

MONTANA TENTH JUDICIAL DISTRICT COURT, FERGUS COUNTY

MARTY PAULSON, WILLIAM J.)
 HAUGEN, HARRY FELTON, RAY)
 ROBINSON AND WARD BURLEIGH,)
 PRESIDENT; BURLEIGH ANGUS)
 RANCH, INC., INDIVIDUALLY)
 AND FOR ALL PERSONS)
 SIMILARLY SITUATED,)

PLAINTIFFS,)

) CAUSE NO. DV-2004-55

vs.)

) HON. KURT KRUEGER

MONSANTO CHEMICAL COMPANY)
 N/K/A PHARMACIA, MONTANA)
 DEPARTMENT OF FISH, WILDLIFE)
 AND PARKS, AND JOHN DOE PAINT)
 COMPANIES AND DISTRIBUTORS I)
 THROUGH X,)

DEFENDANTS.)

VIDEOTAPED DEPOSITION OF WILLIAM PAPAGEORGE
 TAKEN BY TORGER S. OAAS, ESQ.
 ON BEHALF OF THE PLAINTIFFS
 JUNE 27, 2006

VOLUME II

REPORTED BY CHRISTOPHER C. WIEGERS
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1 MONTANA TENTH JUDICIAL DISTRICT COURT, FERGUS COUNTY 2 3 MARTY PAULSON, WILLIAM J.) HAUGEN, HARRY FELTON, RAY) 4 ROBINSON AND WARD BURLEIGH,) PRESIDENT; BURLEIGH ANGUS) 5 RANCH, INC., INDIVIDUALLY) AND FOR ALL PERSONS) 6 SIMILARLY SITUATED,)) 7 PLAINTIFFS,)) CAUSE NO. DV-2004-55 8 vs.)) HON. KURT KRUEGER 9 MONSANTO CHEMICAL COMPANY) N/K/A PHARMACIA, MONTANA) 10 DEPARTMENT OF FISH, WILDLIFE) AND PARKS, AND JOHN DOE PAINT) 11 COMPANIES AND DISTRIBUTORS) THROUGH X,) 12) DEFENDANTS.) 13 14 15 VIDEOTAPED DEPOSITION OF WILLIAM PAPAGEORGE, 16 produced, sworn and examined on the 27th day of June, 17 2006, between the hours of eight o'clock in the 18 forenoon and six o'clock in the afternoon of that day 19 at the offices of Husch & Eppenberger, LLC, 190 20 Carondelet Plaza, Suite 600, in the City of St. Louis, 21 State of Missouri, before CHRISTOPHER C. WIEGERS, 22 Certified Court Reporter, in a certain cause now 23 pending in the Montana Tenth Judicial District Court, 24 Fergus County, in the above-captioned matter. 25	1 INDEX 2 PAGE 3 Examination by Mr. Oaas 6 4 Examination by Mr. Brown 144 5 Examination by Mr. Miller 171 6 7 8 EXHIBITS 9 10 No. 31 - 9/28/70 Letter From D.K. Mitchell 6 11 No. 32 - 4/17/70 Letter From R.E. Keller 6 12 No. 33 - 6/20/69 Letter From Mr. John 6 13 No. 34 - 6/10/69 Letter From Mr. Springgate 6 14 No. 35 - Analytical Chemistry Special Study 6 15 No. 36 - 7/28/70 Letter From Mr. Papageorge 6 16 No. 37 - 10/29/70 Letter From Dr. Kelly 6 17 No. 38 - 3/31/71 Letter From Mr. Papageorge 6 18 No. 39 - Mother's Milk Sample Plan 6 19 No. 40 - Monsanto Application Data Bulletin 6 20 No. 41 - Excerpt From 3/31/98 transcript 6 21 No. 42 - 7/17/70 Letter To H.S. Bergen 6 22 No. 43 - 3/21/69 Report By Mr. Metcalf 6 23 No. 44 - Table Study 6 24 No. 45 - July, August, September Quarterly Report 6 25 No. 46 - Minutes of Aroclor Ad Hoc Committee 6
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Page 153 1 (Deposition Exhibit Nos. 31 through 53 2 marked for identification. 3 THE VIDEOGRAPHER: We are back on the 4 record, June 28, 2006 with tape no. 1. 5 EXAMINATION 6 BY MR. OAAS: 7 Q. Good morning, Mr. Papageorge. 8 A. Good morning. 9 Q. We're ready to start our second session this 10 morning on June 28th at about 9:00. I just wanted to 11 ask you a few preliminary matters first. You -- you 12 recognize that you're still under oath, the same oath 13 that was administered yesterday? 14 A. I do. 15 Q. Okay. And again, you -- you feel that 16 you're mentally and physically ready to go for your 17 deposition this morning? 18 A. I think I am. 19 Q. All right. Great. You know, I think I was 20 on Exhibit 30 when we finished our session yesterday. 21 Let's go back to that for just a -- a minute if we 22 could, please, sir. And I had directed your attention 23 to page 128 of that exhibit. Are you there? 24 A. I have it. 25 Q. And I had read the second paragraph under	Page 155 1 A. I do -- personally do not associate PCBs as 2 an anti-fouling ingredient in paints. 3 Q. (By Mr. Oaas) Well, I'm talking about being 4 used as a plasticiser -- 5 MR. MILLER: Same -- same objection. 6 Q. (By Mr. Oaas) -- in an anti-fouling paint. 7 A. Well, to me, the expression plasticiser is a 8 broad -- a broadly covered expression for these 9 materials, so they're plasticisers as a category, and 10 the fact that they're PCBs -- there are many, many 11 plasticisers including some PCBs -- 12 Q. All right. 13 A. -- so -- 14 Q. Well, what I'm trying to get at -- let me 15 ask the question this way, Mr. Papageorge. In -- in 16 our case in Montana, it's alleged that the paint that 17 was painted on the concrete hatchery raceways of the 18 Big Springs Creek Trout Hatchery contained PCBs 19 specific -- and it's alleged that those PCBs were 20 Aroclor 1254 that would have been used as a plasticiser 21 in that paint. Now, with that background, the use of 22 that paint on concrete surfaces that contained PCBs as 23 a plasticiser, that would be considered a normal use 24 for -- for -- for that kind of paint, correct? 25 MR. MILLER: Object to the form.
Page 154 1 the heading biological effects which referred to an 2 incident of fish death at a Swedish hatchery? 3 A. Yes, I remember that. 4 Q. Okay. What I wanted to ask you was do -- do 5 you know what anti-fouling -- what is meant by the 6 phrase anti-fouling paint? 7 A. Well, I can give you my understanding of the 8 expression anti-fouling. 9 Q. That would be fine. 10 A. Anti -- the expression anti-fouling to me 11 implies that whatever is done prevents or reduces 12 fouling of anything, and by fouling, I mean 13 degenerating it or lowering its value or ruining it. 14 So it's a -- it's an overall expression, anti-fouling 15 of -- 16 Q. All right. 17 A. -- any -- any lessening of properties of 18 any -- any material in any activity. 19 Q. All right. Well, based upon your 20 understanding of the normal uses for PCBs in paints, 21 would the use of a PCB as a plasticiser in anti-fouling 22 paint be considered a normal use? 23 MR. MILLER: Let me object to the form. Are 24 you talking about in Sweden? 25 MR. OAAS: Anywhere.	Page 156 1 A. At what time? 2 Q. (By Mr. Oaas) Oh, in the 1960s? 3 A. You said it would be a no -- no known use? 4 Q. A normal use. 5 A. There was no reason to believe at that time 6 that PCBs in that paint would result in anything un -- 7 unappreciated or un -- unusual. 8 Q. Well, that isn't my question, but I -- my 9 question is, would the use of that kind -- would the 10 use of a paint that contained PCBs as a plasticiser be 11 considered a normal use as a coating on the concrete 12 surfaces of the -- of the hatchery raceways? 13 MR. MILLER: Let -- let me object to the 14 form. Normal use for a hatchery? 15 MR. OAAS: No. 16 Q. (By Mr. Oaas) Based upon the recommended 17 uses that we talked about in -- in these previous 18 exhibits, is a -- remember we had a previous exhibit 19 that talked about the use of PCBs in paint for a 20 protective or decorative coating on masonry surfaces in 21 wall -- floors and walls? 22 A. I remember that. 23 Q. Okay. And -- and my question is -- I'm 24 obviously not asking it very well -- is if the Montana 25 Department of Fish, Wildlife and Parks purchased a

1 paint that contained PCBs as a plasticiser for use on
2 their concrete hatchery raceways, wouldn't Monsanto
3 consider that to be an appropriate use for that kind of
4 paint?

5 MR. MILLER: Object to the form of the
6 question. It precedes Mr. Papageorge's involvement in
7 environmental control issues, but subject to that, you
8 can answer, Bill.

9 A. The use you just described in the '60s was
10 very normal.

11 Q. (By Mr. Oaas) All right.

12 A. It was not considered harmful.

13 Q. I understand.

14 A. There was no information to indicate it's
15 harmful.

16 Q. All right. Now, I wanted to go back to your
17 resume just for a minute and ask you about the
18 transition period between your -- your position as
19 Plant Manager in Anniston and the time when you
20 switched over to be -- to then become Manager of
21 Environmental Control for Monsanto. I believe you
22 testified that that took place in early 1970?

23 A. Yes.

24 Q. Okay. Can you just -- just tell me about
25 that -- how you be -- how you came to be moved from

1 Operations in 1977. Was that for all of Monsanto's
2 operations or was --

3 A. I -- I have to see that --

4 Q. -- that specifically limited to PCBs again?

5 And I -- I'll give you a copy of Exhibit 1. You can
6 use that if you want.

7 A. In '77?

8 Q. Right.

9 A. Are you talking about this Manager of
10 Product Acceptability?

11 Q. No. I was talking about your -- down in
12 1977 where it says Director of Environmental Operations
13 beginning in 1977.

14 A. Well, at -- at that time that job covered a
15 bigger part of Monsanto, and that part was called the
16 Chemical Intermediates Company, and it covered
17 environmental issues of all kinds relating to the
18 chemical manufacturing industry.

19 Q. All right. Now, when you first became
20 Manager of Environmental Control, other than what was
21 consistent with your duties of Plant -- Plant Manager
22 at -- at Anniston, did you ever have any education or
23 training with respect to environmental protection?

24 MR. MILLER: Let me object to the form.
25 When you say environmental protection, do you mean

1 Plant Manager at Anniston to Manager for Environmental
2 Control?

3 A. You're asking me to kind of speculate as to
4 what my bosses were thinking --

5 Q. Just from your point of view.

6 A. -- when they chose me. First of all, I
7 had -- I did have experience in the production of PCBs
8 and the shipment of PCBs to customers. I can only
9 speculate that that boss -- the bosses felt that that
10 was almost a necessary requirement for the job that
11 they newly created for someone to follow that PCB issue
12 closely in every respect.

13 Q. So you would have been the first Manager for
14 Environmental Control for Monsanto?

15 A. Yes.

16 Q. Okay. And -- and when I say for Monsanto,
17 you -- you were the -- your title was Manager of
18 Environmental Control, and that was for the entire
19 company?

20 A. I was the only one with that title --

21 Q. All right.

22 A. -- but my subject was limited when I was
23 assigned to PCB issues.

24 Q. All right. Same question with respect to
25 when you became the Director of Environmental

1 waste handling, things of that nature? I'm not sure --

2 MR. OAS: Just in its broadest sense.

3 A. My education really didn't -- when I was
4 getting educated, the word environment was never in the
5 discussions, but the -- there were situations where the
6 control of vapors and fumes and spills and -- whether
7 by accident or on purpose, were discussed in my
8 training.

9 Q. (By Mr. Oaas) As the Plant Manager at
10 Anniston?

11 A. That's one of the positions. All -- all of
12 my positions involved control of material getting away
13 from the operation.

14 Q. All right. Let's go on to Exhibit 31.

15 A. I have scanned the exhibit.

16 Q. All right. Have you ever seen that document
17 before, sir?

18 A. Yes.

19 Q. Okay. And can you identify who D.K.
20 Mitchell and B.T. Dean are?

21 A. They were members of Monsanto's research
22 department involved with Dr. Scott Tucker in an -- in
23 the analytical studies relating to PCBs.

24 Q. Okay. In my reading of this exhibit, I take
25 it that in the 1970s Monsanto was interested in

1 compiling any reports across the United States that
2 dealt with the finding of PCBs in the environment?

3 A. Well, you said across the United States. As
4 I recall this document and refresh my memory reading
5 it, this involved a specific area of the country, not
6 across the United States.

7 Q. What areas are we talking about?

8 A. The area around Pensacola, Florida and the
9 Gulf of Mexico.

10 Q. All right. And my understanding of -- of
11 the exhibit -- and I just -- what lawyers do is they
12 count. I counted up the 69 samples reported in this
13 exhibit of the finding of the presence of PCBs in fish,
14 water, and sediment in those areas.

15 A. Yeah.

16 Q. If my counting is correct, you would agree
17 with that?

18 A. Yes.

19 Q. All right. Let's go on to the next exhibit,
20 32, please.

21 A. I have scanned the exhibit.

22 Q. Okay. And I -- I believe you would have
23 seen this exhibit before since it was a memo directed
24 to you?

25 A. Yes.

1 Q. The date of it is April 17, 1970, correct?

2 A. Correct.

3 Q. And I believe you identified R.E. Keller
4 yesterday, but let's do it -- do it again one more time
5 today. Would you --

6 A. Dr. Keller was a chemist in Monsanto's
7 research department located in St. Louis, and he
8 supervised a group in the research department that was
9 involved with analyzing for chemicals.

10 Q. Okay. And Dr. Keller appears to be
11 reporting to you a -- a summary of what Monsanto knew
12 as of the date of this memo regarding the detection of
13 PCBs in environmental materials?

14 A. Well, when you use the expression what
15 Monsanto knew, I don't know that this covers everything
16 Monsanto, with its employees, knew.

17 Q. Okay.

18 A. It just covers the so -- reference to 167
19 samples.

20 Q. Okay. Okay. In the first paragraph -- and
21 maybe I mis -- used a poor choice of words and it -- it
22 just says this note summarizes work we have done to
23 date on the detection of PCBs in environmental
24 materials. That's all I was trying to get at. Okay?

25 A. Yeah, I understand.

1 Q. It says that they -- you had found --
2 detected PCBs in the environmental materials in the
3 water and sediment from nine U.S. rivers, one UK river,
4 and Lake Michigan, correct?

5 A. Correct.

6 Q. In the air at the Anniston plant?

7 A. Yes.

8 Q. Fish from Lake Michigan and three Midwest
9 rivers?

10 A. Correct.

11 Q. Now, they -- would they be included in the
12 nine U.S. rivers under the first bullet item or are we
13 up to 12 -- 12 U.S. rivers or do you know?

14 A. I don't know.

15 Q. All right. Human fat from a Midwest biopsy
16 specimen and -- and then the last item is milk from
17 Maryland and Ohio dairy farms?

18 A. Yes.

19 Q. Was that the first indication, at or around
20 this date, April 17, 1970, that PCBs had been found in
21 milk produced on Maryland and Ohio dairy farms?

22 MR. MILLER: Object to the form of the
23 question. Is that the first time on this date that he
24 had understanding? It was a nonsensical question,
25 Torger. You may want to re-ask it.

1 Q. (By Mr. Oaas) Did you understand the
2 question, sir?

3 A. I think I do.

4 Q. Okay. Go ahead.

5 A. Yes, that is the first evidence of PCBs
6 present in milk.

7 Q. Okay. Let's go on to Exhibit 33 then,
8 please.

9 A. I have read the exhibit.

10 Q. Okay. Can you identify Edward V. John,
11 please, who appears to author the exhibit?

12 A. I'm sorry?

13 Q. Can you identify Mr. John?

14 A. Oh, Mr. John --

15 Q. Yeah.

16 A. -- is an employee of Monsanto responsible
17 for public relations for the part of Monsanto called
18 the Organic Chemicals Division.

