

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON, WEST VIRGINIA

JAMES M. ADKINS, Administrator
of the Estate of Ralph E. Adkins,
Deceased, et al,

Plaintiffs,

vs.

MONSANTO COMPANY, a Delaware
Corporation,

Defendant.

No. 81-2098

Deposition of
HENRY J. HORNER
taken on behalf of
the plaintiffs.

* * * * *

Reporter: M. Joy Springer

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APPEARANCES:

Messrs. Calwell, McCormick & Peyton,
by W. Stuart Calwell, Jr., Esq., For the Plaintiffs;

Messrs. Bowles, McDavid, Graff & Love,
by Ms. Deborah A. Sink,
Thomas E. Scarr, Esq.,
Charles M. Love, III, Esq., For the Defendant.

IT IS STIPULATED AND AGREED by and between
counsel for the plaintiffs and counsel for the defendant
that the deposition of HENRY J. HORNER may be taken pursuant
to Rule 26(a) of the Federal Rules of Civil Procedure, on
behalf of the plaintiffs, on July 8, 1983, at the Radisson
Hotel, Room 215, 9th Street and Convention Plaza, St. Louis,
Missouri, before M. JOY SPRINGER, a Notary Public within and

1 for the County of Madison, State of Illinois; that the
2 issuance of notice and dedimus is waived, and that this
3 deposition may be taken with the same force and effect as
4 if all Federal rules and statutory requirements had been
5 complied with.

6 IT IS FURTHER STIPULATED AND AGREED that
7 any and all objections to all or any part of this deposi-
8 tion except objections as to form of the questions asked
9 or answers given, are hereby reserved and may be raised on
10 the trial of this cause; and that the signature of the
11 deponent is not waived.

12 * * * * *

13
14
15 HENRY J. HORNER

16 produced, sworn and examined on behalf of the plaintiffs,
17 deposes and says as follows:

18 EXAMINATION
19

20 BY MR. CALWELL:

21 (Whereupon the reporter marked for the purposes
22 of identification Plaintiff's Exhibit #294
23 (Monsanto's I.D. #232553).

24 Q Mr. Horner, would you state your name,
25 please?

1 A Henry J. Horner.

2 Q Where do you live, sir?

3 A Collinsville, Illinois.

4 Q Are you employed?

5 A Yes, sir.

6 Q Who do you work for?

7 A Monsanto.

8 Q What is your position with Monsanto?

9 A Chief Chemist at the Krummrich Plant.

10 Q What is your education?

11 A I have a Master's Degree in Analytical

12 Chemistry.

13 Q Where did you get that?

14 A Kansas State University, Manhattan, Kansas.

15 Q What year?

16 A 1951.

17 Q You have any additional course work or

18 degrees?

19 A That's my degree. Well, I had a B.S. in

20 chemistry prior to that, of course.

21 Q Nothing further than the M.A.?

22 A That's right.

23 Q How long have you worked for Monsanto?

24 A Approximately twenty years. Be twenty years

25 in September.

1 Q What was your first job with Monsanto?

2 A I was a group leader in what they call the
3 Process Research Group.

4 Q What kind of processes were you researching
5 in that group?

6 A All the processes that are in operation at
7 the Krummrich Plant.

8 Q You been at the Krummrich Plant the entire
9 twenty years that you have been with Monsanto?

10 A Yes, sir.

11 Q During your time there did you have occasion
12 to work with 2,4,5 T or 2,4 D?

13 A No, sir, I didn't.

14 Q During your time there did you analyze
15 substances or products or chemicals for dioxin?

16 A I'm sorry, would you restate question.

17 Q While you worked at the Krummrich Plant
18 have you ever analyzed or caused to be analyzed substances
19 for dioxin content?

20 A Yes, sir, there were materials analyzed for
21 dioxin content.

22 Q When did you first do that?

23 A To my knowledge, the first samples that we
24 sent for dioxin content that I knew, was knowledgeable of,
25 was 1979.

1 Q And that would have been which dioxin?

2 A Chlorinated dioxin.

3 Q Do you know about analyzing specifically

4 for 2,3,7,8 tetrachlorodibenzo-para-dioxin?

5 A I don't know, sir.

6 Q You don't know whether that was ever done

7 at the Krummrich Plant?

8 A No, sir, not as such.

9 Q When you say you are Chief Chemist for the

10 Krummrich Plant, what are the duties of the Chief Chemist?

11 A Well, essentially the Chief Chemist is a

12 misnomer. I'm really Laboratory Superintendent. My work

13 is of an administrative nature. I have a lab force of about

14 forty-five to fifty people, so I'm involved with personnel

15 matters, performance reviews, salary administration, that

16 sort of thing.

