have any recollection of reading that
25 the only way some of the vinyl chloride plants back in

DEPOSITION OF OTTO WONG - VOLUME II 329

1 the '40s and '50s were able to make any sort of an
2 estimate of vinyl chloride monomer levels wa5based upon
3 whether or not the employees detected the odor?
4 MR. COLBERT: Objection. Form.
5 THE WITNESS: I don't know that.
6 MR. STEWART: Q. You've never read something
7 like that?
8 MR. COLBERT: Objection. Form.
9 THE WITNESS: No, I did not.
10 MR. STEWART: Q. In all the cases in which
11 you've been hired by lawyers for chemical companies and
12 the allegations were that a worker got sick or died
13 because of exposure to a chemical compound, have you
14 ever testified that there was a causation between
15 chemical exposure and the disease that caused that
16 employee's illness or death?
17 A. Well, sometimes when I look at the exposure
18 history of the worker, and I express my opinion to the
19 lawyers that, indeed, for example, the exposure to
20 benzene was sufficiently high to increase the risks of
21 acute myeloid leukemia, when I express that opinion to
22 attorneys, they would not ask me to testify.
23 Q. Well, my question is, when you have been hired
24 by lawyers representing chemical companies wherein
25 somebody has sued the chemical company and alleged that
DEPOSITION OF OTTO WONG - VOLUME II 330

1 a person was exposed to chemical X and, as a result of
2 being exposed to chemical X, that person either
3 developed disease Y or died from disease Y, have you
4 ever given a deposition or appeared in court and
5 expressed the opinion that, yes, in your opinion, there
6 was a causal relationship between the chemical exposure
7 and the victim's disease or death?

8 A. And what I just told you was that when I find
9 that out, when I express my opinion to attorneys, we
10 never go to a deposition.

11 Q. Did you not understand the question?

12 A. I understand the question. What I'm saying is,
13 when I express my opinion that indeed, the exposure
14 causes the disease, then I didn't -- then attorney did
15 not want me to testify anymore.

16 Q. Have you ever testified on a deposition or in a
17 court of law in a lawsuit in which a plaintiff was suing
18 a chemical company and alleging that exposure to a
19 chemical caused a disease or death, and in your
20 deposition testimony or your court testimony, you
21 testified that, yes, in your opinion, chemical X in fact
22 caused disease Y or death from, disease Y?

23 A. I have not done that.

24 Q. Do you know why Dr. Milby left Environmental
25 Health Associates?

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1 A. He is not going to -- it has to do with
2 something -- personal reasons.
3 Q. It what?
4 A. It has to do with some personal reasons.
5 Q. What personal reasons?
6 A. I'm not so sure I can disclose that. It has to
7 do with medical problems.
8 Q. Dr. Milby's ill?
9 A. I cannot discuss that.
10 Q. Well, when he left Environmental Health
11 Associates, did he go to work somewhere else?
12 A. He started his own company.
13 Q. And what did he call his company?
14 A. I don't remember.
15 Q. Does he still work?
16 A. I believe he is retired.
17 Q. Where was the company that he started located?
18 A. I think it's -- it was in Lafayette,
19 California, in the Bay Area.
20 Q. And what kind of a company did Dr. Milby set up
21 after he left Environmental Health Associates?
22 A. He provides consultation in terms of medical
23 problems and toxicological problems for workers. Among
24 workers.
25 Q. Do you know in what year Dr. Milby retired?