19 Q. And was the production of PCBs part of the
20 Organics Chemical Division?

21 A. Yes.

22 Q. Now, I want to just direct your attention to
23 the next to the last paragraph of this exhibit. It
24 says PCB is used in certain types of marine paints.
25 The water leachability of these paints is so low,

Page 165 1 however, that it seems incredible to us that this would 2 explain the source of PCB in the amounts that have 3 allegedly appeared in the water. Did I read that 4 correctly? 5 A. Yes, you did. 6 Q. Would you agree with that statement? 7 A. Yes. 8 Q. Let's go on to Exhibit 34. 9 A. I have read the exhibit. 10 Q. Okay. Have you ever seen this Exhibit 34 11 before today, sir? 12 A. It appears familiar to me, but -- 13 Q. Okay. It appears to be dated in June of 14 1969? 15 A. Yes. 16 Q. You've identified Mr. Springgate 17 previously. Can you identify Mr. W.E. Schalk, 18 S-h-a-l-k (sic)? 19 A. Mr. Schalk is the Marketing Director of the 20 group referred to as Plasticiser Group which is headed 21 by Mr. Springgate. 22 Q. All right. Now, this letter concerns the 23 subject of -- appears to concern the subject of paint 24 containing PCBs being used to coat the interior of 25 drinking water reservoirs. Would that be correct?	Page 167 1 A. Martin is M.W. Farrar who is copied in on 2 this. 3 Q. Okay. And he -- he would -- what was his 4 job title with -- 5 A. He was -- he was the head of the group that 6 did research for the plasticisers group. 7 Q. All right. And apparently as of that date, 8 Monsanto knew how to calculate down to parts per 9 billion the amount of Aroclor in tap water? 10 MR. MILLER: Let me object to the form -- 11 form of the question. Calculate the solubility or to 12 determine the level -- 13 MR. OAAS: Yeah, calculate the solubility of 14 Aroclor in tap water. 15 MR. MILLER: All right. That's a different 16 question. 17 A. Well, the only reason I hesitate -- the new 18 methods of analyses brought about by Jensen's work were 19 not available in '69, so any studies in which they're 20 trying to develop a level of PCBs use the existing 21 analytical methods of the day. 22 Q. (By Mr. Oaas) Okay. Well, somebody has 23 handwritten down at the bottom of the letter Martin, 24 dated 6/23/69 the solubility of Aroclor in tap water 25 is -- and for Aroclor 1242, 200 parts per billion;
Page 166 1 A. That is correct. 2 Q. Okay. And the third paragraph down reads 3 one such use would be in paints for the interior of 4 water towers where the water is primarily for human 5 consumption. Howard Bergen was under the impression we 6 were asked about this specific use several years ago 7 and did approve it. Can you tell me who Howard Bergen 8 is? 9 A. Howard Bergen -- 10 Q. Bergen, excuse me. 11 A. -- is the head of the part of Monsanto 12 referred to as the Functional Fluids Group, and at one 13 time in the earlier days that group included the 14 plasticisers that were PCB in origin, so it was 15 overlapping. Later on it was divided into -- 16 Mr. Bergen kept the functional fluids, Mr. Springgate 17 got the plasticisers. 18 Q. All right. And then down at the bottom of 19 the letter there's a -- kind of a footnote. It says 20 Martin, colon, would you please have someone calculate 21 the probable level of PCB in water from a water tower 22 painted with Aroclor formulation. Did I read that 23 correctly? 24 A. Yes. 25 Q. Do you know who Martin would be?	Page 168 1 Aroclor 1248, 100 parts per billion; and Aroclor 1254, 2 50 parts per billion. Is that -- am I reading that 3 correctly? 4 A. Yes. 5 Q. Okay. Let's go on to Exhibit 35 then, 6 please. 7 A. I have read the exhibit. 8 Q. Thank you. Have you ever seen this exhibit 9 before, sir? 10 A. I don't remember it specifically, but it's 11 typical of the kind of information I had access to. 12 Q. Okay. Let's go to the second page just -- 13 just to start with. I'm trying to orient a -- a date 14 to this exhibit. Do you see down in the bottom of the 15 left-hand corner the heading Monsanto Company, Organic 16 Chemicals Division, Applied Sciences Section, 17 St. Louis, Missouri. Do you see that -- do you see 18 that there? 19 A. Yes. 20 Q. And then -- then the numbers 3-70 appear 21 below that? 22 A. Yes, I see that. 23 Q. Would that be the date of this document, 24 March of 1970? 25 A. I would be guessing. I don't know.

Page 169 1 Q. Okay. Can you identify -- I believe we've 2 identified E.S. Tucker, correct? 3 A. Yes. 4 Q. Okay. Who is W.J. Litschgi? 5 A. He is another chemist that belonged to the 6 group headed by Dr. Keller. 7 Q. Okay. And again, the Organic Chemicals 8 Division referred to in this part of the exhibit is the 9 division that encompassed the production and sale of 10 PCBs? 11 A. At that time, yes. 12 Q. In -- in the 1970 time frame? 13 A. Yes. 14 Q. Okay. Now, the head -- let's go back to the 15 front page of this document. It's titled Extraction of 16 Aroclor 1254 From Painted Surfaces By Water. 17 A. I see that, yes. 18 Q. Okay. My understanding of this document 19 as -- as a laymen is that -- is that an experiment was 20 conducted by Dr. Keller's group where they took paint 21 that had PCBs in it, painted tin plates, put it in 22 water for certain periods of time, and then measured 23 the water to see if there were PCBs in the water? 24 MR. MILLER: Object to the form. It's 25 incomplete as to what steps were taken.	Page 171 1 that they were able to find -- Dr. Keller's group was 2 able to find measurable amounts of -- of Aroclor 1254, 3 I think was the particular Aroclor involved in this 4 exhibit, within two -- two weeks, correct? 5 A. Yes. 6 Q. Okay. And the -- and the results are 7 reported there on the first page of the exhibit, 8 correct? 9 A. Yes. 10 Q. All right. 11 A. And you mentioned two weeks. It -- it goes 12 on to six weeks. 13 Q. Okay. Now, if this -- if this document 14 was -- if this experiment was, in fact, done in the 15 first part of 1970, would it be your testimony that 16 this would be new information to Monsanto? 17 MR. MILLER: Object to the form. There's no 18 foundation. 19 A. Well, it would be new because apparently 20 this procedure wasn't previously followed -- 21 Q. (By Mr. Oaas) All right. 22 A. -- and they had the analytical techniques. 23 Q. Okay. And I take it as Manager of 24 Environmental Control, which you would have been at 25 that time, you would have been interested in -- in the
Page 170 1 Q. (By Mr. Oaas) Would that be -- would that 2 be a rough characterization of the experiment? 3 A. That's what they're trying to describe here, 4 yes. 5 Q. Okay. 6 MR. MILLER: They were also put in an oven. 7 There -- there wasn't a complete list of the steps. 8 Q. (By Mr. Oaas) Was the -- I take it -- my 9 understanding was they were just trying to see whether 10 or not PCBs could be removed from the paints simply by 11 the action of the water? 12 MR. MILLER: Object to the form. That's 13 incomplete. Water at 50 degrees Celsius. 14 A. Well, it's -- it's a reaction of the water 15 on the mixture. 16 Q. (By Mr. Oaas) Okay. 17 A. Not just the PCB itself. 18 Q. But the entire -- 19 A. That whole mixture that's listed there 20 starting with Parlon, then Aroclors. 21 Q. Everything that was in the paint? 22 A. Correct. 23 Q. Including the PCBs? 24 A. Correct. 25 Q. Okay. And the results of the exhibit were	Page 172 1 results of this kind of experiment? 2 A. Well, certainly. 3 Q. All right. Let's go on to Exhibit 36, 4 please, sir. 5 A. I have read the exhibit. 6 Q. Okay. This -- this exhibit appears to be 7 a -- a letter written by you on or about July 28th of 8 1970, correct? 9 A. Correct. 10 Q. Okay. Who is it directed to? 11 A. It's an individual, William Herman, with the 12 Koppers Company. 13 Q. Okay. And what do you know about Koppers 14 Company -- or what did you know about Koppers Company 15 at that time? 16 A. As best I remember, they're involved with 17 the construction of silos for storing grain and so on. 18 Q. All right. Were they a PCB customer of 19 Monsanto in the 1970s? 20 A. Yes. 21 Q. Okay. Now, the first paragraph references 22 apparently he had written to you requesting information 23 about the contribution of PCBs in paints to 24 contamination of the environment? 25 A. Would you repeat that again?

1 Q. Sure. It says in your letter dated July 17,
2 1970, you requested additional information on the
3 contribution of Polychlorinated Biphenyls in paints to
4 contamination of the environment?

5 A. Yes.

6 Q. Okay. And you were responding to that
7 inquiry?

8 A. Yes.

9 Q. Okay. The next paragraph says in addition
10 to the Ohio milk incident. Can you tell me what you
11 were referring to there, the Ohio milk incident?

12 A. There was an incident reported that cattle
13 fed grain from silos that were painted with a -- a
14 paint that contained PCBs were producing milk which had
15 PCBs present.

16 Q. Okay. Was there just one report or -- or
17 were there more than one reports concerning that
18 nature?

19 A. Well, there were -- there were reports of
20 many silos, so there would have been more than one
21 report.

22 Q. Okay. And that -- and I'm just referring to
23 the letter. That would have been in Ohio as well as in
24 Georgia and Florida?

25 A. Yes. At that time.

1 Q. And the reports from Georgia and Florida
2 were similar to what you just described as the report
3 about the Ohio milk incident?

4 A. Correct.

5 Q. And then you went on to say that you had
6 reports about oysters off the east coast of Georgia
7 containing PCBs?

8 A. Yes.

9 Q. Okay. Do you recall at this time where
10 those reports came from?

11 A. I have a hard time recalling specifically.

12 Q. All right. This -- that paragraph goes on
13 to say we suspect the source to be paint formulators
14 along the Savannah River. Do you see that?

15 A. I do.

16 Q. Was that ever confirmed -- that suspicion
17 ever confirmed?

18 A. Not to my knowledge.

19 Q. All right. How about the Ohio milk incident
20 report? Was that -- was it ever confirmed that the
21 coating on the inside of silage storage bins that
22 contained PCBs passed the PCBs from the paint to the
23 silage to the cows to the milk?

24 A. The report, as I understood it, was that the
25 paint peeled off and was scraped off, so it wasn't a

1 matter of PCBs moving into the feed. It's the -- the
2 paint flakes -- or the whole paint, whatever was in it,
3 was involved in this mixture with the feed --

4 Q. Okay.

5 A. -- that the cattle ate, and the PCBs were
6 detected in the milk produced by those cows.

7 Q. Okay. And I appreciate your clar --

8 clarifying that, but the point of my question was
9 those -- those reports were confirmed as being -- as
10 being accurate?

11 MR. MILLER: Let me object to the form.

12 A. I don't know about confirming it.

13 Q. (By Mr. Oaas) Is that --

14 A. It was determined by Monsanto's laboratory
15 after they received samples.

16 Q. All right. Okay. And would the same be
17 true about the reports from Georgia and Florida?

18 A. As best I remember, yes.

19 Q. Okay. All right. Now, in the third
20 paragraph you go on to say Monsanto's action regarding
21 the withdrawal of Aroclors from specific applications
22 was based on a number of incidents, all of which
23 indicated that any application which could not be
24 controlled would eventually create a problem. Okay.
25 Is that correct?

1 A. Yes.

2 Q. And that's something that you as Manager of
3 Environmental Control believe to be true as of the date
4 you wrote the letter, correct?

5 A. Yes.

6 Q. Okay. Regarding the milk -- the Ohio milk
7 incident reports, do you know how it came to be
8 determined that the -- the paint was suspected as being
9 the source of the PCBs?

10 A. I don't remember what triggered that -- that
11 interest.

12 Q. All right. Okay. Let's go on to Exhibit
13 37.

14 A. I have read the exhibit.

15 Q. Okay. And again -- again, it appears to be
16 authored -- authored by Dr. Kelly who you've identified
17 as being Head of the Medical Department, correct?

18 A. Correct.

19 Q. And again, it's written -- it's written to
20 an individual who appears to be employed at the
21 Kettering Laboratory who we've talked about before,
22 correct?

23 A. Correct.

24 Q. Okay. And Dr. Kelly is -- states at the
25 beginning of the letter dear Mitch, I find no record

Page 177 1 that we have advised Aroclor for use in silo paints. I 2 certainly hope we have not; however, I know it is in 3 there, and certainly when it was put in there, nobody 4 had any idea it would get out into the silage and 5 proceed from there to the cow to the milk. At the time 6 that statement was -- was made on October 29th of 1970, 7 would you have agreed with that statement made by 8 Dr. Kelly? 9 A. Yes. 10 Q. Okay. And I want to go down to the bottom 11 of the letter. It says B -- BC -- this was -- you were 12 giving a blind copy of this letter, I take it? 13 A. Yes. 14 Q. It says BCC: W.B. Papageorge, dash, Bill 15 have we ever taken any positive steps to be sure people 16 aren't still painting silos with paint that has Aroclor 17 as a component. Do you see that? 18 A. Yes. 19 Q. Okay. My question to you is, as Manager of 20 Environmental Control -- which I believe you -- you 21 were at that time, correct? 22 A. Yes. 23 Q. For Monsanto, correct? 24 A. Correct. 25 Q. -- did you personally ever -- ever author	Page 179 1 tell me what the subject is -- of this was about? 2 A. Well, it's of course related to paints used 3 in meat packing plants. 4 Q. Okay. Here's -- here's some of the 5 questions I have about the letter. In March of 1971, 6 hadn't Monsanto ceased producing PCBs for use as 7 plasticisers? 8 A. Yes. 9 Q. Okay. Do you know how it could be then that 10 in March of 1971 the government appeared to be 11 approving a formulation for paint in meat production 12 facilities that contained PCBs? 13 A. I do not. 14 Q. Okay. Apparently, you had that information? 15 MR. MILLER: What information? 16 Q. (By Mr. Oaas) The information that the 17 government had approved a for -- a paint formulation 18 containing PCBs for use in -- in meat processing 19 facilities? 20 MR. MILLER: Ob -- object to the form. The 21 document only refers to what was reported to him by a 22 third party, not the government directly. 23 MR. OAAS: Okay. 24 A. I -- I'm confused by the question. 25 Q. (By Mr. Oaas) Okay. How did you get the --
Page 178 1 any letters to any dairy farmer in either Ohio or 2 Georgia and Florida passing along any information about 3 the existence of PCBs in silo paint? 4 A. I personally, no. 5 Q. Okay. Did you ever authorize anybody to do 6 it on your behalf? 7 A. Authorize on my behalf? 8 Q. Right. 9 A. No. 10 Q. Let's go on to the next exhibit, 38. 11 A. I have read the exhibit. 12 Q. Okay. This appears to be a letter authored 13 by you on March 31, 1971, correct? 14 A. Correct. 15 Q. This would be in your capacity as Manager of 16 Environmental Control for Monsanto, correct? 17 A. Correct. 18 Q. And it's addressed to a D.W. Miller. Who is 19 he? 20 A. Yes. 21 Q. Who is he? 22 A. Oh, he was a member of the marketing team 23 involved with the sale of materials which we called 24 plasticisers. 25 Q. Okay. In your own words, could you just	Page 180 1 let me just ask you this. Do you recall how you got 2 the information that the government had approved a 3 paint formulation that apparently contained PCBs for 4 use in a meat processing plant? 5 MR. MILLER: Object to the form. It 6 presumes the government made that approval. 7 A. All I remember -- and this refreshed my 8 memory -- is that I talked to somebody at Sherman 9 Williams who relayed that information to me. I have no 10 way of recalling at this time how accurate that was and 11 how informed the individual was. 12 Q. (By Mr. Oaas) Okay. As Manager of 13 Environmental Control, do you recall doing any follow- 14 up investigation concerning that information to see 15 whether or not the government was actually recommending 16 paints containing PCBs for use in meat processing 17 plants? 18 A. I don't recall what specifics followed this, 19 but -- 20 Q. Okay. Okay. The next to the last paragraph 21 says I -- I recognize that this does not directly 22 relate to the Ohio silo cases, but it is the first 23 example we have of a federal agency approving a coating 24 containing Aroclor 1254 for use near food intended for 25 human consumption. Perhaps Jacob Hess can use this

Page 181 1 information. Did I read that correctly? 2 A. Yes, you did. 3 Q. Can you identify Jacob Hess for me, please? 4 A. He was a member of the marketing team, a 5 salesman out in the -- in the field -- 6 Q. Okay. 7 A. -- contacting customers. 8 Q. Okay. Let me ask you this question. As 9 Manager of Environmental Control for Monsanto, did 10 you -- did you think it would have been proper for the 11 government to be approving of a paint formulation 12 containing PCBs for use in meat processing plants where 13 the meat was going to be used for human consumption. 14 A. Well, since I supported the discontinuance 15 of selling PCBs for coatings, I don't think I would 16 support any agency approving it. 17 Q. Okay. All right. 18 A. It just wouldn't fit into our knowledge, 19 experience, and intent. 20 Q. All right. 21 MR. MILLER: And the fact that the product 22 wasn't on the market. 23 Q. (By Mr. Oaas) Then it says in the last 24 paragraph it appears to me that the possibility of a 25 PCB problem arising in meat processing plants is	Page 183 1 Q. Okay. Let's go on to Exhibit 40. 2 A. I have scanned the exhibit. 3 Q. All right. And it appears to be a Monsanto 4 publication, correct? 5 A. Correct. 6 Q. Okay. It's entitled The Aroclors, Physical 7 Properties and Suggested Applications, correct? 8 A. Correct. 9 Q. And then there -- there's reference to an 10 application data bulletin number P-115. What does that 11 reference refer to? 12 A. That's the -- that's the number assigned to 13 this particular bulletin. 14 Q. All right. And I -- I included this exhibit 15 in here because I wanted to ask you some questions 16 about the physical properties of PCBs, and that's -- 17 that information would be contained in -- in this 18 particular exhibit, correct? 19 A. Yes. 20 Q. All right. Let's just -- let's just go to 21 page 7. 22 MR. MILLER: Just -- just for the record, 23 this is dated June 1945. 24 MR. Oaas: All right. 25 A. Yeah.
Page 182 1 present. Do you recall if you did anything about that 2 particular possibility as the Manager for Environmental 3 Control for Monsanto? 4 A. I don't recall any specific activity. 5 Q. All right. 6 A. That doesn't mean it didn't take place. 7 Q. I understand that. Let's go on to Exhibit 8 39. 9 A. I have scanned the exhibit. 10 Q. All right. Mr. Papageorge, at any time 11 between 1970, when you first became the Manager of 12 Environmental Control, until the end of your tenure as 13 Director of Environmental Operations for Monsanto which 14 I believe ended in 1985, did you ever become aware that 15 PCBs were be -- being detected in mother's milk? 16 A. Yes, I was aware of that. 17 Q. All right. Have you ever seen Exhibit 39 18 before? 19 A. It looks familiar, but it's typical of the 20 kinds of information that would come to my attention. 21 Q. Okay. Can you -- can you just tell me in 22 general terms what you knew about the existence of PCBs 23 in mother's milk during that same time frame between 24 1970 and 1985? 25 A. All I knew is that it was being detected.	Page 184 1 Q. (By Mr. Oaas) So this one would have been 2 published on or after that date, June 1945? 3 A. Correct. 4 Q. All right. Okay. And let's go to page -- 5 if you turn to page 7. 6 MR. MILLER: Numbered page 7? 7 MR. Oaas: Num -- yeah, page 7. 8 MR. MILLER: Thanks. 9 A. Page 7, you say? 10 Q. (By Mr. Oaas) Correct. And do you see the 11 heading there stability on the right-hand side of that 12 page? 13 A. Correct. 14 Q. Okay. Those -- those are the properties 15 that I'm -- I want to talk about under that heading, 16 and the first sub-heading indicates that the PC -- PCBs 17 are stable toward alkalies, correct? 18 A. Correct. 19 Q. And so -- and that paragraph goes on to say 20 the Aroclors are remarkably resistant to the action of 21 either hydrol -- hydrolyzing agents or high 22 temperature. They are not affected by boiling with 23 sodium hydroxide solution. Did I read that correctly? 24 A. That is correct. 25 Q. Okay. And Monsanto marketed PCBs and -- and