17 Q What was the occasion in 1979 that you were

18 analyzing for chlorinated dioxins, dibenzo-dioxins?

19 A There was a sample that was brought in that

20 we arranged to get dioxin analysis on.

21 Q What was it a sample of?

22 A It was a sample taken at the time of the

23 Sturgeon spill.

24 Q Be about January 10th, 1979?

25 A I don't remember the exact date.

1 Q In the wintertime?

2 A Yes, sir.

3 Q What were the results of that testing?

4 A I never actually saw the results. All we
5 did was arrange to send the sample.

6 Q When you say you arranged to send the sample,
7 what's that mean?

8 A Well, we have the responsibility for making
9 sure that all samples that are sent out of the plant for
10 testing or to customers or anything like that are sent
11 according to Department of Transportation regulations.

12 Q And you sent the sample to some other
13 laboratory?

14 A Yes, sir.

15 Q And where was that?

16 A It seems like it was a laboratory in
17 Nebraska somewhere, but I'm not positive.

18 Q Did you ever analyze for the chlorinated
19 dibenzo-dioxins, or whatever, at the Krummrich Plant itself?

20 A We are currently doing that on some products
21 now.

22 Q When did you first start doing it at the
23 Krummrich Plant?

24 A Let's see, probably a year, year and a half
25 ago now.

1 Q Early 1982, I guess?

2 A Yes, probably around there.

3 Q Are any of those products from the Nitro

4 facility?

5 A No, sir.

6 Q Are any of those substances or products

7 that you're testing manufactured at the Nitro facility?

8 A No, sir.

9 Q What are those substances?

10 A They are chlorophenols.

11 Q Are they used in the intermediate steps in

12 the manufacture of finished products that Monsanto produces?

13 A Yes, some of them are.

14 Q And what are those products?

15 A Parachlorophenol is used in the manufacture

16 of Santophen 1.

17 Q You still manufacturing Santophen 1?

18 A Yeah, for another month, probably.

19 Q And are you analyzing orthochlorophenol,

20 by-product of that?

21 A (Nods head affirmatively.)

22 Q How long has orthochlorophenol been analyzed

23 by Monsanto for dioxin?

24 A To my knowledge, like I said, for probably

25 a year, year and a half. That's when we began being

1 involved in analyzing.

2 Q You don't know whether Monsanto analyzed the
3 orthochlorophenol, by-product of Santophen process, before
4 a year and a half ago, do you?

5 A No.

6 Q Do you know who would know that?

7 A No, sir, I really don't.

8 Q When you got the assignment to begin this
9 testing for these dioxins, and I assure 2,3,7,8 TCDD is
10 one of them you're looking for, were you given some brief-
11 ings by your company about dioxins?

12 A Yes, we were given an analytical method or
13 procedure to use.

14 Q When did you first learn that Monsanto was
15 testing for dioxins?

16 A Really, I wasn't aware of it, I guess, until
17 the time with the Sturgeon incident.

18 Q When did you first hear about dioxins?

19 A Oh, early '70's, late '60's.

20 Q In what context did you hear about them?

21 A Just general reading, perhaps, discussions.
22 I really don't remember exactly the first time.

23 Q That would have been the first time period
24 that you became aware of it?

25 A Yes.

1 Q And when you became aware of them, was that
2 in connection with any product that Monsanto was producing?
3 A No, sir.
4 Q When did you first learn about dioxin, if
5 you did, being connected with a product that Monsanto was
6 producing?
7 A Probably somewhere in the early '70's, mid-
8 '70's.
9 Q And what was the product?
10 A Pentachlorophenol.
11 Q How did you come to learn about dioxin in
12 connection with that product?
13 A Through discussions with some people who
14 were doing some research, process-type research.
15 Q Who were they?
16 A The one I recall is Steve Vogel.
17 Q What was his title?
18 A He was Research Chemist.
19 Q Do you know if the only thing he was looking
20 at was pentachlorophenol?
21 A I just don't know for sure, sir. That's
22 the only one I remember.
23 Q Was he looking at any trichlorophenols?
24 A Not to my knowledge.
25 Q At that time were you aware of a dioxin

1 problem associated with 2,4,5 trichlorophenoxyacetic acid
2 at the Nitro Plant?

3 A No, sir.

4 Q Were you ever aware of that?

5 A Not until fairly recently.

6 Q When you began testing about a year and a
7 half ago at the Krummrich Plant for dioxin associated with
8 the Santophen process and orthochlorophenol, did you do any
9 research to see what Monsanto knew about dioxins and testing
10 for them?