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1 A. I don't.
2 Q. When did he leave Environmental Health
3 Associates?
4 A. Must be about '82, around '82.
5 Q. All right. Ted Torkelson wrote a letter
6 addressed to Dr. Milby that was dated August of 1982.
7 Was Dr. Milby actually still at Environmental Health
8 Associates in August of '82?
9 A. I don't remember the exact date he left.
10 Q. But when he left, was Environmental Health
11 Associates officing in Berkeley?
12 A. The office was in Berkeley, yes.
13 Q. And Dr. Milby moved from Berkeley to Lafayette?
14 A. His office, yes.
15 Q. How far is Lafayette from Berkeley?
16 A. Less than 10 miles, I would say.
17 Q. And did Dr. Milby associate with other
18 professionals in this new business that he started after
19 he left your company?
20 A. I don't know.
21 Q. Did you ever go to Dr. Milby's office after he
22 left Environmental Health Associates?
23 A. I have not. 24 Q. And did he ever come back and visit
25 Environmental Health Associates office after he left in
DEPOSITION OF OTTO WONG - VOLUME II 333

1 1982?

2 A. Not that I know of.

3 Q. When you first started up Environmental Health
4 Associates, you mentioned a Dr. -- was it Morgan?

5 A. Robert Morgan.

6 Q. Robert Morgan?

7 A. Right.

8 Q. He was one of the professionals who worked at
9 Environmental Health Associates when it was first
10 started?

11 A. Yes.

12 Q. Is he a medical doctor?

13 A. Yes.

14 Q. When did he leave Environmental Health
15 Associates?

16 A. I think we discussed that. He left 1998 or

17 '99.

18 Q. 1998?

19 A. Yes.

20 Q. There was still a company known as
21 Environmental Health Associates as late as 1998?

22 A. Well, in 1987, we became a division of ENSR
23 Corporation, and we continued to work for ENSR. I told
24 you I worked for three years, according to the
25 agreement. And Dr. Morgan left before the three years

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1 were up. I don't remember exactly when.
2 MR. COLBERT: So you mean '88 or '89, not '98
3 or '99?
4 THE WITNESS: I'm sorry. '88 or '89.
5 MR. STEWART: Q. Okay. That's where I was
6 confused, because I understood you to say 1998.
7 A. I'm getting hungry. I need some carbohydrate.
8 Q. So, Dr. Robert Morgan left Environmental Health
9 Associates in 1988?
10 A. Or '89. I don't remember the exact date.
11 Q. And from Environmental Health Associates, where
12 did he go?
13 A. He started his own company.
14 Q. Where?
15 A. In Redwood City, California.
16 Q. How far is that from Berkeley?
17 A. Twenty, 30 miles.
18 Q. And what kind of services did his new company
19 perform?
20 A. He provide consultation in terms of
21 epidemiology, occupational medicine, to the industry.
22 Q. Do you know if other professionals joined
23 Dr. Robert Morgan in his new business after he left
24 Environmental Health Associates in 1988?
25 A. I don't.

1 Q. Did you ever visit his -- his office in Redwood
2 City?

3 A. Yes, I did.

4 Q. On how many occasions?

5 A. Not that many. Six, seven times. Redwood City
6 is quite close to my office. It's about maybe like five
7 miles. And sometimes we had lunch.

8 Q. All right. After he left and set up his own
9 business in Redwood City, did you and Dr. Robert Morgan
10 work together on any epidemiological studies?

11 A. No, we did not work on any studies.

12 Q. And if I understood you correctly yesterday,
13 you told me that Dr. Robert Morgan, even when he was
14 with Environmental Health Associates, never worked on
15 any vinyl chloride studies.

16 Is that correct?

17 A. He did not work on our study in any substantial
18 way. I mean, the vinyl chloride study was a large-scale
19 study at that time in our company. But he did not work
20 on the study.

21 Q. And where is Donald Whorton at this time?

22 A. He's in, I believe, Alameda.

23 Q. Does he work with a company?

24 A. I don't know the latest status, but for a while
25 he was working mainly by himself with some support

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1 staff .

2 Q. And that was in Alameda? '

3 A. Yes.

4 Q. And when did he leave Environmental Health

5 Associates?

6 A. He left ENSR -- because later on it became

7 ENSR -- he left -- must be in the early 1990s.

8 Q. Do you have any knowledge or recollection if

9 any of the 37 plants in your cohort brought in vinyl

10 chloride monomer by railroad tank car and. off-loaded it?