Page 185 1 promoted the marketing of PCBs because of their 2 stability as referenced in that paragraph, correct -- 3 MR. MILLER: Object to the form. 4 Q. (By Mr. Oaas) -- among other reasons? 5 A. Yeah, that's one of the reasons -- 6 Q. Sure. 7 A. -- they -- 8 Q. Yeah. 9 A. -- marketed the material. 10 Q. Okay. So the PCBs that were being detected 11 in mother's milk as evidenced by the previous exhibit, 12 39, would be the same PCBs that would not be affected 13 by boiling with sodium hydroxide solution, correct? 14 MR. MILLER: Object to the form. 15 A. That is correct, yeah. 16 Q. (By Mr. Oaas) Okay. And then the -- the 17 next sub-heading is -- indicates -- talks about their 18 stability towards acids? 19 A. I see that. 20 Q. Okay. If you just read through that 21 paragraph, sir. 22 A. I have read the paragraph. 23 Q. Okay. And correct me if I'm wrong, but 24 doesn't that indicate that Aroclor 1254 is basically 25 unaffected after being treated with sulfuric acid for	Page 187 1 whether the type of PCB is mentioned here. 2 Q. All right. 3 A. I don't recall any reference to the specific 4 type. 5 Q. All right. But assuming that Aroclor 1254 6 was being found in mother's milk, then we're talking 7 about the same type of PCB, correct? 8 A. If you assume that, yeah. 9 Q. All right. 10 A. The 1254 -- 11 Q. Okay. 12 A. -- applies. 13 Q. I'm not -- I'm not a chemist and I don't 14 have a degree in chemical engineering, but what would 15 happen to my finger if I soaked it in a concentrated 16 sulfuric acid bath for 255 hours? 17 A. You would damage that finger quite a bit. 18 It's like putting your finger in your car battery 19 acid. 20 Q. All right. 21 A. It's the same acid. 22 Q. Okay. And then let's go on to page 8. The 23 next sub-heading is toward heat? 24 A. I'm sorry? 25 Q. Do you see that on page 8? Let's go to page
Page 186 1 the length of time described in that paragraph? 2 A. And the concentration. 3 Q. At the concentration. 4 A. 10 percent -- 5 Q. Right 6 A. -- sulfuric acid, yes. 7 Q. Okay. And then going four lines up from the 8 bottom of that paragraph, doesn't it read even 9 prolonged treatment, 255 hours, with concentrated 10 sulfuric acid indicated only a slight trace, 11 parentheses, too small for quantity of measurement of 12 hydrogen chlorate in the acid layer? 13 A. It does say that, yes. 14 Q. And that would mean even at concentrated 15 levels, treatment of PCBs by sulfuric acid basically 16 didn't affect the PCBs, correct? 17 A. Correct. 18 Q. Okay. And that would be the same PCBs that 19 were being found in the -- in the mother's milk in the 20 previous exhibit, correct? 21 MR. MILLER: Object to the form. 22 A. Well, previous exhibit -- I don't know if 23 it -- 24 Q. (By Mr. Oaas) Exhibit 39. 25 A. I understand that. I'm looking to see	Page 188 1 8 of Exhibit 40. 2 A. Page 8. 3 Q. Exhibit 40. The next sub-heading under -- 4 A. Oh, toward heat? 5 Q. Yeah, toward heat. 6 A. Okay. 7 Q. That indicates that Aroclors are 8 non-flammable up to 670 degrees Fahrenheit? 9 A. That's true. 10 Q. Okay. And then the next sub-heading is 11 toward oxidation. Do you see that? 12 A. Yes. 13 Q. And that paragraph reads when Aroclor is 14 subjected to a bomb test at 140 degrees Centigrade with 15 250 pounds per square inch of oxygen, there is no 16 evidence of oxidation as judged by development of 17 acidity of formation of sludge. Did I read that 18 correctly? 19 A. Yes. 20 Q. What does that mean to a laymen? 21 A. It's not flammable. 22 Q. All right. Isn't it true that PCBs -- 23 essentially one of the -- the characteristics of a PCB 24 was that it was indestructible? 25 MR. MILLER: Let -- let me object to the

Page 189 1 form. Are you talking about what was known and 2 knowable in 1945 when this publication was issued 3 or after -- 4 MR. OAAS: I'm talking about whatever 5 Mr. Papageorge knows about PCBs. 6 A. Well, when you use the expression was not 7 destructible -- 8 Q. (By Mr. Oaas) Indestructible? 9 A. Was not indestructible? 10 Q. The question was, isn't it true that PCBs 11 were virtually indestructible? 12 A. If -- if virtually means for all practical 13 purposes, the answer is yes. 14 Q. All right. 15 MR. OAAS: Is that a good place to stop? 16 THE VIDEOGRAPHER: We're off the record at 17 10:00 a.m. ending tape no. 1. 18 (A short break was taken.) 19 THE VIDEOGRAPHER: We are back on the record 20 at 10:18 a.m. with -- starting tape no. 2. 21 Q. (By Mr. Oaas) Mr. Papageorge, we just 22 completed about an hour of testimony. Are you ready to 23 continue? 24 A. Yes. 25 MR. OAAS: And just for the record, that	Page 191 1 hand corner which would -- would -- which would be page 2 117 of the deposition, I want to direct your attention 3 down to line 14 where there was a question propounded 4 to you that begins with okay, by January 1971. Are 5 you -- are you following me now? 6 A. Yes. 7 Q. Okay. If I read that correctly, it says 8 okay, by January of -- by January 1971, you had 9 concluded that high levels of PCBs would continue to 10 exist in the plant waste streams because of the PCBs 11 trapped in the soil and the -- and the sewer system, 12 correct? 13 And your answer was that is correct. 14 Next question. Okay. What did you mean 15 when you said that high levels will continue because of 16 the PCBs trapped in the soil, and if you go ahead and 17 read your answer to that question, Mr. Papageorge. If 18 you would read that out loud for the record, please? 19 A. What I had in mind was the fact that PCBs 20 tenaciously hang on to soil particles like little 21 magnets, and since they aren't destructible in the 22 environment, they will be there forever such that at -- 23 such that any time a water flow occurs in this soil, 24 the chances of that soil with its PCB being transported 25 will remain. And later, if a sample of that
Page 190 1 break took about 20 minutes, Adam, and I don't want to 2 raise a big fuss about it, but -- 3 MR. MILLER: I'm sorry about that. I was 4 that -- 5 MR. OAAS: -- I'm going to ask that we can -- 6 if it's okay with Mr. Papageorge, if we can limit the 7 next few breaks to about five minutes so we -- I still 8 have quite a bit of material to get through. 9 MR. MILLER: No, I -- I apologize. I was 10 talking with a colleague about The Daily Show, and 11 that -- that's the source of my news, so -- 12 MR. OAAS: All right. 13 Q. (By Mr. Oaas) Okay. If we can go to 14 Exhibit 41. 15 A. I have scanned the exhibit. 16 Q. Okay. And sir, apparently you gave a 17 deposition in a case in Alabama entitled Mars Hill 18 Missionary Baptist Church versus Monsanto Company. Do 19 you recall giving a deposition in that case on or about 20 March 31, 1998? 21 A. Yes. 22 Q. Okay. And I -- I just want to direct your 23 attention to the second page of this exhibit. 24 A. The second page. 25 Q. And I -- in the first box up on the left-	Page 192 1 contaminated water is taken, sure enough PCBs will be 2 found in it. 3 Q. Okay. And if I asked you that same question 4 today in 2006 rather than in 1998, would you give the 5 same answer? 6 A. Yes. 7 Q. All right. Let's go on to Exhibit 42, 8 please. Would you take a minute and look at that 9 exhibit, please? 10 A. I have read the exhibit. 11 Q. All right. This exhibit appears to be at 12 least part of a letter that you prepared and sent to a 13 gentleman by the name of H.S. Bergen, B-e-r-g-e-n, in 14 July of 1970, correct? 15 A. Yes. 16 Q. And there's a reference to a Monsanto-USA 17 studies, something called river die-away studies. Do 18 you see that on the front page? 19 A. I do. 20 Q. What -- what were those? 21 A. They were studies made of samples looking 22 for the presence of some of Monsanto's Aroclor 23 products. 24 Q. And where were you looking? 25 A. Why were --

Page 193 1 Q. Where? 2 A. I forget the -- the exact rivers. It's 3 nearby river streams near the plant. 4 Q. Near -- near the Anniston plant? 5 A. Correct. 6 Q. All right. Am I correct in assuming that 7 the purpose of this study would be able to see if any 8 of the Aroclors biodegraded in water? 9 A. Yes. 10 Q. Okay. And the conclusion was, at least 11 according to the co -- conclusion that you reported 12 here, was that Aroclor 1221 disappears, but Aroclor 13 1242, 1248 and 1254 were un-degraded. Do you see where 14 I was reading that? 15 A. Oh, the first sentence? 16 Q. First -- 17 A. Uh-huh. That's true. 18 Q. Okay. 19 A. You read it right. 20 Q. Okay. Were those findings ever contradicted 21 by later studies, that you know of? 22 MR. MILLER: If you remember. 23 A. I don't recall any contradicting studies. 24 Q. (By Mr. Oaas) Okay. Let's go on to Exhibit 25 43.	Page 195 1 your attention to the first page of this exhibit. The 2 first sentence reads from the background data 3 presented, it appears that something of the order of 80 4 million pounds of polychlorinated biphenyls, PCB, are 5 produced annually. Do you see that? 6 A. I do. 7 Q. Would you agree or disagree with that 8 statement? 9 A. I hesitate because I don't know if he's 10 referring to the -- the world production or the U.S. 11 production. 12 Q. Okay. All right. Let's go down to about 13 the middle of the exhibit on the first page. There's a 14 sentence that begins however, about 40 million pounds. 15 If you could just find that -- that sentence. 16 A. I found it. 17 Q. It reads however, about 40 million pounds 18 annually is stated to be used as plasticisers, 19 hydraulic fluid, adhesives, and in carbon paper. From 20 this amount a very substantial percentage must escape 21 into the environment as wastes. Because of the 22 apparent high stability of PCB, amounts entering the 23 environment would be degraded very slowly and it seems 24 possible that at least 10 million pounds annually may 25 become environmental contaminants. Would you agree or
Page 194 1 MR. MILLER: Torger, before you ask a 2 question, is this complete? 3 MR. OAAS: As far as I know. As far as I 4 know. 5 A. I have read the exhibit. 6 Q. (By Mr. Oaas) Okay. Have you ever seen 7 Exhibit 43 before? 8 A. It appears familiar -- 9 Q. All right. 10 A. -- yes. 11 Q. It indicates that it's a report and comment 12 by a gentleman by the name of Robert Metcalf of 13 Industrial Biotest Labs dated March 21, 1969, correct? 14 A. I'm trying to remember where Bob Metcalf -- 15 I guess he -- I have to believe he was with Industrial 16 Biotest, yes. 17 Q. Okay. Did you attend the presen -- this 18 particular presentation? 19 A. In 1969, no. 20 Q. Okay. Was this -- to your knowledge, was 21 this presentation made to other employees of Monsanto? 22 MR. MILLER: Object to the form, calls for 23 speculation since he wasn't present. 24 A. I don't know. 25 Q. (By Mr. Oaas) All right. I want to direct	Page 196 1 disagree with that statement? 2 A. Well, the only hesitation I have is that -- 3 the reference to 10 million pounds is this speaker's 4 estimate. I have no way of knowing how accurate that 5 is. 6 Q. Okay. Let's go down to the last sentence on 7 the first page. It reads because of the apparent 8 stability of these compounds, most of this amount may 9 still be circulating in the global ecosystem, and this 10 is suggested by the levels reported by Holmes, et al., 11 paren, 1967, close paren, and Risebrough, et al., 12 paren, 1968, in animal tissues which were quite 13 comparable to those found for DDT. Would you agree or 14 disagree with that statement? 15 A. Well, the -- the use of words may still be 16 and suggested by the statement -- I can support it, but 17 it's iffy. 18 Q. All right. Let's go to the second page of 19 the exhibit -- 20 A. Uh-huh. 21 Q. -- and direct your attention to the bottom 22 ex -- bottom of the second page under the heading 23 conclusions and suggestions. 24 A. I see it. 25 Q. It reads it seems to the writer that the

Page 197 1 evidence regarding PCB effects on environmental quality 2 is efficiently substantial, widespread, and alarming to 3 require immediate corrective action on the part of 4 Monsanto. Did I read that correctly? 5 A. You did. 6 Q. Okay. Would you agree or disagree with that 7 statement? 8 A. I agree with the sufficiently substantial, 9 yes. 10 Q. All right. And that statement was made 11 in -- in March of 1969. If we go to the next exhibit, 12 Exhibit 44, which for the record is a duplicate of 13 Exhibit 3, I believe. Exhibit 44 would indicate 14 that -- that in 1969, if these figures are accurate, 15 that Monsanto produced for domestic sales 67 -- a 16 little more than 67 million pounds of PCBs, correct? 17 A. That's what this indicates, yes. 18 Q. And in 1970, the year following 19 Mr. Metcalf's report, Monsanto produced 73 -- over 73 20 million pounds of PCBs for domestic -- in the domestic 21 sales category, correct? 22 A. Correct. 23 Q. And at least in the time frame between 1963 24 and 1970, the years 1969 and 1970 appear to be the 25 highest -- years that represent the highest volume of	Page 199 1 A. Well, I can't speak for the author of this 2 report, but -- 3 Q. All right. Okay. Let's go to page -- it's 4 actually the fourth page from the front, but it's 5 marked -- it has the number 2 at the top, and it's MONS 6 number at the bottom 036717. 7 A. I have it. 8 Q. Okay. The second paragraph reads during the 9 summer, we have received reports of PCBs in milk in 10 Georgia and Maryland in fish and water of Lake Michigan 11 and fish and oysters in the Gulf of Mexico. Did I read 12 that correctly? 13 A. Yes. 14 Q. And would -- would that sentence be typical 15 of the kind of reports that Monsanto was receiving 16 about the presence of PCBs in the environment during 17 the years 1969 and 1970? 18 A. Yes. 19 Q. And then it goes -- and then -- then 20 directing your attention to the next to last paragraph 21 of the same page. It reads other sources of 22 contamination, parentheses, in milk, etc., close paren, 23 have not been pinpointed, but it appears likely that 24 some of our customers' products will be responsible. 25 For example, our research effort, stimulated by a
Page 198 1 domestic sales for PCBs during that time frame, 2 correct? 3 A. Correct. 4 Q. All right. Let's go on to Exhibit 45. 5 A. I have scanned the article. 6 Q. All right. Before we get to it, 7 Mr. Papageorge, I wanted to as -- to ask you if you 8 knew what the cost of a pound of Aroclor 1254 average 9 grade was to a Monsanto customer in 1969 and 1970? 10 A. I do not. 11 Q. In reference to Exhibit 45, this appears to 12 be a quarterly report by the Medical Department of 13 Monsanto? 14 A. It is. 15 Q. For the months July, August, September of 16 '69? 17 A. Yes. 18 Q. The front page indicates it contains 19 confidential information? 20 A. It does. 21 Q. And then the last sentence on the front page 22 says please destroy this report when you are finished 23 with it? 24 A. It does. 25 Q. Do you know why that would be there?	Page 200 1 report that a dish washing compound was found to 2 contain PCBs by a federal government laboratory in 3 Michigan, revealed that four out of five electric dish 4 washing compounds purchased in a supermarket in 5 St. Louis contained up to five parts per billion of 6 Aroclor. Did I read that correctly? 7 A. Yes, you did. 8 Q. Okay. Would it -- would tho -- would -- the 9 reference to a dish washing compound, would that be 10 considered a household product -- 11 MR. MILLER: Object to the form. It calls 12 for speculation as to -- 13 Q. (By Mr. Oaas) -- if you know? 14 MR. MILLER: -- who was using it. 15 A. I don't know if it's limited to household or 16 total. 17 Q. (By Mr. Oaas) All right. We can go to the 18 next page. Directing your attention to the paragraph 19 above pollution control, starting with the words the 20 Organic Division. Do you see that? 21 A. I see that. 22 Q. It reads the Organic Division -- and again, 23 that's the division that produced PCBs? 24 A. Correct. 25 Q. Okay -- which produces this series of very