11 A Yes, because what we are doing is Monsanto
12 technology and methodology.

13 Q In looking at what Monsanto knew as of a
14 year and a half ago in preparation to undertake this project
15 to test Santophen and orthochlorophenol, what did you find
16 out? Did you see anything in there about the Nitro Plant
17 and 2,4,5 T and dioxin?

18 A I didn't see anything, no, sir.

19 Q Did anybody tell you about it?

20 A If I heard it, it was strictly in a passing
21 manner. No, nothing specifically.

22 Q Well, what did you hear in a passing manner?

23 A I don't really recall.

24 Q In preparation for your project in connec-
25 tion with Santophen, did you look at any documents that

1 Monsanto had from the Dow Chemical Company?

2 A No, sir.

3 Q Were you given any instruction about the
4 toxicity of dioxin in connection with your preparation to
5 start handling these materials?

6 A There were safety precautions as part of
7 the methodology.

8 Q And what were those safety precautions?

9 A Well, I've not been specifically doing the
10 analysis, so I can't relate in detail what they are.

11 Q Were you responsible for seeing to it that
12 these safety precautions were communicated to the people
13 who would actually be doing the work?

14 A No, sir. The method was submitted by people
15 from Research, and they actually did the training and
16 instruction of the people at the Krummrich Plant on how to
17 do it.

18 Q So you don't know anything about that, right?

19 A That's right, no detail on it.

20 Q Did anybody tell you about the risks
21 associated with dioxin exposure in connection with your
22 process with this Santophen?

23 A Nothing more than what I have already
24 related.

25 Q Well, what were those risks?

1 A I mean, of the safety precautions and so
2 forth that were to be taken in doing the analysis.

3 Q Anybody tell you about any health effects,
4 adverse health effects being exposed to dioxin?

5 A No, sir, nothing more than what was very
6 prevalent in the media and so forth.

7 Q Do they brief you from the media, is that
8 what they do?

9 A No, sir.

10 Q Well, did they brief you? They just tell
11 you, go read the newspapers to find out whether dioxin would
12 hurt you or not?

13 A No, sir. I've never been aware of any
14 adverse health effects from dioxin.

15 Q Okay. So far as you know, it doesn't hurt
16 you, right?

17 A That's right.

18 Q Is that what Monsanto told you?

19 A No. That's a personal opinion.

20 Q And what have you read that says dioxin
21 won't hurt you?

22 A I guess, the most recent thing I've read
23 was the report from the A.M.A.

24 Q And what was that?

25 A That was a few weeks ago, I think, when that

1 release came.

2 Q That resolution?

3 A Yeah.

4 Q Did you see the retraction of the resolution?

5 A Yeah, I saw something about that, yes, sir.

6 Q Have you read any of the literature about
7 dioxin in preparation for your overseeing this project in
8 connection with Santophen?

9 A Yes, sir, I've read some literature.

10 Q What have you read?

11 A I read a number of articles in the scientific
12 journals, C & E News.

13 Q Any particular commentator or reporter that
14 you have read?

15 A Not that I remember specifically.

16 Q So from what you're saying, then, as far as
17 you know, TCDD, 2,3,7,8, is just not toxic, right, doesn't
18 hurt you, in other words?

19 A To my knowledge, it's never been proven to
20 be toxic to humans.

21 Q So there's no real reason to take safety
22 precautions with it, is there?

23 A Well, I think we take safety precautions
24 with a lot of things.

25 Q Let me hand you what's been marked Plaintiff's

1 Exhibit 294 (Monsanto's I.D. #232553), and ask you to take
2 a look at that.

3 That's in 1974 memorandum from a Mr. Mieure, is it
4 not?

5 A Yes.

6 Q And addressed to you?

7 A Yes, sir.

8 Q And is on Monsanto letterhead?

9 A Yes, sir.

10 Q And you recognize that form, is that right?

11 A I recognize the form, yes, sir.

12 Q And as far as you know, you got that?

13 A I don't remember it. I'm sure I probably
14 got it, yes, sir.

15 Q You have had an opportunity to look at
16 Exhibit 294, haven't you?

17 A Yes, sir.

18 Q See anything in there that you disagree with?

19 A No, sir.

20 Q That memo says you were testing for TCDD
21 in 1974, doesn't it?

22 A They were attempting to.

23 Q Why would that have been addressed to you?

24 A Probably because we supplied the sample to
25 Dr. Mieure.

1 Q And what was your job in 1974?

2 A I was Chief Chemist.

3 Q Same job you have now?

4 A Yes, sir.

5 Q Why did it fall to you to supply the sample
6 to Dr. Mieure or to your department, or whatever?

7 A Because we have what we call the sales
8 sample function as part of the laboratory, and this is our
9 people that are responsible for sending out samples that
10 are requested in one form or another.