11 A. I don't have that information.

12 Q. Did you have any understanding; while you were

13 doing your vinyl chloride study, that there was greater

14 exposure at plants that had the greater outputs of

15 either PVC or VCM? In other words, the plants that

16 manufactured the greatest volumes of PVC or VCM, did

17 they have the greatest exposures?

18 A. I don't know that.

19 Q. Do you believe that there's a correlation

20 between the amount of polyvinyl chloride produced by a

21 plant and the amount of exposure in that plant?

22 A. I don't know that.

23 Q. Have you ever read the OSHA regulations that

24 were promulgated back in '75 or '76 on vinyl chloride?

25 A. No, I have not.

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1 Q. Have you ever read any OSHA regulations on any
2 chemical?

3 MR. COLBERT: Objection. Form.

4 THE WITNESS: I look at that once, the ones on
5 benzene.

6 MR. STEWART: Q. You have looked at the OSHA
7 reg on benzene?

8 MR. COLBERT: Objection. Form.

9 THE WITNESS: Part of it, at least, yes.

10 MR. STEWART: Q. Is that something that you do
11 periodically?

12 A. no.

13 Q. You've only done it one time?

14 A. The reason being I was asked by OSHA to appear
15 before an administrative judge at the OSHA benzene
16 hearing. And I guess, you know, I want to look at the
17 transcript.

18 THE REPORTER: The transfer?

19 THE WITNESS: The transcript of what I
20 testified.

21 MR. STEWART: Q. Did you ever look at the
22 transcript of the OSHA hearing held back in the early
23 '70s, wherein they collected testimony to determine
24 whether or not OSHA wanted to reduce the air
25 concentration level for vinyl chloride?

DEPOSITION OF OTTO WONG - VOLUME II

1 A. No, I did not.
2 Q. Do you have knowledge of any of the
3 professionals who appeared at the vinyl chloride OSHA
4 hearings in the early '70s?
5 A. No, I do not.
6 Q. Have you ever talked to anybody who told you
7 that they were involved in the vinyl chloride OSHA
8 hearings?
9 MR. COLBERT: Objection. Form.
10 THE WITNESS: No, I have not.
11 MR. STEWART: Q. Are there any documents that
12 you base your opinion on in this case that you have not
13 talked about during this deposition?
14 A. As I said, I received a copy of the pleadings
15 or the answers to interrogatories. I received some
16 medical records, and I also received a copy of the
17 report prepared by Dr. Levy.
18 Q. Are there any other published studies on vinyl
19 chloride exposure upon which you base your opinion, that
20 you have not mentioned during the course of this
21 deposition?
22 A. No.
23 MR. STEWART: That's all I have. Thank you.
24 MR'. COLBERT: Off the record real quick.
25 THE VIDEOGRAPHER: The time is 10:49. We're
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1 off the record.
2 (Discussion off the record.)
3 THE VIDEOGRAPHER: Time is 10:52. We're on the
4 record.
5 FURTHER EXAMINATION BY MR. COLBERT
6 MR. COLBERT: Q. Dr. Wong, you've been
7 testifying now for a while. I wanted to just go over a
8 few -- a few things.
9 Yesterday, Mr. Stewart asked you a question
10 regarding the size, the cohort size in your study.
11 Do you recall that?
12 A. Yes.
13 Q. And I believe your answer was that a cohort of
14 the size of 10,000-plus people was sufficient to
15 determine or to find whether or not there might be an
16 association between an exposure or an occupation and
17 most cancers.
18 Do you recall that?
19 A. Yes.
20 Q. Is it your opinion that the cohort size in your
21 study was sufficient to determine a causal association
22 for angiosarcoma of the liver?
23 A. Well, that for sure, because we do have quite a
24 few cases of angiosarcoma in our study.
25 Q. Was your cohort size sufficient to determine
DEPOSITION OF OTTO WONG - VOLUME II 340

1 whether or not there was a causal association between
2 exposure to vinyl chloride and brain cancer?