Page 201 1 profitable products -- would you agree that PCBs were 2 very profitable products in 1969-1970? 3 A. Yes. 4 Q. Okay. The Organic Division which produces 5 this series of very profitable products has a concerted 6 effort underway to protect continued sales and uses. 7 Did I read that correctly? 8 A. Yes. 9 Q. All right. Let's go on to the next exhibit, 10 46? 11 A. I have scanned the exhibit. 12 Q. Thank you. It references the -- on the 13 first page minutes of the Aroclor, quote, Ad Hoc 14 Committee First Meeting. Do you see that, sir? 15 A. I do. 16 Q. I believe you were still the Plant Manager 17 in Anniston in September of 1969, but would it -- would 18 it be accurate to say that you became familiar with the 19 work of the Aroclor Ad Hoc Committee after you became 20 the Manager of Environmental Control for Monsanto in 21 1970? 22 A. I was aware of the existence when I was 23 Plant Manager -- 24 Q. I understand that. 25 A. -- but I didn't know all of the details of	Page 203 1 read that correctly? 2 A. Correct. Yes. 3 Q. And 3, protect the image -- protect image of 4 Organic Division and of the corporation. Did I read 5 that correctly? 6 A. Yes. 7 Q. I -- I didn't see anywhere under this 8 heading or anywhere in this document where any of 9 the -- where any of the objectives of the Ad Hoc 10 Committee at that time were protection of the 11 environment? 12 A. It is not specifically stated, no. 13 Q. All right. Then down under the same page, 14 background discussion of problem on the -- on the first 15 page of that exhibit under paragraph no. 2; again, you 16 receive -- again, the committee is indicating that 17 Monsanto has received reports of PCBs being found in 18 fish, oysters, shrimp, and birds, correct? 19 A. That's correct. 20 Q. And then -- and then in B, they state it's 21 being found along coastlines of industrial -- 22 industrialized areas such as Great Britain, Sweden, 23 Rhine River, low countries, Lake Michigan, Pensacola 24 Bay, in western wildlife, parentheses, eagles, close 25 parentheses. It may be a global contaminant. Do you
Page 202 1 what they were discussing. 2 Q. Okay. Would it be true to say that after 3 you became Manager of Environmental Control, you became 4 more familiar with the work of the Aroclor Ad Hoc 5 Committee? 6 A. Yes. 7 Q. Okay. Can you tell me what -- what the 8 Aroclor Ad Hoc Committee was and what its purpose was? 9 A. As I understood it, this group was asked to 10 form this Ad Hoc Committee to help the management 11 within Monsanto understand the total situation as best 12 as they could describe it to determine what actions 13 should be taken and how quickly such action should be 14 taken. 15 Q. Okay. On Exhibit 46, on the first page 16 there's a heading objectives. Do you see that? 17 A. I do. 18 Q. And in parentheses, agreed to by the 19 committee. It goes on to say submit recommendations 20 for action which will, 1, permit continued sales and 21 profits of Aroclors and Terphenyls. Did I read that 22 correctly? 23 A. Yes. 24 Q. No. 2, under the objective heading -- 2, 25 permit continued development of uses and sales. Did I	Page 204 1 see that? 2 A. Yes, I do. 3 Q. Would you agree with that statement that by 4 September of 1969, Monsanto was beginning to realize 5 that the PCB problem was a global situation? 6 A. Yes. 7 Q. And then if you go to page 3 of that 8 exhibit -- and by the way, I think it's self-evident, 9 but I'm going to ask the question. At the time that 10 statement was made, it may be a global contaminant, 11 being made in September of 1969 -- in September of 12 1969, Monsanto was still producing and selling PCBs at 13 full capacity, correct? 14 A. Yes. 15 Q. All right. Go to page 3. Under Roman 16 numeral 8, heading environmental contamination by 17 customers. Do you see that paragraph down the second 18 half of the -- 19 A. Roman numeral? 20 MR. MILLER: No, it's -- 21 Q. (By Mr. Oaas) Excuse me. I mean no. 8, 22 paragraph no. 8. I misspoke, and I apologize. Do you 23 see the heading environmental contamination by 24 customers? 25 A. I see it.

Page 205 1 Q. Okay. It goes on to say our in-plant 2 problems are very small versus problems of dealing with 3 environmental contamination by customers. Would you 4 agree with that statement? 5 A. Yes. 6 Q. Okay. It goes on to say in one application 7 alone, parentheses, highway paints, close parentheses, 8 one million pounds per year are used. Through abrasion 9 and leaching, we can assume that nearly all of this 10 Aroclor winds up in the environment. Would you agree 11 with that statement? 12 A. Yes. 13 Q. And I take it again that in 19 -- September 14 of 1969, Monsanto was producing and selling Aroclors 15 for use in highway marking paints? 16 A. Yes. 17 Q. Let's go on to Exhibit 47. 18 A. I have scanned the exhibit. 19 Q. Thank you, Mr. Papageorge. It's entitled 20 PCB environmental pollution abatement plan, and I -- I 21 really couldn't find a specific date concerning the 22 origin of this document, but I -- I'm going to ask you 23 if you know whether or not this document would have -- 24 would have been produced in the years 1969 or 1970? 25 MR. MILLER: Object to the form, calls for	Page 207 1 Q. Okay. And at the time they were still 2 producing PCBs at -- at maximum capacity, correct? 3 A. Correct. 4 Q. And then under Roman num -- Roman numeral 5 IV, just under that, the heading nature of the problem, 6 there's a reference to Professors Widmark and Jensen, 7 correct? 8 A. Correct. 9 Q. And I just want to direct your attention to 10 the last paraphrase on the last part of -- the last 11 part of the sentence under that heading where it says 12 truly the PCBs are a worldwide ecological problem. Do 13 you see that? 14 MR. MILLER: Let me object to the form. 15 That -- that's not the complete sentence. 16 MR. OAAS: Well, I'll read the whole 17 sentence. 18 MR. MILLER: Thank you. 19 Q. (By Mr. Oaas) In February 1969, Professor 20 Risebrough of the University of California published an 21 article in the San Francisco Chronicle relaying his 22 findings of PCB in the environment of the United 23 States. Monsanto confirmed the presence of PCBs in mid 24 1969 and confirmed the adequacy of the work by Widmark 25 and Jensen and others; truly the PCBs are a worldwide
Page 206 1 speculation, but if -- if you know when it was 2 produced, Mr. Papageorge, you can respond. 3 A. 6 -- 1969. 4 Q. (By Mr. Oaas) 1969? 5 A. Yes. 6 Q. All right. 7 A. October 15th. 8 Q. All right. Let's go to page 3 of the 9 exhibit. Now, there's a Roman numeral III paragraph 10 titled Extensiveness, correct -- 11 A. I see that, yes. 12 Q. -- about the middle of the page. This 13 report indicates the problem involves the entire United 14 States, Canada, and sections of Europe, especially the 15 United Kingdom and Sweden. As the investigation 16 broadens, other areas of Europe, Asia, and Latin 17 America will surely become involved. Evidence of 18 contamination have been shown in some of the -- in some 19 of the very remote parts of the world. Did -- did I 20 read that correctly? 21 A. Yes. 22 Q. Would you agree with that statement? 23 A. Yes. 24 Q. Monsanto had that information in 1969? 25 A. Yes.	Page 208 1 ecological problem. Did I read that correctly? 2 A. Yes. 3 Q. Would you agree with the statement that 4 truly, comma, PCBs are a worldwide ecological problem? 5 A. Yes. 6 Q. That's something that Monsanto recognized in 7 1969? 8 A. The Ad Hoc Committee recognized it, but I 9 cannot speak for Monsanto as a total entity. I don't 10 know -- 11 Q. All right. 12 A. -- how far they communicated yet. 13 Q. All right. Fair enough. Let's go on to 14 page 4. 15 A. I have it. 16 Q. I'm going to start with the -- the sentence 17 just above paragraph 1, fish. The seriousness of the 18 problem can best be spelled out as following, paragraph 19 1, fish. Marine or aquatic species concentrate PCB in 20 the fatty tissue. Toxic in small quantities, 21 parentheses, down to five parts per million to 22 sensitive marine life such as shrimp. Did I read that 23 correctly? 24 A. Yes. 25 Q. And I notice that fish is the first -- the

Page 209 1 first species mentioned under the -- following the 2 sentence the seriousness of the problem can best be 3 spelled out as follow, correct? 4 A. Yes. 5 Q. By this time, did Monsanto understand the 6 concept of bio -- biomagnification or bioaccumulation 7 with PCBs in fish? 8 MR. MILLER: Are you talking about in 9 October 1969? 10 MR. OAAS: Right. 11 A. You're talking about the general term 12 biomagnification or PCB biomagnification? 13 Q. (By Mr. Oaas) I'm talking about the term 14 biomagnification or bioaccumulation of PCBs in fish. 15 MR. MILLER: And Mr. Papageorge is here in 16 his individual capacity. You're asking him what 17 Monsanto knew or understood? 18 MR. OAAS: Right. 19 MR. MILLER: So just what you knew or 20 understood, Mr. Papageorge, is what the question 21 relates to. 22 A. What did I know in '69? 23 Q. (By Mr. Oaas) Uh-huh. 24 A. I was aware of discussions on the subject -- 25 Q. Okay.	Page 211 1 labels carry this information. Would that be a correct 2 statement at that time? 3 A. At that time, yes. 4 Q. Then down to paragraph B, pub -- public 5 image. I want to go to the second -- first sentence in 6 the second paragraph. It reads the evidence proving 7 the persistence of these compounds in their universal 8 presence as residues in the environment is beyond 9 questioning. Do you see -- do you see that sentence? 10 A. I do. 11 Q. And would you agree that at least the Ad Hoc 12 Committee of that part of Monsanto believed that to be 13 true? 14 A. Yes. 15 Q. Okay. And that would be -- again, been in 16 October of 1969? 17 A. Correct. 18 Q. Okay. And at a time, again, when Monsanto 19 was in full production capacity with respect to PCBs, 20 correct? 21 A. Correct. 22 Q. Let's go to the next page, 6. I want to 23 draw your attention to Roman numeral no. VII, the 24 heading involvement with other producers. Do you see 25 where I'm reading from, sir?
Page 210 1 A. -- but I have no -- I had no idea at all how 2 accurate they were or how significant they were. 3 Q. What -- what are we talking about when we 4 refer to -- we refer to biomagnification of PCBs in 5 fish? Can you just describe what that means? 6 A. Biomagnification? 7 Q. Sure. 8 A. To me, the word biomagnification means that 9 biologically in this creature, the amount of this 10 material continues to increase as long as that creature 11 is exposed to that particular environment. 12 Q. All right. Okay. Thank you. Let's go to 13 page 5 of this exhibit. I want to draw your attention 14 to paragraph A entitled Legal Liability. Do you see 15 that? 16 A. I see it, yes. 17 Q. It reads direct lawsuits are possible. The 18 material -- the materials are already present in nature 19 having done their, quote, alleged damage, end quote. 20 All customers using these products have not been 21 officially notified about known effects nor do our 22 labels carry this information. Would that -- and -- 23 and just referring to that sentence -- and I'll read it 24 again. All customers using these products have not 25 been officially notified about known effects nor do our	Page 212 1 A. Yes. 2 Q. It says although Monsanto is most probably 3 responsible for the U.S. contamination and jointly 4 responsible with MCL -- and I take it MCL means 5 Monsanto in Great Britain, correct? 6 A. Correct. 7 Q. -- for the United Kingdom problem, we cannot 8 accept responsibility for the world. Did I read that 9 correctly? 10 A. Yes. 11 Q. Okay. To your knowledge, at any time when 12 you were the Manager of Environmental Control up to the 13 period of time that your position as Director of 14 Environmental Operations ended in 1985 -- to your 15 knowledge, did Monsanto ever re -- accept any 16 responsibility for any U.S. contamination by PCBs? 17 MR. MILLER: Hold on. 18 Let me object to the form of the question. 19 When you use the word responsibility, that may call for 20 a legal conclusion, and aside from that, I think this 21 paragraph merely refers to Monsanto being a number 22 of -- one of a number of producers; and therefore, what 23 this is referring to is the attribution to Monsanto of 24 PCBs in the environment, not in terms of responsibility 25 as you're using the term.

Page 213 1 Q. (By Mr. Oaas) Did you understand my 2 question, Mr. Papageorge? 3 A. Would you mind repeating it? 4 Q. No, I don't mind a bit. This paragraph 7 5 reads although Monsanto is most probably responsible -- 6 MR. OAAS: And I'll stipulate you can have 7 the same objection after I finish the question. 8 Q. (By Mr. Oaas) Although Monsanto is most 9 probably responsible for the U.S. contamination and 10 jointly responsible with MCL for the United Kingdom 11 problem, we cannot accept responsibility for the 12 world. Did I read that correctly? That's my first 13 question. 14 A. You did. 15 Q. Okay. Then I want to know at any point in 16 time between 1970, when you became the Manager of 17 Environmental Control for Monsanto, through 1985, when 18 your -- when your tenure as Director of Environmental 19 Operations ceased, did Monsanto ever accept 20 responsibility for any U.S. contamination by PCBs? 21 MR. MILLER: Same objection. Object -- 22 object to the form. 23 A. Did Monsanto accept any responsibility? 24 Q. (By Mr. Oaas) Right? 25 A. Yes. Some of it, yeah.	Page 215 1 different types of action, the do nothing, the 2 discontinue, and responsible approach, and this 3 individual presented his views by drawing these 4 handmade sketches of lines to show increase and 5 decrease. 6 Q. Do you know who that individual was? 7 A. I understand it was Bill Richards. 8 Q. Okay. And it appears to me that he was 9 comparing what would happen to profits and liability 10 over time depending on which course of action was 11 chosen by Monsanto with respect to PCBs? 12 A. Correct. 13 Q. All right. And do you know what position 14 Mr. Richards held with Monsanto at the time? 15 A. He was the Director of Research for the 16 Functional Fluids Group. 17 Q. Okay. Let's go to Exhibit 48. 18 A. I have read this -- 19 Q. Okay. 20 A. -- exhibit. 21 Q. Have you ever seen Exhibit 48 before? 22 A. I don't recall this specific one, no. 23 Q. Okay. Let's go on to Exhibit 49. 24 MR. OAAS: And just for the record, I'll 25 advise counsel that as far as this exhibit goes, my
Page 214 1 Q. In what respect? 2 MR. MILLER: Same objections. Calls for a 3 legal conclusion, and the term responsibility is 4 undefined. It may call for a legal conclusion. 5 A. The identity chemically of the material 6 resembling what Monsanto produced, its source may or 7 may not have been Monsanto. 8 Q. (By Mr. Oaas) Okay. I didn't mean to 9 interrupt you. Did you finish your answer? 10 A. Yeah. 11 Q. All right. Could you turn to page -- it 12 doesn't have a number, but it -- I'm referring to this 13 number here, Mr. Papageorge, MONS035390. I'm just 14 going to show you what it looks like. 15 MR. MILLER: Yeah, I think he's there. 16 A. Yeah. 17 Q. (By Mr. Oaas) Have you ever -- go ahead and 18 take a look at this page for yourself. 19 A. I have looked it over. 20 Q. Have you ever seen this before? 21 A. Yes, I have. 22 Q. Do you know what it is? 23 A. My understanding, this was drawn up by one 24 of the members of the Ad Hoc Committee as to his 25 impression of what would happen under these three	Page 216 1 questions relate to the first five pages of the exhibit 2 and the last page of the exhibit. 3 Q. (By Mr. Oaas) You can certainly take as 4 much time to review the exhibit if you want, 5 Mr. Papageorge, but for the record I'll be referring to 6 the first five pages and the summary at the end. 7 A. You suggested that you're going to discuss 8 the first five pages? 9 Q. Yeah. My questions pertain just to the 10 first five pages and the -- and the summary at the 11 end. 12 A. And the summary. I have read the first five 13 pages and the -- and the summary -- 14 Q. Thank you. 15 A. -- and scanned the rest of it. 16 Q. All right. And if -- if you feel you need 17 to refer to any part of the exhibit to -- to answer a 18 question, you go right ahead and do it. All right? 19 A. Thank you. 20 Q. The first page indicates that this is a -- a 21 Monsanto document entitled Company Confidential 22 Attorney/Client Privilege. That's at the top of the 23 document, correct?? 24 A. Yeah -- yes, it does. 25 Q. And the date appears to be Oct -- the date

Page 217 1 of the creation of this document was October 15, 1969? 2 A. Yes. 3 Q. And again, we're referring to the Aroclor, 4 quote, Ad Hoc, end quote, Committee, correct? 5 A. Correct. 6 Q. All right. Now, if you go to the first page 7 of the exhibit, which is really the third page. I'm 8 just referring to the no. 1 at the bottom. That's the 9 page I'm -- I'm going to, and I'll call it the first 10 page. Do you see it there? 11 A. I have it. 12 Q. Okay. And just directing your attention to 13 the bottom of page 1 of this exhibit. It reads in the 14 last six months, PCBs have been reported in, A, milk in 15 Georgia; B, waters of Lake Michigan; C, fish in 16 Connecticut; D, seafood along the Gulf Coast, 17 parentheses, toxic-fatal to shrimp at Pensacola, close 18 parentheses. Again, those -- my same question. Those 19 would be the type of reports that Mon -- Monsanto was 20 continuing to receive in the 1969-1970 time frame? 21 A. Yes. 22 Q. And then going on to the next page, page 2, 23 under the heading 1, evidence of problem, continued. 24 It says -- reports that PCBs are being found in 25 electric dish washing compounds, milk in Maryland, Bald	Page 219 1 A. I have it. 2 Q. And it appears to contain a summary of 3 toxicity considerations that are being reported by the 4 Ad Hoc Committee? 5 A. Yes. 6 Q. Okay. Under sub-A, it says the PCBs are, 7 quote, moderately, end quote, toxic to man. Would you 8 agree with that statement? 9 MR. MILLER: Object to the form. Lack of 10 foundation. 11 A. The word moderately in quotes is subject to 12 all sorts of definitions, so I don't know if I -- if I 13 can agree to it or not unless I see a more specific 14 wording. 15 Q. (By Mr. Oaas) Okay. Let's go to sub-B. 16 That reads although only, quote, moderately, end quote, 17 or, quote, slightly, end quote, toxic to adult birds 18 and fish on the basis of acute exposure, the, quote, 19 safe long-term, end quote, or, quote, chronic dose, end 20 quote, is less than 100 parts per million insofar as 21 reproduction is concerned. Do you agree with that 22 statement? 23 MR. MILLER: Object to the form, lack of 24 foundation. He's got no expertise. 25 A. There again --
Page 218 1 Eagles from the Midwest, and H, mother's milk, 2 parentheses, rumor-not confirmed, in Denver. Do you 3 see that? 4 A. I do. 5 Q. Again, those would be the kind of reports 6 that Monsanto was continuing to receive during that 7 same time frame, 1969-1970? 8 A. Yes. 9 Q. Okay. And then under the -- the -- no. 1, 10 after the next heading, which reads after 11 investigation, dash, not complete in all cases, dash, 12 the committee has concluded -- and no. 1 there reads 13 that the identification of PCBs as contaminants of the 14 environment is certain. Did I read that correctly? 15 A. Correct. 16 Q. Okay. And would you have agreed with that 17 statement at that time? 18 MR. MILLER: I'm -- I'm sorry. Can you 19 repeat the question? 20 MR. OAAS: Yeah 21 Q. (By Mr. Oaas) Would you -- do you agree 22 with that statement? 23 A. Yes. 24 Q. Okay. Let's go on to the -- page 5 under 25 the heading tox -- tox -- toxicological aspects.	Page 220 1 Q. (By Mr. Oaas) Let me -- let me rephrase 2 that question. As -- as the Manager of Environmental 3 Control for Monsanto between 1973 and 1977, would you 4 agree with that statement? 5 MR. MILLER: Object to the form. Same -- 6 same objections. 7 A. Again, when I became involved, I had to get 8 better definitions of what was meant by moderately and 9 slightly, so the statement is a little bit too broad to 10 make a concerted opinion about the seriousness of the 11 situation. 12 Q. (By Mr. Oaas) All right. And if I asked 13 you the same question with reference to the time frame 14 that you were Director of Environmental Operations, 15 would your answer be the same? 16 MR. MILLER: Object to the form. It still 17 implies he has expertise in aquatic or human toxicology 18 to either agree or disagree with those statements as 19 opposed to them just being taken as face value as being 20 reported. 21 A. Well, I find that I'm not totally in 22 agreement with the statement. 23 Q. (By Mr. Oaas) Okay. Let's go to page 23, 24 the summary. My question, sir, is as Manager of 25 Environmental Control for Monsanto, would you agree