11 Q And what is the sales sample function,
12 what's that mean?

13 A Okay. It supplies samples to customers --
14 if through marketing customers request a sample of one of
15 our products, we had the capability in the lab of packaging
16 that material and sending it out. So we also send samples,
17 we also package and send practically all of the other samples
18 that go out of the plant also.

19 Q So if a potential customer would want to
20 try out a sample of whatever, 2,4,5 T, for example, in the
21 '60's, your department would have been responsible for
22 packaging up, let's say, a quantity of it and getting it to
23 that customer for their testing or use?

24 A A function similar to that, yes. We didn't
25 have the sales sample function in the '60's as part of our

1 laboratory.

2 Q Do you know who did?

3 A It was part of the Technical Services
4 organization in the '60's, early '60's. I don't remember
5 the exact time when it became part of the laboratory. It
6 was sometime after 1966.

7 Q But prior to 1966, as far as you know, it
8 was part of Technical Services?

9 A Yes, sir.

10 Q And what was the physical location of the
11 department that would have had that responsibility for
12 packaging these samples?

13 A It was part of the, I'd guess you'd say, the
14 administration building for the plant.

15 Q At Krummrich?

16 A At Krummrich.

17 Q So as far as you know, then, this sales
18 sampling function was always confined to the Krummrich Plant
19 area in one division or department or another?

20 A Well, to send out products that we made at
21 that plant. Now, I'm sure that other locations have a
22 similar function also.

23 Q Okay. So is it your understanding that each
24 manufacturing facility has a sales sampling department or
25 function?

1 A Yes, sir, I would think they do.

2 Q Okay. Now, are records kept of the samples
3 that you would send out from time to time, as to who they
4 went to and what the request was and that sort of thing?

5 A There are records kept, yes.

6 Q Do they have a name? Is there some specific
7 form that's followed?

8 A To my knowledge, they are logged in a log
9 book.

10 Q Even today?

11 A Yes, sir,

12 Q Have you seen the log book?

13 A Yes, sir.

14 Q Is it just a handwritten kind of thing?

15 A Yes.

16 Q Do you know what happens to the log book?

17 A Well, they are kept on file for several
18 years and then once the material has been assumed to have
19 been used and so forth, the records are destroyed.

20 Q If somebody asked for the log books in the
21 sales sampling function, at least, you would know what they
22 were talking about, right?

23 A Yeah.

24 Q Now, in 1974 why, if you know, were you
25 testing for TCDD?

1 A Well, as I said, Mr. Vogel was working on
2 -- and he was not part of my organization. He was part of
3 the Process Research organization housed in the same
4 building in which I was located.

5 Q Do you know why Monsanto was testing for
6 TCDD in 1974?

7 A I don't know why that testing was initiated,
8 no, sir.

9 Q Did you know what Mr. Mieure was talking
10 about when he talked about the toxicity of TCDD in that
11 Exhibit 294?

12 A Well, as I recall, the concern at that time
13 was chloracne. That's the only thing that I was aware of.

14 Q Do you know where the chloracne was occurring
15 at that time?

16 A Would you elaborate on that, please?

17 Q Was there a chloracne problem or a breakout
18 of chloracne at some Monsanto facility?

19 A There were some people, apparently, have had
20 chloracne.

21 Q And do you know where that was?

22 A There were some at the Krummrich Plant.

23 Q Anyplace else?

24 A I'm not aware of any anyplace else.

25 Q The effort that's described in Exhibit 294

1 to analyze for TCDD, do you know how long that particular
2 project or job lasted, what period of time was involved
3 there?

4 A No, sir, I don't exactly. I would estimate
5 that Mr. Vogel was involved with that, perhaps, for a year,
6 or something like that.

7 Q And were you copied and did you receive most
8 of the correspondence that would be associated with that
9 ongoing project since you were over the, I guess, sales
10 sampling function, or, at least, that was in your department
11 at the time.

12 A I don't remember any number of letters or
13 memos regarding that.

14 Q Was there more than one?

15 A I don't know.

16 Q Do you recall any other projects or jobs
17 like that to analyze for TCDD?

18 A No, sir. That was the one that I mentioned
19 earlier that I was familiar with there was work being done.

20 Q Do you know if there were materials from
21 other plants that would have been handled through your
22 department that would have been analyzed for TCDD?