3 A. We have quite a few cases of brain cancer as
4 well, so the statistics would be very stable.

5 Q. There was also some discussion concerning the
6 makeup of that cohort, the 10,173 men, as described by
7 Dr. Cooper and then yourself.

8 Do you recall that conversation?

9 A. Yes.

10 Q. And there's also some discussion concerning the
11 follow-up to your study by Dr. Mundt, where the cohort
12 size was decreased by a few people.

13 Do you recall that discussion?

14 A. Yes. As a matter of fact, the question was
15 raised whether everybody in our study was male, and it
16 turns out that actually, according to the follow-up by
17 Dr. Mundt, 11 -- I believe 10 or 11 -- according to the
18 information he received subsequently, indicate that
19 those 10 or 11 persons were female.

20 But again, you know, we are talking about a
21 study of 10,000. And sometimes the information on
22 gender may not be on the record. Then we have to make a
23 decision. And sometimes the name may or may not
24 indicate -- may or may not tell us whether the person is
25 a male or female.

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1 But 10- or 11,000 -- 10 or 11 persons in a
2 study of 10,000 persons would not have any impact.

3 Q. Dr. Wong, do you have any concerns about the
4 confidence -- excuse me -- yeah, do you have any
5 concerns about the confidence of the results of your
6 study?

7 A. I'm not sure what --

8 Q. Are you confident that the results of your
9 study are accurate?

10 A. Well, the analyses we do, they are all
11 standard, well-accepted analyses in the cohort mortality
12 study.

13 Now, in terms of the data, we obtained the data
14 from Dr. Cooper. There was some discussion yesterday
15 that some exposure information was provided by the
16 plant, and is true that we did not have the opportunity
17 to go back and audit or verify the accuracy of every
18 single record we obtained from Dr. Cooper. But we
19 should be able to do some indirect assessment of the
20 quality of our data by looking at -- by comparing our
21 study to the NIOSH study.

22 Q. Okay. How would you compare your study to the
23 NIOSH study?

24 A. Well, the NIOSH study, according to the
25 authors, Wexweiler and also Dr. Wu, they collect their

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1 own information. They also conducted what they call a
2 walk-through survey to determine which 'jobs were
3 exposed. So, based on their own decision, they did a
4 study. They classified people as to exposed/not
5 exposed.
6 The reassuring thing is, when we look at our
7 results and the NIOSH study results, they are very, very
8 similar, if not identical. For example, they find an
9 increase of liver cancer. We find an increase of liver
10 cancer. In fact, our risk ratio was higher than the
11 risk ratio reported by NIOSH.
12 They find an increase of brain cancer. We also
13 find an increase of brain cancer. The risk ratios from
14 two -- from these two studies were quite close. They
15 did not find a dose-response relationship for brain
16 cancer. We did not find a dose-response relationship
17 for brain cancer.
18 So, our results are very, very similar to the
19 NIOSH studies. So, that's reassuring that, indeed, the
20 data we receive are, you know, to a large extent
21 accurate.
22 Q. How did the results in your study compare to
23 the results in the Mundt study?
24 A. They are very similar as well.
25 Q. Okay. Dr. Wong, I'm going to hand to you what
DEPOSITION OF OTTO WONG - VOLUME II 343

1 was marked as Plaintiffs' Exhibit No. 1. And is this
2 a -- is this an interim report?

3 A. It says "final report" on the -- on the title
4 page.

5 Q. Okay. Would you please turn with me to the
6 Bates stamped page 1055. You recall yesterday
7 Mr. Stewart asked you some questions about paragraph 5,
8 and I just wanted to make sure that the record was
9 complete.

10 Is it an accurate reading that the last
11 sentence in paragraph 5 says -- the paragraph 5 is
12 talking about cancers of the liver, respiratory system,
13 brain. Does the last sentence say, "Even though the
14 excesses were not statistically significant, the
15 findings warrant further study"?