Page 221 1 with the four conclusions drawn there in the -- in the 2 summary on page 23 of this exhibit? 3 A. I do. 4 MR. MILLER: Object -- just show an 5 objection to the form. I know he responded before I 6 objected. 7 Q. (By Mr. Oaas) Would -- would you agree 8 that -- would you agree with those conclusions as the 9 Director of Environmental Operations for Monsanto? 10 A. Yes. 11 Q. Okay. 12 THE VIDEOGRAPHER: Take a break? 13 MR. OAAS: Yeah. 14 THE VIDEOGRAPHER: We're off the record at 15 11:14 a.m. ending tape no. 2. 16 (A short break was taken.) 17 THE VIDEOGRAPHER: We're back on the record 18 at 11:18 a.m. starting tape no. 3. 19 Q. (By Mr. Oaas) Thank you, Mr. Papageorge. 20 We've gone about halfway through our morning session. 21 Are you ready to continue? 22 A. Yes. 23 Q. All right. I think the next exhibit that we 24 want to look at was Exhibit 50. Do you have that 25 exhibit in front of you?	Page 223 1 on Polychlorinated Biphenyls in Chicago, leading 2 experts clearly documented the fact that PCBs are 3 pervasive in the environment, are causing disruption, 4 and economic -- economic harm to commercial fishing in 5 many areas, and are creating a serious potential health 6 hazard to the public. While certain voluntarily 7 measures have been initiated in the past, the 8 widespread and persistent occurrence of PCBs 9 underscores the failure of existing practices to 10 adequately control the escape of PCBs into the 11 environment. Did I read that correctly? 12 A. Yes. 13 Q. I just want to direct your attention to the 14 last sentence of that paragraph that starts with while 15 certain voluntary measures have been initiated in the 16 past. Do you see that part of that sentence, 17 Mr. Papageorge? 18 A. I do. 19 Q. Would it be -- would it be fair to say 20 that -- what -- let me ask you this question. What's 21 your understanding of what Mr. Train is referring to 22 there? 23 MR. MILLER: Object to the form. It calls 24 for speculation. 25 If you can speak on --
Page 222 1 A. Yes, I do. 2 Q. Have you had a chance to look through that 3 exhibit? 4 A. Yes. 5 Q. Have you ever seen this exhibit before? 6 A. Yes. 7 Q. It appears to me to be a letter from the 8 Director of the US EPA to the -- to a Mr. Hanley. It 9 was from -- to -- who was an employee at Monsanto at 10 the time? 11 A. Yes. 12 Q. And what was Mr. Hanley's capacity as of the 13 date of this letter, which was December 22, 1975? 14 A. He was the President of Monsanto Chemical 15 Company. 16 Q. Okay. So this is a letter from the Head of 17 the EPA to the President of Monsanto, correct? 18 A. Correct. 19 Q. Okay. And I just want to direct your 20 attention to the first paragraph of the letter. It 21 reads for at least five years the federal government 22 and the manufacturing industry have been aware that 23 Polychlorinated Biphenyls, parentheses, PCBs, close 24 parentheses, pose a threat to human health in the 25 environment. Last month at EPA's national conference	Page 224 1 A. I interpreted that as reflecting Mr. Train's 2 understanding of what Monsanto and its customers and 3 eventual users were doing. That's the voluntary 4 measures he referred to -- 5 Q. (By Mr. Oaas) All right. 6 A. -- and he's also im -- implying that the 7 widespread and persistent occurrence of PCBs 8 underscores the failure of the practices. That's his 9 impression of the situation at that time. 10 Q. Would you agree or disagree with it as the 11 Director of Environmental Operations for Monsanto? 12 A. At that time, I felt that he was overly 13 cautious. 14 Q. All right. I meant to ask you a question 15 before. I believe in -- in response to a previous 16 question you indicated that in the 1960 time frame that 17 there were a lot of other plasticisers around on the 18 market besides PCBs? 19 A. Yes. 20 Q. Okay. What did you mean by that? 21 A. Well, there are many, many chemicals that 22 serve the function of plasticising when they're used. 23 I'm familiar with some of them, not all of them. For 24 example, thallate esters is a group of chemicals. When 25 they're added to the basic plastic material, that

Page 225 1 plastic material becomes flexible. It doesn't break 2 when you try to flex it, and that's what the principle 3 contribution of a plasticiser does. It gives 4 flexibility. 5 Q. Can you give me any idea of how many non-PCB 6 plasticisers were available on the market in the 1960s? 7 MR. MILLER: Object to the form. He just 8 said he didn't know all of them, so -- 9 Q. (By Mr. Oaas) Do you have any idea? 10 A. Do I have an idea? 11 MR. MILLER: Calls for speculation. 12 A. I can give you -- 13 Q. (By Mr. Oaas) Tell me the ones that you 14 know about. 15 A. The thallates, the -- I -- I mention those 16 because I helped manufacture some of them. Golly. 17 It -- they escape me now. There must be 50 or so -- 18 Q. Okay. 19 A. -- chemicals that fit that. 20 Q. Did -- was Monsanto manufacturing and 21 producing a non-PCB plasticiser in the 1960 time frame? 22 A. Well, I'm certain of the thallate esters. 23 MR. MILLER: Are you talking about 1960? 24 MR. OAAS: 1960s. 25 MR. MILLER: That's a different question.	Page 227 1 MR. OAAS: Okay. 2 Q. (By Mr. Oaas) Have you seen Exhibit 51 3 before, Mr. Papageorge? 4 A. I recall seeing it, yes. 5 Q. Okay. Do you recall the first time that you 6 would have seen it? 7 A. Early 1970. 8 Q. All right. And that would have been in your 9 position as Manager of Environmental Control for 10 Monsanto? 11 A. Yes. 12 Q. Okay. And again, we talked about Dr. Jensen 13 yesterday, but he was significant in the PCB story 14 for -- for what reasons? Would you go ahead and -- and 15 just -- 16 A. He was significant for what reasons? 17 Q. Yeah. For what reasons? 18 A. Well, he's the individual that in his 19 laboratory work involving DDT found material that was 20 interfering with his analysis of DDT and eventually was 21 able to initially identify it as a chlorinated 22 biphenyl. 23 Q. Okay. And Exhibit 51 appears to be a letter 24 from a law firm in Sweden to -- and the address on the 25 first page is Monsanto Europe, Brussels 3, Belgium. Do
Page 226 1 Q. (By Mr. Oaas) The time frame I was 2 referring to in the last question was in the 1960s. 3 Was Monsanto producing a non-PCB plasticiser during 4 that time frame? 5 A. Yes. 6 Q. All right. Let's go to Exhibit 51. 7 A. I have reviewed the exhibit. 8 MR. OAAS: And just for the record, I want 9 to point out to counsel that this exhibit contains 10 three non-sequential MONS numbers. The first one being 11 MONS090078, MONS090521, and MONS090080. The reason 12 being that we pie -- I pieced this exhibit together, 13 and I believe it's complete and accurate from the 14 portions of exhibits that we obtained from the law firm 15 in Greensboro when we went there. One of the first 16 pages had the date blocked off on the front, and -- and 17 one exhibit only had two pages, but -- 18 MR. MILLER: That's fine. 19 MR. OAAS: -- I'm just pointing that out to 20 you. 21 MR. MILLER: And -- and you got it from 22 Dr. Madson, so -- 23 MR. OAAS: Right. 24 MR. MILLER: -- who has had it for years, so 25 I don't see a problem.	Page 228 1 you -- do you see that? 2 A. Yes. 3 MR. MILLER: Well, let me just object to the 4 characterizations to the -- the -- whether or not it's 5 a law firm. I don't -- I don't know whether that's the 6 case. 7 Q. (By Mr. Oaas) Well, it's not important 8 anyway, but do you -- it was sent to Monsanto -- it 9 appears to be sent to Monsanto Europe, Brussels 3, 10 Belgium, correct? 11 A. Correct. 12 Q. What is Monsanto Europe? 13 A. It was an entity describing Monsanto's 14 activities which included the manufacturing units in 15 Great Britain and all of the marketing activities in 16 the rest of Europe. 17 Q. Okay. Do you recall who at -- who the head 18 of Monsanto Europe was in 1966? 19 A. No, I don't. 20 Q. Okay. In reference to the exhibit -- and 21 I -- I'm just directing your attention to what appears 22 to be a reproduction of Jensen's work that appeared in 23 a Swedish newspaper, and I'm starting -- and I'll start 24 with the paragraph it is found in salmon and pike. Do 25 you see where I'm referring -- on the first page,

1 Mr. Papageorge.
 2 A. Oh, all right.
 3 Q. It reads it is found in salmon and in pike.
 4 It is found in sea eagle living on fish. It is found
 5 on the surface of the needles of the fur trees that
 6 is -- that is in the air. It is found in the hair of a
 7 five month baby. This is information you received in
 8 1970 concerning Dr. Jensen's work?
 9 MR. MILLER: You personally.
 10 Q. (By Mr. Oaas) You as -- you as the Manager
 11 of Environmental Control for Monsanto?
 12 A. Oh. In -- yes.
 13 Q. Okay. And it goes on to say the scientists
 14 working with biocides have for as long -- for a long
 15 time seen this something as unknown peaks on their gas
 16 chromatographs and at a meeting at the Wemmer-Gren
 17 Center, Research Assistant Soren Jensen of the
 18 Institute for ana -- analytical chemistry at the
 19 Stockholm University could reveal the identity of these
 20 peaks. It has been found that they consist of a group
 21 of poisons, Polychlorinated Biphenyls, parentheses, for
 22 short PCB which are closely related to and equally
 23 poisonous as DDT. Again, that was information you
 24 received as Manager of Environmental Control for
 25 Monsanto in -- in 1970, correct?

1 A. Correct.
 2 Q. Okay. And I -- and I'm not going to go
 3 through the entire report, but again, it contains
 4 excerpts like -- let's go to the middle of page 2, the
 5 fourth paragraph down where Jensen reports, quote, PCB
 6 is found in water and in air and not only in the
 7 Swedish air, but also in e.g. London air. Mr. Jensen
 8 has not yet been in London for sampling, but could
 9 identify the poison by studying a gas chromatogram of
 10 air published in a British technical journal. And he
 11 goes on to say Mr. Jensen has also examined the hair of
 12 his family and himself and has found PCB in all
 13 samples. Most PCB was found in the hair of his wife,
 14 but most sensational was that the girl, age five
 15 months, had more PCB in her hair than her brothers and
 16 sisters of three and six years. Probably the girl had
 17 got the poison via the mother's milk. Again, that was
 18 information you got from Mr. Jensen's work when you
 19 were the Manager of Environmental Control in 1970?
 20 A. Correct. Correct.
 21 Q. All right. Now, let's go on to Exhibit 52.
 22 MR. MILLER: Do you have 52?
 23 MR. OAS: Yes.
 24 A. I have read the exhibit.
 25 Q. (By Mr. Oaas) Okay. Have you -- have you

1 seen Exhibit 52 before, Mr. Papageorge?
 2 A. Yes.
 3 Q. Okay. Do you recall when that would have
 4 been?
 5 A. Early 1970.
 6 Q. Okay. It appears to be a letter from D.V.N.
 7 Hardy who I think we previously identified as -- as
 8 being with Monsanto Great Britain, and he was writing
 9 to somebody else -- a D.V.N. Hardy in -- in -- in
 10 London, also, correct?
 11 A. Correct.
 12 Q. And a copy of this letter was sent to
 13 Dr. Emmett Kelly in St. Louis, it indicates, correct?
 14 A. Correct.
 15 Q. Okay. And Mr. Hardy states in -- in the
 16 letter on the third paragraph I discussed with
 17 Richardson the soundness of Jensen's claims and was
 18 assured that his work and findings are sound. Jensen
 19 is on the staff of the Institute of Analytical
 20 Chemistry, University of Stockholm. And -- and this
 21 is -- this is the information you would have received
 22 in 1970, correct?
 23 A. Yes.
 24 Q. And it -- it also indicates that Monsanto
 25 Great Britain was familiar -- familiar with the report

1 that Dr. Jensen had made in 1966, correct?
 2 A. Yes.
 3 Q. All right. Let's go to Exhibit 53.
 4 MR. MILLER: Yeah, that's what I'm thinking.
 5 A. I have read the article.
 6 Q. (By Mr. Oaas) The first page of Exhibit
 7 53 -- again, the date of the exhibit would be in July
 8 of 1968, correct, on the first -- first page of Exhibit
 9 53?
 10 MR. MILLER: He's referring to that up at
 11 the top.
 12 A. Oh. Yes.
 13 Q. (By Mr. Oaas) Okay. It appears to be
 14 authored by a man named Cumming -- Cumming Paton,
 15 C-u-m-m-i-n-g P-a-t-o-n?
 16 A. Yes.
 17 Q. Can you identify who he is, please?
 18 A. He's a Monsanto employee that was at the
 19 home office of Monsanto and related to technical
 20 support for a line of products which included the PCBs.
 21 Q. All right. And attached to his letter of
 22 July 31, 1968 appears to be a publication in a -- a
 23 publication called the New Scientist, the title of the
 24 report of a new chemical hazard referring to Soren
 25 Jensen's work discovering PCBs in the environment in

Page 233 1 1966, correct? 2 A. Correct. 3 Q. This -- going back to the first page of 4 Exhibit 53. The second paragraph of Mr. Paton's letter 5 reads their article of PCB is the most opinionated we 6 have seen so far on Aroclor toxicity, and I am sure 7 their omission of the word Aroclor has prevented even 8 greater repercussions. Their theory on how PCB finds 9 it -- its way into fish, quote, and later humans, end 10 quote, is an all embracing one. I only hope Rachel 11 Carson never subscribed to the New Scientist and 12 that -- and that Ralph Nader doesn't decide to. Did I 13 read that correctly? 14 A. Yes. 15 Q. Okay. Apparently, Mr. Paton didn't think 16 much of Mr. Jen -- Mr. Jensen's work on PCBs, did he? 17 MR. MILLER: Object to the form of the 18 question. 19 A. It doesn't seem that way. 20 Q. (By Mr. Oaas) Yeah. As -- as Manager of 21 Environmental Control for Monsanto, were you familiar 22 with Rachel Carson's work -- work with respect to DDT? 23 A. Yes. 24 MR. OAAS: Okay. Do you want to take a 25 break now or keep going?	Page 235 1 THE VIDEOGRAPHER: We're continuing back on 2 the record at 12:02 p.m. starting tape no. 4. 3 Q. (By Mr. Oaas) Thank you, Mr. Papageorge. 4 We're going to go for another hour. Are you -- are you 5 ready to go? 6 A. I am ready. 7 Q. Okay. I'm going to hand you another set of 8 documents that we're going to go through in this last 9 hour. You can set aside all of the other exhibits that 10 we've previously used. 11 MR. MILLER: This starts with 54? 12 MR. OAAS: Right. 13 MR. MILLER: Okay. 14 (Deposition Exhibit Nos. 54 through 68 15 marked for identification.) 16 MR. OAAS: If you want to just get those out 17 of your way, Mr. Papageorge, so you have some more to 18 operate back there, we'll -- we'll accommodate you. 19 Thank you, Chris. 20 Q. (By Mr. Oaas) Mr. Papageorge, I'm going to 21 have you look at Exhibit 54 to start with and ask you 22 to look through that exhibit, please. 23 A. I have read the article. 24 Q. Have you ever seen Exhibit 54 before -- 25 A. It --
Page 234 1 MR. MILLER: No, that's fine. It's about 2 quarter to 12:00. Do you want to take a -- an hour or 3 45 minutes? How long do you think you have before 4 you're finished? 5 MR. OAAS: Well, I'm -- it looks like I'm 6 going to take all the way to 1:00. 7 MR. MILLER: Well, even -- Steve's got 8 questions. I've got questions. 9 THE VIDEOGRAPHER: We're off the record at 10 11:41. 11 (A short break was taken.) 12 MR. HOVEN: We've agreed that Torger is 13 going to continue with his questions until he's 14 completed, which is at 1:00, and then Steve's going to 15 follow up with some questions, and then we've agreed to 16 find a date in the near future to resume this 17 deposition to allow Monsanto to redirect. Agreeable? 18 MR. OAAS: Yes. 19 MR. MILLER: We're talking about a matter of 20 weeks. 21 MR. OAAS: That's agreeable. 22 MR. MILLER: Mr. Hoven is leaving the 23 deposition for the remainder of the afternoon, and 24 plaintiffs have no objection to our continuing the 25 deposition in his absence.	Page 236 1 Q. -- Mr. Papageorge? 2 A. -- it appears familiar, yes. 3 Q. On the first page of that exhibit it's 4 titled Statement From: Monsanto Company, St. Louis, 5 Missouri. By the way, I think we should establish for 6 the head -- for the record at least some point in this 7 deposition that Monsanto's headquarters in the United 8 States is located in St. Louis? 9 A. Correct. 10 Q. All right. And the date -- date of this 11 exhibit is October 29, 1969. Do you see that up in the 12 upper right-hand corner? 13 A. I do. 14 Q. It -- it appears me -- and correct me if I'm 15 wrong. This appears to be a statement created by 16 Monsanto for public dissemination? 17 A. Yes. 18 Q. Would -- would it be fair to call this a 19 press release? 20 A. Yes, that's appropriate. 21 Q. Was it given to newspapers by Monsanto -- 22 MR. MILLER: To your knowledge. 23 Q. (By Mr. Oaas) -- for publication -- well, 24 let me -- let me ask -- let me ask you this question. 25 Who did Monsanto give this exhibit to for public