23 A No, sir, not to my knowledge, nothing from
24 other plants.

25 Q Do you know if Steve Vogel would have been

1 involved in analyzing for TCDD in materials from other plants?

2 A No, sir, I don't know that he was. I don't
3 believe that he was. He was assigned to work on products
4 at the Krummrich Plant.

5 Q Now, where did the pentachlorophenol come
6 from?

7 A We manufactured it for a number of years.

8 Q At the Krummrich Plant?

9 A Yes, sir.

10 Q And in connection with your testing of the
11 pentachlorophenol, were you also testing along about that
12 time the orthochlorophenol that was the by-product of
13 SantOphen?

14 A I really don't remember, sir. I was not
15 supervising the work and I just don't remember.

16 Q That would have been in 1974 when Steve
17 Vogel was doing this?

18 A Right.

19 Q At that time, at least, the preparation of
20 any samples for shipment, or whatever, would have come
21 through you, is that right?

22 A It's likely they would have, although, I'm
23 sure there were instances where they went over by some other
24 source.

25 Q Is it likely also that orthochlorophenol

1 was included with the pentachlorophenol? In fact, that
2 whole family were probably being tested, weren't they, at
3 that time?

4 A I don't know.

5 Q Is it likely that they were?

6 A You're asking me for an opinion?

7 Q Uh huh (yes).

8 A I would think it was likely they would have
9 been, yes.

10 Q They are fairly closely related, you're
11 chlorinating a benzene ring, so if you were into that par-
12 ticular problem of analysis, it would make sense, would it
13 not, that you'd probably be looking at pentachlorophenol and
14 orthochlorophenol in 1974 --

15 A Yes, sir, I would think so.

16 Q And dioxins were in fact found in one degree
17 or another in the pentachlorophenols and orthochlorophenols,
18 weren't they?

19 A I'm knowledgeable that they found them in
20 the penta, yes.

21 Q And from your knowledge of testing procedures,
22 if they were testing the orthochlorophenol, they, at least,
23 had the capability of finding it there also if they could
24 find it in the penta, right?

25 A Yes, sir.

1 Q Now, are records kept of those kinds of
2 tests?

3 A There are records kept at the time that the
4 work is done, but they are not kept indefinitely.

5 Q Is there some policy that relates to reten-
6 tion of --

7 A There's a records-retention system.

8 Q How would you identify the work that Mieure
9 -- I assume he would be writing down his findings and
10 recording it somehow?

11 A Yes, sir, I would certainly assume so.

12 Q Are those called laboratory records, or do
13 they have a specific name within your organization?

14 A Laboratory notebook.

15 Q Okay. And, I suppose, those are handwritten
16 documents that are created as the experiment, or whatever,
17 is progressing?

18 A That's right.

19 Q By the person who's actually doing the work?

20 A That's right.

21 Q Now, are those laboratory notebooks likewise
22 covered by your retention policy, documents retention policy?

23 A I'm not sure because what we do with the
24 laboratory notebooks at the Krummrich Plant after a booklet
25 has been filled, it's sent over to the library system at the

1 general offices and microfilmed and then they maintain the
2 files.

3 Q Well, that makes more sense. Obviously, you
4 wouldn't want to discard information that you gleaned from
5 experience, so you'd want to record that, I suppose, as
6 opposed to correspondence or something like that?

7 A Right.

8 Q So as far as you know, the laboratory note-
9 books, as such, become a part of the library of information
10 that Monsanto would have?

11 A Yes, sir, to my knowledge.

12 Q As far as you know, it's microfilmed?

13 A Yes, sir.

14 Q All right. Could I see 294 for a minute?

15 A Yes, sir.

16 Q Now, in the first paragraph of 294 reference
17 is made to seven chlorophenol fractions. Do you know what
18 that means?

19 A Those were production fractions, samples
20 that were taken from the production process at the time.

21 Q Now, when you say chlorophenol, is that
22 sufficiently descriptive to tell you what chlorophenol?

23 A No, sir, it isn't.

24 Q It could have been the ortho, the penta?

25 A I don't remember enough about the process

1 at this point in time to specifically state what specific
2 composition those fractions might have been.

3 Q Now, in the body -- I'm going to call that
4 a letter, #294.

5 A All right.

6 Q In the body of that letter from Mr. Meire
7 to you some general observations are made about the dioxins
8 that may be thrown or created in the chlorophenols. Are
9 those comments general to the orthochlorophenols, the penta-
10 chlorophenols? In other words, we are talking about the
11 family of chlorophenols, really, in that letter, aren't we?