16 A. That's what it says.

17 Q. Would you turn with me, please, to Bates page
18 1069, at the top of the page, and the exhibit is marked
19 in blue.

20 Do you see that?

21 A. Yes.

22 Q. Okay. Would you read, please, for the jury the
23 next paragraph that begins "the possibility"?

24 A. "The possibility exists based on the lack
25 of specificity of some of the listed causes

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1 that some of the brain cancers were not
2 primary, but metastases from another
3 unidentified site, such as the lung."

4 Q. What does that mean?

5 A. That means some of those, even though brain
6 cancer was listed on the death certificate, they are not
7 the primary site. The primary site would have been lung
8 cancer.

9 Q. So, it wouldn't have been accurate, then, to
10 list it as a brain cancer in a mortality study?

11 A. That's correct. Because the analysis would be
12 based on the underlying cause of death. The primary
13 site.

14 Q. Let me hand you what was marked as PX 2. Would
15 you note on the front page whether or not this is an
16 interim report?

17 A. It says "final report."

18 Q. And if you would turn with me, please, to page
19 008, the Bates stamped page. The third full paragraph
20 down, does this -- does that indicate what type of study
21 this is?

22 A. Proportional mortality analysis.

23 Q. Okay. So, this is a proportional mortality
24 analysis study?

25 A. Right.

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1 Q. What is a proportional mortality analysis
2 study?

3 A. A proportional mortality study is not as good
4 as a cohort mortality study because the population at
5 risk is not defined in the proportional mortality study.
6 Basically, we compare the percentage of a certain cause
7 of death and not the risk of the rate of the disease.

8 Q. Okay. Thank you.

9 I'm going to hand you what's marked as PX 3.

10 Prior to your deposition, Dr. Wong, have you
11 ever seen that document in the state it's in there, with
12 the "DRAFT" sticker on it and the numerous handwritings
13 on the pages?

14 A. I don't remember seeing this.

15 Q. Okay. Dr. Wong, I'm going to hand you now
16 what's been marked as PX 4.

17 Prior to your deposition yesterday and today,
18 . had you had a chance to see a copy of this document as
19 it is before you today?

20 A. I might have seen a copy of this before.

21 Q. With the handwritten interlineations in it?

22 A. No, no, not with all the markings in the
23 report.

24 Q. Do you know whose handwriting that is?

25 A. I have no idea.

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1 Q. And this is -- what is this document?

2 A. This is the final report on the vinyl chloride
3 study submitted to CMA by Equitable Environmental
4 Health.

5 Q. Dr. Cooper's study that was eventually
6 published --

7 A. Under his name, yes.

8 Q. Thank you.

9 I hand you what's marked as PX 5. Is that --

10 is that the study by Dr. Mundt that was eventually
11 published by Dr. Mundt?

12 A. A much shorter version of that was published.

13 Q. Okay. And it's in that document and in his
14 study where he talks about the -- the difference between
15 the cohort size population in Dr. Cooper's and, later,
16 your study and then his study and the reason why it went
17 from 1,000 -- 10,173 people to, I believe, 10,019
18 people?

19 A. He discussed that.

20 Q. Okay. And is it unusual over a period of time,
21 in this instance, a 20-year follow-up, that as more
22 records become available that it's easier to discern
23 members of the cohort?

24 A. Well, in a study of this size especially, you
25 know, a lot of information, the demographic information,
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1 was based on old employment records. Sometimes we
2 cannot see the handwriting or the typing or so on. So,
3 some information may not be a hundred percent accurate.
4 And whenever we do an update, sometimes we would be able
5 to go back and obtain additional information to clarify
6 some of the -- the records.

7 Q. Dr. Wong, I'm going to hand you what's marked
8 as PX 6, which purports to be a copy of the
9 International Agency for Research on Cancer's Monograph
10 on Vinyl Chloride Monomer, dated 1979; correct?

11 A. Yes. 12 Q. Does that monograph include in it a discussion
13 of the study sponsored by IARC that was published in
14 1991?