Page 237 1 dissemination? 2 MR. MILLER: Object to the form. Calls for 3 speculation, but if you know. 4 A. I don't know the specifics, but it's -- this 5 type of information handled by Monsanto's public 6 relations department was distributed to not only 7 newspapers, but journals, magazines, radio stations, 8 TVs, and so on. 9 Q. (By Mr. Oaas) All right. Anybody who 10 wanted to know about -- had a question about PCBs and 11 called up Monsanto might have gotten a copy of this 12 statement? 13 MR. MILLER: Object to the form, calls for 14 speculation as to the date he may have received it, but 15 to the extent you know. 16 A. When you say might have, yes. 17 Q. (By Mr. Oaas) All right. Let's go to page 18 2 of the -- 2 of the exhibit. The third paragraph from 19 the top reads, quote, the common uses of commercial PCB 20 would not normally lead to its release into the natural 21 environment. Do you see that sentence, Mr. Papageorge? 22 A. Yes. 23 Q. As the Manager of Environmental Control for 24 Monsanto and as the Director of Environmental 25 Operations for Monsanto, would you agree with that	Page 239 1 with that statement? 2 A. Yes. 3 Q. All right. Let's go to Exhibit 55 then, 4 please. Now, that's a great big thick exhibit, and I'm 5 going to tell you, in the interest of saving time, that 6 my only questions are going to refer to page 36 of 7 that -- well, the front page of the exhibit as well as 8 page 36. 9 A. The front page -- 10 Q. The front page -- 11 A. -- being this one? 12 Q. -- being the page that the exhibit sticker 13 is on. 14 A. And then -- 15 Q. Page 36. 16 A. I think I have page 36. 17 Q. The heading is Miscellaneous Applications of 18 Aroclors? 19 A. Yes. 20 Q. All right. 21 A. I have read page 36. 22 Q. All right. And if -- if you need to refer 23 to any other part of this exhibit to answer a question, 24 please feel free to do so. I'm not trying to limit 25 your information here. I'm just trying to save time.
Page 238 1 statement? 2 A. Yes. 3 Q. Okay. Then let's go to page 3. The second 4 paragraph from the top says, quote, Polychlorinated 5 Biphenyls are not sprayed or dusted on crops, 6 woodlands, or any other areas as are pesticides. As 7 Manager of Environmental Control for Monsanto and as 8 Director of Environmental Operations for Monsanto, 9 would you agree with that statement? 10 A. Yes. 11 Q. It goes on to say in the next sentence to 12 our knowledge, they are not used in tires, house 13 paints, household products, epoxy resins, or major 14 vinyl plastics as has been charged. Again, as Manager 15 of Environmental Control and Director of Environmental 16 Operations for Monsanto, would you agree with that 17 sentence? 18 A. Yes. 19 Q. And then down on the fourth and last 20 paragraph of that page the first sentence reads it has 21 also been implied that polychlorinated biphenyls are, 22 quote, highly toxic, end quote, chemicals, period. 23 This is not true. As Manager of Product -- as Manager 24 of Environmental Control and as the Director of 25 Environmental Operations for Monsanto, would you agree	Page 240 1 A. Thank you. 2 Q. The head -- the first page of the exhibit, 3 the one that has the exhibit -- exhibit -- exhibit 4 sticker on it indicates that that is a Technical 5 Bulletin No. PL-306, correct? 6 A. Correct. 7 Q. It's a Monsanto publication? 8 A. Yes. 9 Q. And it's dated December 1960, correct? 10 A. Correct. 11 Q. We discussed yesterday that a Technical 12 Bulletin was, in general terms, information gathered 13 and publicized by Monsanto for its PCB customers -- in 14 this -- in this case for its PCB customers? 15 A. That is correct. 16 Q. And specifically, this Technical Bulletin 17 refers to, as the head -- heading on the front page 18 indicates, Aroclor plasticisers, correct? 19 A. Correct. 20 Q. All right. And it's my understanding that 21 this Technical Bulletin was in effect -- excuse me -- 22 was being used by Monsanto and being given to 23 Monsanto's PCB cu -- customers throughout the 1960s. 24 Would you agree with that? 25 MR. MILLER: Object to the form. Lack of

Page 241 1 foundation. Through the entire decade? 2 MR. OAAS: Yes. 3 A. Very likely, but I have no way of knowing 4 whether it reached 1969 -- 5 Q. (By Mr. Oaas) All right. 6 A. -- or '68 or some other date in the '60s. 7 Q. All right. Okay. Let's go to page 36 8 then. 9 A. I have it. 10 Q. And it -- it indicates that this technical 11 bulletin is telling customers in general about 12 miscellaneous applications of Aroclors. That's the 13 heading on the top, correct? 14 A. That is correct. 15 Q. And then I want to go down to the -- the -- 16 the topic which starts with vapor suppression, the 17 heading vapor suppression. Do you see that? 18 A. I see that. 19 Q. Parentheses, for longer insecticide kill 20 life, close -- close parentheses. Do you see that? 21 A. I do. 22 Q. Mr. Papageorge, wouldn't insecticides be 23 something that's sprayed on crops and woodlands as 24 pesticides are? 25 MR. MILLER: Object to the form of the	Page 243 1 hexachloride fortified with Aroclor 5460 remain toxic 2 to flies, ants, roaches, and silver fish for as long as 3 three months compared with one week for unfortified 4 sprays. Did I read that correctly? 5 A. Yes. 6 Q. Okay. And then I want to skip the next 7 paragraph and go on to the -- the last para -- the 8 third paragraph under that heading. Aroclor 5460 is 9 also recommended for non-crop insect formulations 10 containing chlordane, aldrin, and dieldrin. Do you 11 know -- do you know what the reference would be for 12 non-crop insect formulations using Aroclor 5460 as an 13 insecti -- as an insecticide extender? 14 A. It refers to insect -- insecticides used 15 against insects that are not related to crops. For 16 example, termites in a home. 17 Q. Something you would use -- for example, 18 termite control for a residence? 19 A. Correct. 20 Q. Okay. And then it goes on to say 21 formulations -- for non-crop insect formulations 22 containing chlordane, aldrin, and dieldrin. The other 23 resinous Aroclor compounds, 1254, 1260, 1262, 4465, and 24 5442, also non-volatile and sticky or tacky, likewise 25 merit evaluation as insecticide extenders. Did I read
Page 242 1 question. It mischaracterizes this document, the third 2 paragraph of that particular section. 3 Q. (By Mr. Oaas) Well, my question -- do you 4 want me to repeat my question? 5 A. I would appreciate it. 6 Q. Okay. Mr. Papageorge, aren't insecticides 7 sprayed on -- sprayed or dusted on crops and woodlands? 8 MR. MILLER: In general or those that 9 include Aroclors? 10 MR. OAAS: In general. 11 MR. MILLER: Object to the form. 12 A. Yes. 13 Q. (By Mr. Oaas) Okay. In the paragraph under 14 the heading it goes on to say the effective kill life 15 of expensive chlorinated in -- insecticides is extended 16 as much as ten-fold by the incorporation of equal parts 17 of Aroclor 5460 -- is that a PCB, Aroclor 5460? 18 A. No, it's not. 19 Q. No, it's not. What is it? 20 A. It's a chlorinated terphenyl -- 21 Q. Terphenyl. 22 A. T-e-r-p-h-e-n-y-l. 23 Q. All right -- which acts as both a vapor 24 suppressant and as a sticking agent. Hard surfaces, 25 painted or metallic, sprayed with lindane or benzene	Page 244 1 that correctly? 2 A. Yes. 3 Q. And -- and we've already established that 4 1254, 1260, and 1262 at least are PCBs, correct? 5 A. Correct. 6 Q. Okay. 7 MR. MILLER: I'm going to object to the form 8 of the question. Move to strike. Its -- you did not 9 include non-crop insecticides in your question -- 10 MR. OAAS: All right. 11 MR. MILLER: -- which is the meaning of this 12 paragraph. 13 MR. OAAS: All right. 14 Q. (By Mr. Oaas) Let's go on to Exhibit 56. 15 A. I have read the exhibit. 16 Q. All right. I take it you've seen Exhibit 56 17 before, correct? 18 A. Yes. 19 Q. All right. This appears to be a memo or 20 letter to you from Cumming Paton who we just previously 21 identified to you dated April 13th of 1970, correct? 22 A. Correct. 23 Q. And this would have been sent to you in your 24 capacity as the Manager for Environmental Control of 25 Monsanto, correct?

Page 245 1 A. Correct. 2 Q. And it's directed to you marked personal and 3 confidential, correct? 4 A. Correct. 5 Q. And right under the words personal and 6 confidential -- and I'll read -- just read it into 7 the -- is analysis of our Aroclor plasticiser survey 8 reveals a number of questionable applications. Do you 9 see where I'm reading from? 10 A. Yes. 11 Q. What -- what -- what did -- and it -- 12 reference at the top of the letter Aroclor plasticiser 13 survey. What -- what is that referring to, 14 Mr. Papageorge? 15 A. It's referring to the group of products that 16 were Aroclors that were sold by the Monsanto group 17 referred to as a Plasticiser -- 18 Q. Okay. 19 A. -- Group. 20 Q. I understand that part, but I'm -- what -- 21 what was the survey? What does the word survey 22 indicate in Aroclor -- Aroclor plasticiser survey? 23 What does that refer to? 24 A. That tells me that the business group made a 25 survey of all of its customers and the applications,	Page 247 1 column of volume and column and an app -- application 2 column. Do you see what I'm referring to? 3 A. Yes. 4 Q. And I'm just going to go through some of 5 these, and I've highlighted and -- on my note Kiwi 6 Polish; Aroclor, 1254; volume, unknown; application, 7 shoe polish. Would shoe polish be considered a 8 household product? 9 MR. MILLER: Object to the form, calls for 10 speculation as to how it was used. 11 A. It could be in -- described as a household 12 product. 13 Q. (By Mr. Oaas) Okay. And Aroclor 1250 -- 14 excuse me -- Aroclor 1242, that's a PCB, correct? 15 A. Yes. 16 Q. Okay. And I'm going to go -- skip down to 17 Florasynth Labs. They were apparently a plasticiser 18 customer of Monsanto, correct? 19 A. Yes. 20 Q. And we're referring to Aro -- Aroclor 1262? 21 A. Correct. 22 Q. Is that a PCB? 23 A. Yes. 24 Q. Okay. And it indicates -- there's no number 25 in the volume column, but it indicates that the
Page 246 1 and Mr. Paton summarized that. 2 Q. Okay. And -- and Mr. Paton -- I guess I 3 mispronounced it. It's pronounced Paton -- Paton? 4 A. Well, Cumming Paton was the way we 5 pronounced it. 6 Q. Okay. 7 A. He accepted it. 8 Q. And he was a member of the business group in 9 Monsanto? 10 A. Yes. He was the -- the business group 11 called plasticisers managed by Mr. Springgate. 12 Q. Okay. And Mr. Springgate was the head of 13 the -- 14 A. Plasticiser group. 15 Q. Okay. Do you know -- do you know whether 16 he's still alive or not, Mr. Springgate? 17 A. The last I heard he's still around -- alive. 18 Q. Do you know where he lives? 19 A. West coast is all I know. 20 Q. Okay. How about Mr. Paton? 21 A. I don't know about Cumming. 22 Q. All right. Now, I want to ask you some 23 questions about the first page of this exhibit. 24 There's a -- following the part I just referenced to, 25 there's a chart indicating customer column and Aroclor	Page 248 1 application was for perfumes? 2 A. That's what it indicates. 3 Q. Would that indicate that that -- that 4 application was for a household product? 5 MR. MILLER: Objection. Calls for 6 speculation as to what Florasynth Labs was perfuming. 7 A. I have no way of knowing if it was used as a 8 perfume in other products other than used by people -- 9 Q. (By Mr. Oaas) Okay. 10 A. -- on human beings. 11 Q. If it was used by women as a perfume in -- 12 in the normal understanding of that word, we could 13 consider it a household product, couldn't we? 14 MR. MILLER: Object to the form. Still -- 15 still calling for speculation despite your assumption. 16 A. It could be perfume in a -- in a spray can 17 for -- 18 Q. (By Mr. Oaas) Okay. Let's go to the next 19 one, U.S. Catheter Instruments. I take it they were a 20 PCB customer? 21 A. That's what's indicated here. 22 Q. Okay. And they apparently -- apparently 23 used PCBs in catheters? That seems to be an 24 interesting application for it, but did you know that 25 before April of 1970 that you had a customer that

Page 249 1 using -- was using PCBs in catheters? 2 MR. MILLER: Object to the form. 3 A. I did not. 4 MR. MILLER: It also doesn't suggest that 5 they were for human use. 6 Q. (By Mr. Oaas) Following that is Perry 7 Brothers appeared to be a PC -- a PCB plasticiser 8 customer of Monsanto? 9 A. That's what this -- 10 Q. Okay. 11 A. -- indicates. 12 Q. They -- they were purchasing Aroclor 1242? 13 A. Yes. 14 Q. That's a PCB, correct? 15 A. Yes. 16 Q. And again, the application is listed as 17 perfumes? 18 A. That's what this shows. 19 Q. Okay. And then the bottom one, you have a 20 customer listed as Chapman Chemical, correct? 21 A. Yes. 22 Q. And they were purchasing Aroclor 1262, which 23 is a PCB, correct? 24 A. Correct. 25 Q. And the application is listed as insecticide	Page 251 1 A. That's what it indicates. 2 Q. Okay. Do you have any independent knowledge 3 of the meaning of the word drop with respect to this 4 particular customer? 5 A. I do not. 6 Q. Okay. And then the next customer is John 7 Rooney -- listed as John Rooney, purchaser of Aroclor 8 1254 and 1260. Volume, unknown, and -- and the 9 application is a pesticide carrier. Do you see that? 10 A. Yes. 11 Q. Isn't a pesticide, Mr. Papageorge, something 12 that's sprayed on crops and woodlands? 13 MR. MILLER: Object to the form of the 14 question. That calls for speculation as to how it was 15 being used by Mr. Rooney. 16 A. I don't know if it's limited just to crops. 17 Q. (By Mr. Oaas) Okay. All right. And the -- 18 the next one is the -- the customer is identified as 19 McCloskey Varnish. Do you see that? 20 A. I do. 21 Q. And the vol -- the Aroclor purchase is 22 5460. Now, did -- did we identify that -- that's not a 23 PCB, correct? 24 A. That is correct. 25 Q. Okay. We'll skip that. Let's go down to
Page 250 1 carrier? 2 A. That's what it indicates. 3 Q. Okay. Would an -- an insecticide be 4 something that was sprayed on crops and woodlands? 5 MR. MILLER: Object to the form. Calls for 6 speculation as to how this insecticide was being 7 applied. 8 A. I don't know if it was limited to any 9 particular type of insecticide now. 10 Q. (By Mr. Oaas) All right. On the second 11 page then I'm going to again ask you the same kind of 12 questions. It indicates the first customer would be a 13 company called Chemagro -- and I don't know if I'm 14 pronouncing that correctly -- correct? 15 A. Yes. 16 Q. Chem -- Chemagro, maybe. I'm not sure. 17 A. Chemagro, uh-huh. 18 Q. Yeah. They were purchasing Aroclor 1254? 19 A. Yes. 20 Q. Okay. And the volume is listed as 120 21 pounds? 22 A. Yes. 23 Q. Okay. And the application was an 24 insecticide carrier, and then, parentheses, dropped, 25 close parentheses?	Page 252 1 the customer identified as Halvorson Tree Company about 2 in the middle of the -- middle of the second page. Do 3 you see that? 4 A. Halvorson Tree, yes, I do, uh-huh. 5 Q. And they apparently purchased Aroclor 1254 6 as well as 5460 for Monsanto? 7 A. Yes. 8 Q. In reference to Aroclor 1254, the volume is 9 listed as 7 M pounds, correct? 10 A. Yes. 11 Q. Would that be 7,000 pounds or 7,000,000 12 pounds, do you know? 13 MR. MILLER: M usually designates thousand. 14 A. Thousand. 15 Q. (By Mr. Oaas) It usually does, but I was 16 just -- 17 A. Thousand, yeah. 18 Q. Okay. And then the application is listed as 19 Xmas tree flame proofing. Do you see that? 20 A. I do. 21 Q. Would you think Xmas tree flame proofing 22 would be considered a household product -- or excuse 23 me -- would you consider Xmas trees to be considered a 24 household product? 25 MR. MILLER: Object to the form in terms of