12 A Yes, sir.

13 Q And that would support your opinion that it
14 was likely that orthochlorophenol was likewise being con-
15 sidered at that time?

16 A I would think it might be, but I don't
17 really have knowledge of that.

18 Q And you're an analytical chemist?

19 A Yes, sir.

20 Q And as an analytical chemist, if some con-
21 clusions are made about the chlorophenols and their potential
22 for dioxins, those statements may have some application to
23 the particular chlorophenols, like, penta or ortho, isn't
24 that right?

25 A Yes, sir.

1 Q The ability of the chlorophenols to create
2 dioxins at various uses and stages, it's kind of a common
3 thread when you're dealing with chlorophenols in these
4 various processes, isn't that right? You know what a
5 chlorophenol will do, and if you're working with ortho-
6 chlorophenol and you know it's a chlorophenol, you know you
7 have the potential to create a dioxin, don't you?

8 A That's possible. Like I say, I've forgotten
9 -- I'm not all that knowledgeable, directly knowledgeable of
10 the process, but I think there are some -- I think the
11 higher chlorinated materials would certainly tend to have
12 more potential for dioxin.

13 Q That's right. So if the penta had a
14 potential, then you as an analytical chemist would know you
15 get into orthochlorophenols and you're a little higher there,
16 are you not?

17 A No, you're not.

18 Q You're lower?

19 A Yes, sir.

20 Q You know that the penta and ortho both have
21 the capability of throwing a 2,3,7,8 tetrachlorodibenzo-
22 para-dioxin?

23 A I don't know that.

24 Q Just the ortho, right?

25 A I don't know that the ortho does.

1 Q You know what chlorophenols will have the
2 potential of creating a 2,3,7,8 TCDD?

3 A No, sir, I don't.

4 Q I mean, you never learned that as an
5 analytical chemist?

6 A No, sir. Not the chemistry of formation of
7 the dioxins.

8 Q And I'll ask you this one more time. In '74
9 you were looking at these chlorophenols for their dioxin
10 potential?

11 A Mr. Vogel was looking at it.

12 Q And you said that you thought one of the
13 reasons was because of chloracne you thought might have been
14 existing at the Krummrich Plant. You know of any other
15 reason why you might have been looking at the chlorophenols
16 for their potential dioxin content?

17 A No, sir, I don't.

18 Q And the next time you heard about Monsanto
19 looking at chlorophenols for their dioxin potential was in
20 early 1979 associated with the Sturgeon spill, is that right?

21 A Yes, sir. To my knowledge, that's what I
22 recall.

23 Q So, at least, in your recollection after
24 1974 or '75, whatever that time period was when Mr. Vogel
25 was looking at the chlorophenols for dioxins, the next time

1 you know that Monsanto was concerned about it was in early
2 1979 associated with the Sturgeon spill, is that right?

3 A To my knowledge. Because Mr. Vogel left
4 the plant into another position and there wasn't anyone
5 there doing that type of work subsequent to that.

6 Q Now, during that time period, '74 to 1979,
7 aside from the work that Mr. Vogel did in '74 and then the
8 work that you became, at least, tangentially involved in
9 in '79, do you know of any other testing that Monsanto was
10 doing for dioxins associated with chlorophenols?

11 A Well, I heard reference to Chick Edema tests.

12 Q Okay. And when did you hear about that?

13 A That was about the same time that Mr. Vogel
14 was doing this work.

15 Q In fact, it's mentioned in that memo, is
16 it not?

17 A Yes, sir.

18 Q Exhibit 294?

19 A Yes, sir.

20 Q And you also knew about rabbit ear tests,
21 right?

22 A Yes, sir, I heard about those.

23 Q What did you hear about the rabbit ear tests?

24 A Just that tests were being done. To my
25 knowledge, I never saw any results.

1 Q Never saw any --

2 A Never saw any results or never saw the

3 rabbit.

4 Q With chloracne, right?

5 A Because that was not done at our location.

6 Q But that was something in your line of work

7 as an analytical chemist you would have had some interest in,

8 wouldn't you?

9 A Yes, sir.

10 Q In fact, in your training as an analytical

11 chemist you did have some introduction to the toxicity of

12 various substances, did you not?

13 A Well, yes, sir, you're always --

14 Q I mean, that you're going to be working with

15 them.

16 A You're always concerned with the safety

17 aspects of anything you work with.

18 Q That was part of the course work you did?

19 At least, that was associated with the textbooks you read

20 and the literature?