15 A. Of course not.

16 Q. That -- IN fact, that study, it's obvious,
17 dated February, 1979, doesn't include any of the current
18 science as the science exists from, obviously, prior to
19 publication date of that study through today's date;
20 correct?

21 A. Well, in fact, although the document was dated
22 1979, the meeting at IARC was held in February 1978.
23 So, any information subsequent to 1978 would not have
24 been included.

25 Q. Would it be reasonable for an epidemiologist

1 today to rely on a document dated February 1979 in
2 trying to determine whether or not there's a causal
3 association between vinyl chloride monomer and brain
4 cancer?

5 A. That would not be proper because we do have a
6 lot more information published since 1978.

7 Q. Dr. Wong, I want to hand you what's marked as
8 PX 8.

9 Do you recall that document?

10 A. Yes.

11 Q. That's a letter from Dow?

12 A. That's a letter from Dow to Dr. Milby.

13 Q. And I think if you look at the second page of
14 the document, it indicates that Dow is wanting to
15 protect employee confidentiality.

16 A. That's correct.

17 Q. Do you find, or have you found in your work as
18 an epidemiologist, that companies want to protect the
19 confidentiality of their employee information?

20 A. We run into that a lot.

21 Q. Dr. Wong, I'm going to hand you what's been
22 marked as PX 9. Do you recall reviewing that document
23 during your deposition?

24 A. Yes.

25 Q. Okay. What is Mr. Illes -- I believe is his

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1 name -- with PPG, saying to you in that letter?
2 A. Well, basically, I asked him, in a letter that
3 he refers to in his letter, to provide us with some
4 information on 35 individuals, to identify or provide us
5 the identifier -- name and Social Security number and so
6 on -- so that we can use that information to go to the
7 National Death Index to determine whether they are still
8 alive or dead.
9 And as I testified this morning, in order to do
10 that, they have to match up the hire date, the birth
11 date, to identify what -- who those people were. And
12 basically, he is saying that we may not want to do this
13 because this takes too much time.
14 And he asked a question: Does it matter that
15 much that you update this 35 people in the study? Would
16 that have a major impact on your study if we do not
17 update the vital status of these 35 individuals?
18 And in fact, as I testified this morning, we
19 end up with about 800 people that we did not have
20 identifying information in our update to go outside and
21 obtain information to update their vital status. And
22 that -- that group of people, their vital status
23 remained the same as in the previous study.
24 Q. Okay. So, if they were determined to be alive
25 in the previous study, that was what you considered them

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1 in your follow-up?

2 A. Right. And at the same time, in order to'
3 perform a proper calculation, we also terminate the
4 person years of observation at that time.

5 Q. Dr. Wong, I'm going to hand to you again what
6 was marked as Plaintiffs' Exhibit No. 4. This is a copy
7 of it. There was some concern in talking about -- this
8 is the Clark Cooper study. There was some concern that
9 there was a no-exposure group in the Cooper study.

10 Do you -- and he's talking about exposure
11 levels there on page 8 and page 9. Do you see in there
12 where he mentions that there was a no-exposure group?

13 A. No. He mentioned three exposure categories,
14 high, medium, and low. And in fact, the cohort
15 definition in the Cooper study was one year's -- one
16 year of exposure.

17 Q. Okay. Thank you.

18 Okay. Dr. Wong, I'm going to hand to you
19 what's marked as PX 13 and PX 14. And we -- you
20 discussed those documents this morning.

21 Could you describe PX 13, please.

22 A. Thirteen was a letter from Carol Stack. She
23 was in charge of the Vinyl Chloride Program at CMA at
24 that time. And the letter was addressed to the general
25 manager at one of the locations that we did the study.

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1 Q. In the third paragraph, the last sentence in
2 the third paragraph on that letter, it talks about
3 the -- where it says, "The producers felt strongly that
4 a good retrospective mortality study would be an
5 invaluable reference in future vinyl chloride
6 litigation," do you see that?