Page 253 1 how these particular trees were being displayed. 2 A. It could be household. It could be 3 commercial. 4 Q. (By Mr. Oaas) Sure. 5 A. It could be outdoors. 6 Q. Okay. Let's go down to the second to the 7 last customer on the page identified as Cooper & 8 Nephew? 9 A. I see that. 10 Q. Again, we're dealing with 5460, so that 11 would be a non-PCB, correct? 12 A. Correct. 13 Q. Okay. All right. Let's go to Exhibit 57, 14 which is a duplicate of an exhibit we used earlier this 15 morning, and I don't know what the number was, but I 16 just had it remarked for convenience purposes. 17 A. I have read the exhibit. 18 Q. Okay. In -- in your capacity as Manager of 19 Environmental Control for Monsanto, did you ever find 20 out for sure whether or not your customers -- any of 21 your customers were using paints containing PCBs as a 22 coating for the interior of water towers, whether water 23 was primarily used for human consumption? 24 A. Yes. 25 Q. They were, in fact, doing that?	Page 255 1 manufacture or production of milk. Okay. I'm sorry. 2 Q. (By Mr. Oaas) Okay. Let's go on to Exhibit 3 58. 4 A. I'm sorry. 58? 5 Q. Uh-huh. 6 A. I have scanned the exhibit. 7 Q. All right. Can you identify who Hercules 8 Powder Company is? Were they a -- were they a PCB 9 customer of Monsanto's? That's all I really want to 10 know. 11 A. Yeah. Yeah, they were. 12 Q. They were. Okay. Were they a large 13 customer? 14 A. Not too large. 15 Q. Okay. 16 A. A modest amount of purchases. 17 Q. Okay. Did you become aware at any time as 18 the Manager of Envir -- of Environmental Control for 19 Monsanto or the Director of Environmental Operations 20 for Monsanto that Hercules Powder Company was 21 recommending the use of Aroclor 1254 as an ingredient 22 in coatings for aluminum foil, specifically Reynolds 23 Wrap? 24 MR. MILLER: Object to the form. Do -- do 25 you have a date for this document?
Page 254 1 A. Uh-huh. Some of them. 2 Q. Some of them? 3 A. Not many. 4 Q. Okay. Would -- would you agree or disagree 5 that water for human consumption would be considered a 6 household product? 7 A. Well, some of the water is used as a 8 household product. 9 Q. Would you agree that milk would be 10 considered a household product? 11 A. That what would be? 12 Q. Milk. 13 A. Yes, but I'm confused by the reference to 14 milk. 15 Q. Okay. I'll -- I -- I had in mind the 16 Ohio -- the Ohio milk instance we were talking about, 17 and I -- 18 A. Oh. 19 Q. -- I just wanted to know whether you 20 considered, as -- as the Manager of Environmental 21 Control, whether or not milk would be considered a 22 household product? 23 A. Yes. 24 Q. Okay. Let's go on to Exhibit 58. 25 MR. MILLER: But PCBs weren't used in the	Page 256 1 MR. OAAS: No. 2 MR. MILLER: This is a -- incidentally, 3 Exhibit 58 is an undated document from a third party, 4 Hercules Powder. And I'll object to the reference to 5 Reynolds Wrap as being -- 6 A. Reynolds Wrap. 7 MR. MILLER: -- something not -- not in the 8 record. 9 Q. (By Mr. Oaas) Well, why don't you look 10 at -- let's go to paragraph A on the first page, 11 adhesion of nitrocellulose lacquers. Do you see where 12 I'm referring to, Mr. Papageorge? 13 A. Yes. 14 Q. Under that heading, is the -- it reads the 15 Hercules Coatings Service Laboratory investigated the 16 adhesion of four nitrocellulose-based formulations to 17 two types of untreated foil, dash, quote, Reynolds 18 Wrap, end quote, foil sold for household use. Do you 19 see that reference? 20 A. I do. 21 Q. Okay. And then it goes on to say and heavy 22 duty foil used as an over-wrap on cigarette cartons. 23 Do you see that reference? 24 A. Yes. 25 Q. Okay. And then if you go to page 4 of the

Page 257 1 exhibit, do you not see under table 2 where Hercules is 2 recommending the use of Aroclor 1254 in its formulation 3 for the aluminum foil coating reference there? Page 4 4 of the -- page -- I don't think you're on the right 5 page. I think -- I think it's the next page. Let's go 6 to that page. 7 A. Page -- 8 Q. Page 4 of 6. 9 A. -- page 5. 10 Q. Well, I'm reading up in the top -- I -- I'm 11 read -- looking at the -- the right hand -- upper 12 right-hand corner. 13 A. Oh, okay. 14 Q. There we go. 15 A. All right. 16 Q. That's the page I want you to look at, yeah. 17 Great. 18 A. All right. 19 Q. Just take a minute and look at that page. 20 A. Okay. I've looked at it. 21 Q. And on page 4, it appears to indicate that 22 Hercules is recommending the use of Aroclor 1254 for -- 23 as an ingredient in the aluminum foil coating 24 referenced on that page, correct? 25 MR. MILLER: Object to the form. I don't	Page 259 1 Q. (By Mr. Oaas) All right. After looking at 2 that document, Mr. Papageorge, let me ask you whether 3 or not in your capacity as Manager of Environmental 4 Control, whether you ev -- ever became aware that 5 Hercules Powder Company was recommending the use of 6 Aroclor 1254 as a coating for Reynolds Wrap? 7 MR. MILLER: At what period of time? 8 MR. OAAS: When he was the Manager of 9 Environmental Control. 10 MR. MILLER: No. I'm sorry. At what period 11 of time was Hercules making that representation? 12 MR. OAAS: Any -- any time prior to the 13 time -- 14 Q. (By Mr. Oaas) The question implied any time 15 prior to the time you were Manager of Environmental 16 Control were you aware of that? 17 A. I was aware that the supplying of 1254 to 18 this application was terminated. 19 Q. Okay. Do you know when that occurred? 20 A. Late '71. 21 Q. All right. Do you know how long it had been 22 in existence -- 23 A. I do not. 24 Q. -- prior to its termination? 25 A. I do not.
Page 258 1 understand this table at all. Maybe Mr. Papageorge 2 does, but I don't. 3 A. It is referred to for one of their -- 4 Q. (By Mr. Oaas) One of their coatings? 5 A. One of their six coatings that's shown here. 6 Q. Correct. And you would agree, would you 7 not, that Reynolds Wrap would be considered a household 8 product? 9 MR. MILLER: Object to the form of the 10 question. 11 A. Generally, yes. 12 Q. (By Mr. Oaas) All right. Let's go on to 13 Exhibit 59, please. 14 MR. MILLER: What is -- what is 1? Do you 15 know what that 1 is in table 2? Do you know what that 16 refers to? 17 THE WITNESS: They've got six different 18 recipes with some of the ingredients in each. 19 MR. MILLER: Yeah. Do you know if that 20 refers to Reynolds Wrap, no. 1, that would have been 21 used for household use? There's nothing on the 22 document that says that, is there, Mr. Papageorge? 23 THE WITNESS: No, it -- it doesn't. It just 24 says Reynolds Wrap is involved, but I don't know which 25 of these six coatings apply.	Page 260 1 Q. All right. Let's go to Exhibit 59 then. 2 A. I have read Exhibit 59. 3 Q. All right. Do you know what that is? 4 A. I'm sorry? 5 Q. Do you know -- can you tell me what Exhibit 6 59 is? 7 A. It's a -- I'm going to call it a -- a 8 bulletin -- 9 Q. Put out by Monsanto? 10 A. -- put out by Monsanto -- 11 Q. Okay. 12 A. -- and signed by Cumming Paton -- 13 Q. Okay. 14 A. -- dated 1968. 15 Q. Okay. And it appears that -- on the front 16 page that the subject of the bulletin is Parlon 17 Promotion Means Aroclor Opportunities. Do you see 18 that? 19 A. Yes, I do. 20 Q. Okay. Wasn't it your understanding as 21 Manager of Environmental Control and Director of 22 Environmental Operations that Monsanto had sold in the 23 1960s Aroclor PCBs to the -- that were recommended as 24 an ingredient in Parlon paints? 25 A. Yes.

Page 261 1 Q. And Parlon, is my understanding, was a 2 chlorinated rubber manufactured by Hercules Powder 3 Company, correct? 4 A. Yes. 5 Q. And then as we go down that exhibit, next to 6 paragraph 2 there's the heading swimming pool paints -- 7 A. I see it. 8 Q. -- on the front page. 9 A. Yes. Yes. 10 Q. Were you aware as the Manager of 11 Environmental Control that during the 1960s Hercules 12 had been recommending the use of Aroclor 1254 as an 13 ingredient in its Parlon paints for swimming pools? 14 MR. MILLER: Object to the form of the 15 question. It's not founded by any particular time that 16 recommendation may have been made. 17 Q. (By Mr. Oaas) In the 1960s. 18 A. Eventually, I was informed of that, yes. 19 Q. All right. Okay. 20 A. Early '70. 21 Q. '71, in there? 22 A. '70 is when I was informed of these uses. 23 Q. Okay. All right. And -- and paints for 24 swimming pools that contained PCBs, wouldn't that be 25 considered a household use or a household product?	Page 263 1 A. I see that. 2 Q. Did you become aware at any time you were 3 Manager of Environmental Control in the 1970 -- or the 4 1970 time frame that PCBs were being used as an 5 ingredient in indoor floor paints? 6 A. No. Uh-uh. 7 Q. Let's go on to page 60 then -- excuse me. 8 Let's go on to Exhibit 60. 9 A. Okay. I have read the exhibit. 10 Q. All right. Have you -- 11 MR. MILLER: Is there a reason you're not 12 giving him the full copy of this that has the date? 13 MR. Oaas: This is all we have. I mean, 14 this is all we have in the -- I'm giving him all we 15 have. This is what we got from Monsanto in North 16 Carolina. 17 MR. MILLER: All right. Well, I'll 18 object -- 19 MR. Oaas: And I -- 20 MR. MILLER: -- to the use of this incomplete 21 document -- 22 MR. Oaas: And if -- 23 MR. MILLER: -- and any questions relating to 24 it. 25 MR. Oaas: If you have any other parts of
Page 262 1 A. Some of the applications would fit that 2 category. 3 Q. Okay. And let -- let's go down to paragraph 4 no. 4 where it lists paints for tiled roofs in 5 Florida. Do you see that? 6 A. I see that, yes. 7 Q. Again, were -- did you become aware in 1970 8 that Hercules Powder Company was recommending the use 9 of Aroclor 1254 for use in a -- in a paint formulation 10 that contained its chlorinated rubber product called 11 Parlon? 12 A. I don't recall that application. 13 Q. If it -- if -- what I -- if it, in fact, was 14 used for that application, the paint for tiled roofs, 15 the paints containing PCBs for tiled roofs, that would 16 be considered either a household use or a household 17 product, correct? 18 MR. MILLER: Object to the form. It calls 19 for speculation and there's no foundation. 20 A. I don't know if it's correct, but it's 21 possible that it was considered a household product. 22 Q. (By Mr. Oaas) Okay. Let's go to -- the 23 se -- the next page of that exhibit, please, 24 Mr. Papageorge. Going down to par -- to no. 7 where it 25 says floor finishes.	Page 264 1 this document, I would stipulate, even without looking 2 at it, that this can -- that they can be attached to 3 the exhibit and used in your questioning later on for 4 any other purposes. 5 MR. MILLER: No, I -- I don't need your 6 stipulation to that effect. I just am a little puzzled 7 why you wouldn't make an effort to get a complete 8 document to show to Mr. Papageorge before you ask him 9 questions unfairly about a partial document. 10 MR. Oaas: We made quite an effort to get 11 all of the documents we could, and I -- I don't think 12 I'm going to ask any unfair questions with reference to 13 this exhibit. 14 Q. (By Mr. Oaas) And I want to direct your 15 attention to the first page of the exhibit, 16 Mr. Papageorge. Okay? 17 A. I have it. 18 Q. Okay. Isn't it true that in the 1960s PCBs 19 were recommended by Monsanto for use in paints and 20 varnishes and lacquers that were used by consumers to 21 paint or varnish or lacquer household furniture? 22 MR. MILLER: Let me object to the form of 23 the question. It's two parts with respect to the 24 recommendation and then with respect to the ultimate 25 use. I'll object to the form and lack of foundation.

Page 265 1 A. I think you mentioned use on furniture? 2 Q. (By Mr. Oaas) Right. I can -- do you want 3 me to re -- ask my question -- rephrase my question? 4 A. Yeah, do that. 5 Q. Okay. Sure. Isn't it true that in the 6 1960s Monsanto was recommending and selling for use 7 PCBs for use in paint, varnish, and lacquers that were 8 used, for example, by the lady pictured in the picture 9 on this front page of this exhibit to paint, varnish, 10 or lacquer household furniture? 11 MR. MILLER: Object to the form. 12 A. Yes. 13 Q. (By Mr. Oaas) Let's go to the third page 14 of -- of that exhibit. 15 MR. MILLER: Wait a minute. Is -- 4465 and 16 5460, those are not PCB formulations, is that correct? 17 THE WITNESS: 4465 is a blend -- 18 MR. MILLER: Okay. 19 THE WITNESS: -- of a terphenyl with a 20 biphenyl. 21 MR. MILLER: Okay. 22 MR. OAAS: Okay. 23 THE WITNESS: I don't recall just which of 24 the terphenyls and biphenyls, but it's a blend. 25 MR. OAAS: Okay. All right.	Page 267 1 results. 2 Q. (By Mr. Oaas) And with respect to highway 3 markings, wouldn't -- the use of PCBs and coatings for 4 highway markings would be a use that would lead to the 5 release of PCBs into the environment? 6 MR. MILLER: Object to the form. 7 A. Very likely, yes. 8 Q. (By Mr. Oaas) Okay. And the same question 9 with respect to the use of PCBs in masonry coatings? 10 That would be a use that would normally lead to the 11 release of PCBs into the environment? 12 A. Only if the surface is damaged. 13 Q. Okay. Let's go on to page 61 -- excuse 14 me -- Exhibit 61. 15 A. Yeah. 16 Q. I'm sorry. Slap me upside the head. 17 Exhibit 61. We're done with 60. If we could go to 61, 18 please. 19 A. I have scanned through the exhibit. 20 Q. All right. Thank, you sir. I would like to 21 direct your attention to page no. 36, and we're -- I'm 22 referencing the handwriting number at the bottom of the 23 pages. It's page 36, and it has MON-MT no. 003366. 24 MR. MILLER: Do you have a year on this? 25 MR. OAAS: No.
Page 266 1 Q. (By Mr. Oaas) The third page of that 2 exhibit has the -- has a heading titled Chlorin -- 3 Chlorinated Rubber and Styrene -- you're going to have 4 to help me pronounce that word. 5 A. Butadiene. 6 Q. -- Butadiene Copolymers, correct? 7 A. Correct. 8 Q. Okay. And then -- and I -- I'm going to 9 draw your attention to this -- to the second paragraph 10 which reads in rubber base coatings, Aroclor 1254 is 11 used as a liquid flexibilizing plasticiser and commonly 12 used in combination with Aroclor 5460 which serves as a 13 resin fortifier. The outstanding chemical resistance, 14 corrosion resistance, and oxidation resistance of 15 rubber base Aroclor coatings make them outstanding 16 protective coatings for chemical plants, boats, highway 17 marking, and masonry. Do you see -- do you see that? 18 A. I do. 19 Q. Okay. Wouldn't it be true that the use of 20 Aroclor 1254 in a coating for boat -- for boats would 21 be a -- a use that would normally lead to the release 22 of PCBs into the water environment? 23 MR. MILLER: Object to the form of the 24 question and lack of foundation. 25 A. I don't know that I'd consider it normally	Page 268 1 MR. MILLER: You don't? 2 MR. OAAS: No. 3 Q. (By Mr. Oaas) Are you there, 4 Mr. Papageorge? 5 A. Page -- page 36? 6 Q. Yeah. Right. 7 A. Yes. 8 Q. It has a -- a picture at the -- on the top 9 half, and -- and the -- the wording on that page starts 10 with this paint says one food-processing plant engineer 11 in speaking of Parlon, stands up where other types just 12 couldn't take it. Are you on that page? 13 A. Yes, I am. 14 Q. And Exhibit 61 is en -- is entitled 15 Protection With Parlon, correct? 16 A. Yes. 17 Q. Okay. And we've already identified that 18 Parlon -- what Parlon is, correct? 19 A. Yes. 20 Q. Okay. Were you aware at any time as Manager 21 for Environmental Control of -- for Monsanto or the 22 Director of Environmental Operations of Monsanto that 23 one of your customers, Hercules Powder Company, was 24 recommending the use of PCBs in its Parlon base paints 25 for the use in the interior of food processing plants.