21 A Yes, sir. You were always taught not to

22 add water to acid.

23 Q In your studies and, I assume, you kept

24 abreast over the years of developments in your field?

25 A I've tried to.

1 Q Aside from the media that you have read,
2 the newspaper accounts of pros and cons of the toxicity
3 of dioxins, did you read anything else at all about toxicity
4 of dioxins?

5 A In what manner, sir, what type?

6 Q Did you read they were toxic?

7 A Well, I've read in a number of scientific
8 journals reference to their being toxic to animals.

9 Q Okay. So you at least knew that. Was that
10 in the early '70's that you knew about that?

11 A About that time.

12 Q Did you ever read a German study by Kemick
13 (phoenetic) in 1957 regarding the toxicity of 2,3,7,8
14 tetrachlorodibenzo-para-dioxin?

15 A No, sir, I don't recall reading that.

16 Q You are familiar with it, though?

17 A No, I really can't say that I am. I joined
18 Monsanto in 1963 and I was doing analytical work prior to
19 that for another company but in a different line of chemi-
20 cals.

21 Q What company were you working for?

22 A Dow-Corning.

23 Q You worked with no chlorophenols or anything
24 like that?

25 A No, sir. Dow-Corning was involved strictly

1 with silicone.

2 Q Did you have any connection with a Nitro
3 Task Force?

4 A No, sir, not at all.

5 Q Ever seen or read any studies by Raymond
6 Suskind?

7 A No, sir, I can't recall that I did.

8 Q Do you know who he is?

9 A No, sir.

10 Q Now, do you know Dr. Callis?

11 A From Monsanto?

12 Q Yes, sir.

13 A Yes, sir, I know who he is.

14 Q Did you ever work with him or under him or
15 for him?

16 A No, sir.

17 Q Dr. Meyer? F. Meyer, Ferd Meyer at Monsanto.
18 He's retired now but he was with Monsanto?

19 A No, sir, I don't recall him.

20 Q The fourth paragraph of Exhibit 294 reads,
21 "Alternatively, another course of action seems attractive.
22 Since the reason for this analysis is to determine what
23 safety precautions are needed for the handling and disposal
24 of this residue, a more direct measurement of overall
25 toxicity is available. This would be to subject the residue

1 to a biological test, such as the rabbit ear or chick
2 embryo tests. This has the additional advantage that it
3 might detect other toxic components which could be in the
4 residue, such as other chlorodibenzodioxins or chloro-
5 dibenzofurans. While these compounds are significantly less
6 toxic than TCDD, we should not overlook their possible effect
7 on the overall residue toxicity." Then Mr. Mieure continues,
8 "It is my understanding that you and Steve Vogel are in
9 basic agreement with this approach." This letter was
10 addressed to you, so I assume the "you" Mr. Mieure was
11 referring to was H. J. Horner?

12 A I guess that's right.

13 Q Did you determine what safety precautions
14 should be taken in handling those dioxins referred to in
15 Exhibit 294?

16 A I didn't. I'm not aware of anything further
17 on that.

18 Q In 1974 do you think you would have known
19 what Mr. Mieure was talking about?

20 A I'm sure I was aware of his concerns.

21 Q And is it true that you were in agreement
22 with what he was saying?

23 A Yeah, he certainly had a lot more expertise
24 in that area than I did at the plant.

25 Q That may be true, but is it true you were in

1 agreement with what he was saying there in 1974 for testing
2 for safety precautions in that fashion?

3 A Yeah, what he was talking about there, I'm
4 sure, is being in agreement with the additional testing,
5 the rabbit ear and chick edema test.

6 Q And you knew what he was talking about,
7 referring to rabbit's ear and chick edema, in 1974, right?

8 A My only knowledge of it was it was supposed
9 to show response such as to chloracne type.

10 Q You really weren't very curious at all about
11 this dioxin or TCDD or chlorophenols in 1974, I guess?

12 A Not to any great extent.

13 Q And even today you're not, is that right?

14 A That's right, I'm still not aware of any
15 human health effects.

16 Q And you're just not particularly curious
17 about it either?

18 A I'm curious, certainly.

19 Q You don't really ask anybody about it, do
20 you, in the plant or your superiors or people in the
21 medical department? It's just not of much interest to you,
22 is it? If it were, you'd know more about it, wouldn't you?

23 A Yes, sir, I feel we'd know what we need to
24 know to work safely with the material.

25 Q Okay. Tell me what you need to know to work

1 safely with the material since you do know that.