7 A. That's correct.

8 Q. I believe you testified this morning that you
9 didn't have any conversations with either the CMA staff
10 or any of the CMA member companies regarding the vinyl
11 chloride litigation; correct?

12 A. I did not talk to them about that.

13 Q. Okay. All right. I want to bring your
14 attention now to PX 14. And look at the second
15 paragraph -- and this is a letter written to Mr. Ralph
16 Ferrel at Conoco Chemicals, under your signature;
17 correct?

18 A. Yes, sir.

19 Q. And it looks to me in the second paragraph that
20 the last sentence in that paragraph looks very similar
21 to the sentence we just talked about in -- in the letter
22 from the CMA; is that correct?

23 A. Yes. In fact, that is almost exactly the same
24 language.

25 The reason we put that in there is Carol Stack

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1 used the possibility of using a good study to -- for
2 litigation purposes, in her letter, as an incentive for
3 the plant personnel to spend some time to provide us
4 with the information we need. And I just follow her
5 example, because it does take time to go back to old
6 employment records to match up the names with birthdays
7 and hire days.

8 So, I just used whatever I could to provide
9 some incentive for the people to help us.

10 Q. When you conduct an epidemiology study, do you
11 ever keep in the back -- do you ever think about whether
12 or not your study might be used in litigation or other
13 legal matters?

14 A. Yes. In reality, I mean, the studies are used
15 for litigation purposes. In fact, studies are used in
16 three areas: for public health, for regulation, and for
17 litigation. And it doesn't matter how they are used, as
18 long as we provide good science. I think we need good
19 science in all three areas.

20 Q. But you don't let litigation sway your thinking
21 with respect to a study one way or another, do you?

22 A. No, I don't.

23 MR. COLBERT: Dr. Wong, thank you very much. I
24 have no further questions.

25 THE VIDEOGRAPHER: This concludes Volume 2 to
DEPOSITION OF OTTO WONG - VOLUME II 353

1 the deposition of Dr. Otto Wong. The time is 11:13.
2 We're off the record.
3 (Discussion off the record.)
4 (Whereupon, Defendant's Exhibits No. 2A
5 and 6A were marked for identification.)
6 MR. COLBERT: We're attaching Exhibit 6A, which
7 is merely a copy of the front page of the American
8 Journal of Industrial Medicine.
9 THE WITNESS: The cover of the issue.
10 MR. COLBERT: Yes, cover page of the journal,
11 Volume 24, Number 2, 1993, which corresponds to the same
12 original journal that Dr. Wong held up, Volume 24,
13 Number 2, 1993.
14 In addition, we are adding what has been marked
15 as Exhibit 2A, which is a copy of the cover of the
16 American Journal of Industrial Medicine, Volume 20,
17 Number 3, 1991, in which his study, "An Industry-Wide
18 Epidemiology Study of Vinyl Chloride Workers," was first
19 published.
20 (Whereupon, the deposition was concluded at
21 11:16 a.m.)
22
23 OTTO WONG
24
25
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1 CERTIFICATE OF REPORTER

2

3 I, KAREN E. THOMPSON, a Certified Shorthand
4 Reporter of the State of California, do hereby certify:

5 That OTTO WONG in the foregoing
6 deposition named, was present and by me sworn as a
7 witness in the above-entitled action at the time and
8 place therein specified;

9 That said deposition was taken before me
10 at said time and place, and was taken down in
11 shorthand by me, a Certified Shorthand Reporter
12 of the State of California, and was thereafter
13 transcribed into typewriting, and that the foregoing
14 transcript constitutes a full, true, and correct record
15 of said deposition and of the proceedings which took
16 place;

17 That I am a disinterested person to the said
18 action.

19 IN WITNESS WHEREOF, I have hereunder subscribed
20 my hand on this 18th day of March, 2002.

21

22

23

24 KAREN E. THOMPSON, CSR No. 2792

25

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