2 A Well, the material really is in very, very
3 small concentrations in anything we work with, parts per
4 trillion, and the chemists that are actually doing the work
5 were instructed by the people who developed the method on
6 the necessary procedures to work with it safely.

7 Q And do you know what those procedures are?

8 A Not in detail.

9 Q Do you know about them generally?

10 A I can't relate them in order, no, sir.

11 Q Is it that you can't or you just aren't
12 going to?

13 A I really haven't -- no, sir, I just don't
14 know what they are in detail.

15 Q Is your lack of knowledge about these things
16 typical of Monsanto employees at your level? You don't
17 seem to know very much about it.

18 A I'm not directly involved with the analysis.
19 I haven't done any so-called bench work for twenty years.

20 Q In Exhibit 294 reference is made to concen-
21 tration levels of TCDD in these particular samples at the
22 six- to seven-parts-per-million concentration level, and you
23 just testified that the concentration levels of these
24 dioxins that you're aware of that Monsanto tests and works
25 with are in very small quantities, minute concentrations, I

1 think you said parts per trillion.

2 A Yeah, parts per billion, parts per trillion.

3 Q Has Monsanto established any safe level of
4 dioxin concentration, a level that you are concerned about
5 in terms of implementing safety precautions and handling a
6 chemical with that particular level of dioxin?

7 A Yes, sir, I know they have established a
8 level below which they don't ship any material.

9 Q I'm not sure I follow that. A level below
10 which they don't ship any material?

11 A Yeah. If they analyze and find above a
12 certain number, they would not ship that material.

13 Q I see. If it had a level --

14 A Concentration.

15 Q A concentration of dioxin above a certain
16 level, then that would not be shipped to a customer?

17 A Right.

18 Q What is that level?

19 A I don't have knowledge of that. This is
20 handled through a different part of the organization.

21 Q And when the sales sample function was
22 handled under your direction, was there also a level for
23 dioxin above which you would not ship materials?

24 A The sales sample function is currently under
25 my direction and has been since probably '67, '68, somewhere

1 around there.

2 Q But you don't know what the level is of
3 dioxin which would prohibit you from shipping something to
4 the customer, is that right?

5 A The material that's released for shipment
6 has to meet certain specifications.

7 Q I don't doubt that.

8 A We get permission from Marketing as to what
9 material can be sent.

10 Q And what permission have you gotten with
11 relation to dioxin content during the period 1966 through
12 today?

13 A Well, as I said, we have just begun analyzing
14 routinely for dioxin within the last year to year and a half,
15 and this is when the level I'm talking about, to my
16 knowledge, has been established.

17 Q What is that level? You surely know it,
18 don't you?

19 A I can't say specifically the number of parts
20 per billion.

21 Q Is it one part per billion?

22 A I really don't know specifically. I know
23 it's down in that area.

24 Q Was there any standard in 1974?

25 A No, sir, not to my knowledge.

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Q In 1970?

A (Shakes head negatively.)

Q As far as you know, the first time that Monsanto ever had a standard for dioxin content was in, like, the last year and a half, is that what you're saying?

A That's in regard to chlorophenols, yes, sir, the products that I'm knowledgeable.

Q Chlorophenols, that's what we have been talking about.

MR. CALWELL: All right, Mr. Horner.

Thank you very much.

Henry J. Horner

1
2 STATE OF ILLINOIS)
3) SS
4 COUNTY OF MADISON)
5
6

7 I, M. JOY SPRINGER, a Notary Public, duly
8 commissioned and qualified in and for the County of Madison,
9 State of Illinois, do hereby certify that pursuant to notice
10 came before me on the 8th day of July, 1983, at the
11 Radisson Hotel, Room 215, 9th Street and Convention Plaza,
12 St. Louis, Missouri, HENRY J. HORNER, who was by me duly
13 sworn to testify to the truth and nothing but the truth of
14 his knowledge touching and concerning the matters in con-
15 troversy in this case; that he was thereupon carefully
16 examined upon oath, and his examination reduced to writing
17 under my supervision; that the deposition is a true record
18 of the testimony given by the witness; and signature of the
19 witness was not waived by agreement of counsel.

20 I FURTHER CERTIFY that I am neither attorney
21 nor counsel for nor related to nor employed by any of the
22 parties to the action in which this deposition is taken;
23 and further, that I am not a relative or employee of any
24 attorney and counsel employed by the parties hereto, or
25 financially interested in the action.

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IN WITNESS WHEREOF, I have hereunto set my
hand and affixed my notarial seal on this _____ day of
_____, 1983.

Notary Public within and
for the County of Madison,
in the State of Illinois.