Page 269 1 A. I was aware of the use in -- with Parlon, 2 but I don't recall specifically a reference to food 3 processing plants as distinguished from other uses of 4 the same kind of mixture. 5 Q. Okay. And what I'm referring to 6 specifically -- let's go -- let's go on to the next 7 page, page 37. Directing your attention to the up -- 8 the left-hand portion of page 37 up at the top where it 9 reads Parlon finish applied to walls, ceiling, and 10 mechanical equipment in processing plant producing 11 synthetic blood plasma. Do you see where I'm reading 12 from that? 13 A. Yes. 14 Q. Were you aware -- aware of that particular 15 use for Parlon based paints? 16 A. I was not. 17 Q. Never at any time? 18 A. I was not. 19 Q. Okay. Let's go down to the next one. It 20 reads a two-coat Parlon finish protects both fruit 21 elevators and fruit storage bins, and peel storage and 22 sugar bins at Golden Citrus Juices, Inc. Do you see 23 where I'm reading there? 24 A. Yes. 25 Q. You -- were you aware of the Parlon -- the	Page 271 1 MR. OAAS: Handwritten 40. 2 MR. MILLER: Why don't you sue Hercules? 3 They seem like a better defendant than Monsanto. 4 Q. (By Mr. Oaas) Have you had a chance to look 5 at page 40? 6 A. Yes. 7 Q. Okay. Do you see where it's headed tra -- 8 the -- at the top of the page it reads Traffic and 9 Floor Paints? 10 A. I see it. 11 Q. We've already discussed traffic paints, I 12 think, enough, so let's go to floor paints. And I'm 13 gonna -- I'm just going to start in the second 14 paragraph down where it reads Parlon floor paints are 15 easy to clean, richly colorful, applied to wood, metal, 16 asphalt, and concrete, they give long-term protection 17 against attacks from acids, mineral oils, caustic 18 solutions, and moisture. Did I read that correctly? 19 A. Yes. 20 Q. Were you aware at any time you were Manager 21 of Environmental Control or Director of Environmental 22 Operation for Monsanto that Hercules was rec -- 23 recommending the use of Aroclor 1254 or other PCB 24 Aroclors for its use in Parlon floor paints? 25 A. No.
Page 270 1 use of Parlon for -- for use at that particular 2 facility? 3 A. No. 4 Q. Okay. And then going down to the last one, 5 it reads snow white Parlon finish of interior walls and 6 ceiling of Vernell's Candy Factory, parentheses, right, 7 close paren, makes it one of Seattle's show places. 8 Were -- were you aware of that particular use? 9 A. No. 10 Q. And then if you go over to the right-hand 11 side, again, at the bottom of the page starting with 12 wo -- bakeries. It reads bakeries, too, stay clean and 13 fresh-looking longer when protected by Parlon. Bakery 14 equipment, parentheses, above, close parentheses, at 15 Drake Bakeries, Roxbury, Massachusetts, has two-coat 16 Parlon finish still in excellent condition after more 17 than a year of daily cleaning and exposure in humid 18 atmosphere at 100 degrees Fahrenheit. Do you see that? 19 A. I do. 20 Q. Were you aware of the -- that -- that 21 particular use? 22 A. I was not. 23 Q. Okay. Let's go on to page 40 of the same 24 exhibit? 25 MR. MILLER: Your handwritten 40?	Page 272 1 MR. MILLER: Did -- did Monsanto own 2 Hercules? 3 THE WITNESS: No. 4 MR. MILLER: No. Separate company? 5 THE WITNESS: Huh? 6 MR. MILLER: Separate company all together? 7 THE WITNESS: Yeah. Hercules eventually 8 became the Hercules Chemical Company. 9 MR. MILLER: They're the ones that made the 10 paints. You didn't make the paints, isn't that right? 11 THE WITNESS: No, we didn't. 12 MR. MILLER: There you go. 13 THE WITNESS: No. 14 MR. OAAS: Are we going to get into another 15 argument on the record? 16 MR. MILLER: No. I'm just -- we're finished 17 with that. It's like suing a -- suing the -- the tree 18 grower when the McDonald's bag blows into your yard. 19 MR. OAAS: I'm just going to move to strike 20 for the record all those -- 21 MR. MILLER: They're not going to a jury. 22 MR. OAAS: -- unnecessary comments. 23 MR. MILLER: I'll withdraw the comments. 24 Q. (By Mr. Oaas) Let's go to Exhibit 62. 25 MR. MILLER: I'm sorry. Exhibit 62?

Page 273 1 MR. OAAS: Yeah. 2 Q. (By Mr. Oaas) I think I'll skip Exhibit 62, 3 and just in the interest of saving time, let's go on to 4 Exhibit 63. 5 A. I have scanned the exhibit. 6 Q. Have you ever seen Exhibit 63 before, 7 Mr. Papageorge? 8 A. Yes, I have. 9 Q. Are you acquainted with Carl Gustafson? 10 A. Yes. 11 Q. And did you know him personally? 12 A. Yes. 13 Q. And what time frame would -- would we be 14 talking about? 15 A. 1970, '71, early '72. 16 Q. And where was he employed during that time 17 frame? 18 A. Well, he initially started with the Water -- 19 as shown, the Water Quality Administration in Athens. 20 Q. This Federal Water Quality Administration in 21 Athens, Georgia? 22 A. Yeah. 23 Q. All right. 24 A. And eventually, as I recall, that became 25 part of EPA.	Page 275 1 Q. Okay. Would you agree with that statement? 2 A. Yes. 3 Q. Let's go on to Exhibit 64 then. You know, 4 Mr. Papageorge, I think I can save you some reading 5 time. Just let -- let me ask the questions this way 6 with respect to Exhibit 64 and Exhibit 65. You are 7 certainly familiar with Congressman William F. Ryan, 8 correct? 9 A. Yes. 10 Q. Okay. And I believe he was a congressman 11 from Illinois or -- 12 MR. MILLER: New York. 13 Q. (By Mr. Oaas) -- excuse me -- New York -- 14 A. Yeah. 15 Q. -- in the 1970s time frame? 16 A. Yes. 17 Q. Okay. And Exhibits 64 and 65, I'll 18 represent to you, appear to be copies of letters from 19 the president of Monsanto, John -- excuse me -- the 20 Assistant General Manager of Monsanto, John Mason -- 21 A. Yes. 22 Q. -- to Congressman Ryan? 23 A. Yes. 24 Q. Okay. The first one is dated April 28, 25 1970?
Page 274 1 Q. All right. And he apparently published an 2 article entitled PCBs-Prevalent and Persistent? 3 A. Yes. 4 Q. It appeared in the Journal of Environmental 5 Science & Technology, I believe, in 1970? 6 A. Yes. 7 Q. All right. I just want to go to the last 8 page of that exhibit. In the middle of the page 9 there's a heading entitled research needs. Do you see 10 that? 11 A. I see that. 12 Q. Then there's a number of bullet items below 13 that? 14 A. Yes. 15 Q. And I'm referring to the third bullet item. 16 I'm just going to read it into the record and ask you a 17 question about it. It reads we need to know all of the 18 uses for the PCBs. What is the annual production of 19 PCBs? Our knowledge of these facts is limited and 20 needs to be expanded. These facts should be known if 21 we are to accurately determine how they get into the 22 environment and take -- and take steps to prevent 23 further environmental contamination by them. Did I -- 24 did I read that correctly? 25 A. Yes.	Page 276 1 A. Right. 2 Q. If I can just direct your attention to 3 the -- to page 3 of that letter, on the top left-hand 4 corner of page 3, and draw your attention to the second 5 paragraph. It appears that Mr. Mason is telling 6 Mr. Ryan the following: Quote, in my opinion, to 7 release a complete list of uses for Aroclor, names of 8 products and manufacturers, as you suggest, would only 9 cause undue alarm to the public and would make no 10 contributions to this area. Do you see that? 11 A. Yes. Yes. 12 Q. Wasn't that Mon -- Monsanto's -- as you 13 understood it, wasn't that Mon -- Monsanto's official 14 position in 1970 that they were not going to release 15 that type of information to Congressman Ryan or anybody 16 else for that matter? 17 A. That's true. 18 Q. And with reference to the letter of June 30, 19 1970, again, we appear to have a letter from John 20 Mason, the Assistant General Manager from Monsanto, to 21 Congressman Ryan dated June 30, 1970? 22 A. Yes. 23 Q. Okay. You were acquainted with John Mason, 24 correct, I -- I take it? 25 A. Oh, yes.

Page 277 1 Q. Okay. And it -- it's correct that -- to 2 state for the record that he was the Assistant General 3 Manager of Monsanto in 1970? 4 A. Yes. 5 Q. Okay. And at this same time frame you were 6 the Man -- Manager of Environmental Control for 7 Monsanto, correct? 8 A. Correct. 9 Q. You were copied on both the -- both letters, 10 Exhibit 64 and 65, I believe -- at least 64 clearly 11 indicates you were copied. I -- I -- I guess I only 12 can ask you with reference to -- 13 A. You're right. You're correct. 14 Q. Did you get -- were you copied on Exhibit 64 15 -- 16 A. On both of them. 17 Q. Both of them. Okay. And if I could direct 18 your attention to page 5 of Exhibit 65, the next to the 19 last -- last paragraph on that page. I believe it's 20 the last sentence of the next to the last paragraph I 21 want to read and ask you a question about. It states 22 as you know, comma, we have issued warnings to all of 23 our customers using the chlorinated biphenyls, 24 period -- excuse me, two sentences. We have not issued 25 warnings to all potential users of chlorinated	Page 279 1 biphenyls, but we have more than covered this point by 2 refusing to sell for application where control cannot 3 be established. Is that -- is that an accurate 4 statement by Mr. Mason concerning the warnings that 5 Monsanto gave? 6 A. Yes. 7 Q. As far as I know, Monsanto may -- never gave 8 any warnings to potential users -- or excuse me. To 9 your knowledge, when you were the Manager of Product -- 10 when you were the Manager of Environmental Control or 11 the Director of Environmental Operations, did you 12 yourself ever issue any warnings to users or consumers 13 of products that contained PCBs? 14 MR. MILLER: Well, let me object. Are you 15 excluding press releases, communications to the public, 16 communications to FDA, to the Patuxent Research 17 Facility by the Department of Interior, communications 18 with the task force -- interdepartmental task force? 19 Are you excluding all of those communications with -- 20 MR. OAAS: Yeah, I -- 21 MR. MILLER: -- government, with 22 universities -- 23 MR. OAAS: I'm talking -- 24 MR. MILLER: -- with all those people? 25 MR. OAAS: -- about the people who needed to
Page 278 1 biphenyls, but we have more than covered this point by 2 refusing to sell for applications where control can not 3 be established. Is that a correct statement as far as 4 you know? 5 A. What page are we on? 6 Q. Oh, I'm sorry, Mr. Papageorge. Page 5. 7 A. I have page 5. 8 Q. Okay. I -- I'm referring to page -- the -- 9 at the top. I'm referring to -- no, that -- go to -- 10 yeah. Go to page 5. Yeah, we have too many numbers on 11 the document. 12 MR. MILLER: Oh. You're talking about -- 13 oh. I'm sorry. I was -- I made the same mistake. I 14 was referring to your -- 15 MR. OAAS: That's my fault. That's my 16 fault. Page 5 in the upper left-hand corner. 17 A. Okay. 18 Q. (By Mr. Oaas) We can go to the next to the 19 last paragraph, and I'm going to read into the record 20 the last two sentences of page 5, and this is Mason 21 corresponding with Congressman -- United States 22 Congressman Ryan. As you are -- as you know, we have 23 issued warnings to all of our customers using the 24 chlorinated biphenyls, period. We have not issued 25 warnings to all potential users of chlorinated	Page 280 1 know it most which would be the users and consumers of 2 products that contained PCBs. 3 Q. (By Mr. Oaas) Now, my question is, 4 Mr. Papageorge -- 5 MR. OAAS: And we can banter back and forth 6 about this. If you have an objection, just go ahead 7 and state it. 8 Q. (By Mr. Oaas) I just want to know whether 9 or not you yourself issued any warnings directly to 10 users or consumers of products that contained PCBs, for 11 instance, like the Montana Department of Fish, Wildlife 12 and Parks? 13 MR. MILLER: You -- him personally? 14 MR. OAAS: Him personally. 15 MR. MILLER: Okay. Because I -- that -- 16 that's fine. 17 Q. (By Mr. Oaas) At -- in the capacity as 18 Manager of Environmental Control or in your capacity of 19 Director of Environmental Operations. 20 MR. MILLER: That would include things 21 like -- I just want for clarification -- 22 MR. OAAS: No. You've already stated it. 23 MR. MILLER: Patuxent Research Facility -- 24 MR. OAAS: Do you have an object -- do you 25 have an objection?

Page 281 1 MR. MILLER: Yeah. It's unclear. It's 2 vague and ambiguous when you referred to a category of 3 users, but then you exclude all of those that you know 4 Mr. Papageorge was involved in with meetings day after 5 day after day -- 6 MR. OAAS: Okay. 7 MR. MILLER: -- and the question is -- 8 MR. OAAS: I think jury -- I think the 9 under -- the jury would understand my question. 10 MR. MILLER: I -- I -- I think it's an 11 unfair question. 12 MR. OAAS: You're trying to prevent him from 13 answering it. 14 MR. MILLER: No. I'm trying -- 15 MR. OAAS: Yes, you are. 16 MR. MILLER: I'm trying to get an accurate 17 answer. 18 MR. OAAS: You're trying to prevent him from 19 answering the question Mr. -- 20 MR. MILLER: Miller. 21 MR. OAAS: Yes. Mr. Miller, you're trying 22 to prevent him from answering the question. 23 MR. MILLER: No. I'm trying to get an 24 accurate response. 25 MR. OAAS: Then state your objection and let	Page 283 1 inform the users and potential users? Yes. Through 2 the company organization. They didn't all go out with 3 my signature on it. Thousands of letters. 4 Q. (By Mr. Oaas) Are you referring to the 5 letters that went to your PCB -- your direct PCB 6 customers? 7 A. And the potentials. 8 Q. Okay. 9 A. Anybody that made an inquiry, his name was 10 added to the addressee list. 11 Q. Okay. All right. My question is -- I want 12 to go back to the statement by Mr. Mason where he said 13 we have not issued warnings to all potential users of 14 chlorinated biphenyls. Would you agree with that 15 statement? 16 A. It depends on the timing. 17 Q. Well, I'm talking about as of the date of 18 the letter. 19 A. This one is June of '70 -- 20 Q. June 30, 1970. 21 A. -- and I'm trying to recall -- I don't 22 remember the timing of this letter that I described. 23 Q. Okay. All right. Let's go on to Exhibit 24 65 -- 65A, excuse me. 25 A. I have read the exhibit.
Page 282 1 him answer the question. That's the way the process 2 works. 3 MR. MILLER: It's an unfair question. It's 4 vague and ambiguous and it excludes a whole host of 5 communications. 6 Q. (By Mr. Oaas) Do you -- did you understand 7 the question? 8 A. I think I do. 9 Q. Okay. 10 A. I was involved in composing a letter which 11 was eventually mailed to all users and potential users, 12 but -- 13 Q. Are you talking about the letter that you 14 sent to -- 15 MR. MILLER: He's not done with his 16 response, Torger. 17 Q. (By Mr. Oaas) Go ahead -- 18 MR. MILLER: Please let him finish. 19 Q. (By Mr. Oaas) Go ahead and finish. I 20 apologize if I cut you off. 21 MR. MILLER: You did. 22 A. I'm trying to recall the past here. There 23 was a letter prepared which was intended to be sent to 24 all users and potential users describing the total PCB 25 situation. So when you asked me did we -- did we	Page 284 1 Q. Okay. Have you seen that before, 2 Mr. Papageorge? 3 A. I recall it, yes. 4 Q. Okay. 5 A. In fact, I received a -- it indicates I 6 received a copy. 7 Q. Okay. And the date of this exhibit is July 8 29, 1970, correct -- 9 A. '71. 10 Q. -- excuse me -- '71. And it's authored by a 11 Willis S. -- S. Clark. Can you identify who he is? 12 A. He's a member of the marketing group with 13 the plasticisers group stationed in St. Louis. 14 Q. All right. And as I read this -- this memo, 15 it -- it -- it indicates that Monsanto was aware that 16 one of its customers was importing -- importing 17 Japanese PCBs? 18 A. That's the implication, yes. 19 Q. And the customer was named Sonnenborn, is 20 that correct? 21 A. Yes. 22 Q. Okay. All right. And I -- the first 23 paragraph of the letter indicates that -- and I'm 24 referring to the last sentence where it reads however, 25 if it comes to light that some companies are importing

1 Japanese PCBs, the pressure to cease and desist will be
2 enormous. Do you see what I'm reading there?

3 A. Yes.

4 Q. This -- this letter appears to indicate that
5 Monsanto was concerned about the fact that some of its
6 customers were importing Japanese PCBs?

7 A. Well, would you define the word concerned?
8 I --

9 Q. Just in its general common --

10 A. -- just --

11 Q. -- sense understanding?

12 A. Just understanding?

13 Q. Yeah.

14 MR. MILLER: You mean worried about it?

15 MR. OAAS: Yeah.

16 A. Not necessarily. They were -- we were
17 convinced that eventually the Japanese would back off.

18 Q. (By Mr. Oaas) Okay. I'm gonna -- I'm gonna
19 read the second paragraph into the record. It says
20 please do not misunderstand the intent of these
21 comments and please be very careful not to give
22 Sonnenborn the wrong impression. Monsanto has no
23 intention of disclosing the names of any organizations
24 who are importing PCBs. We have withstood such
25 pressures in the past, and I trust we will continue to

1 do so. Is it your understanding that that was
2 Monsanto's policy at the time this letter was written?

3 A. That's right, yeah.

4 Q. Okay. You were familiar with that policy?

5 A. I became familiar with it eventually, yes.

6 Q. If somebody from the U.S. Government called
7 you up and asked you about PCB imports, you wouldn't
8 disclose any information to them?

9 MR. MILLER: Who? Mr. Papageorge?

10 MR. OAAS: Mr. Papageorge.

11 A. Yeah, I wouldn't.

12 Q. (By Mr. Oaas) Okay.

13 A. I would leave that up to the marketing
14 people.

15 Q. This paragraph goes on to say the point is
16 Japanese PCBs are an extremely unreliable source of
17 plasticisers. The government could act very swiftly to
18 eliminate all imports of these products. Incidentally,
19 you may or may not know that Japan has banned the use
20 of PCBs in Japan. They evidently just don't feel too
21 concerned about exports. Did I read that correctly?

22 A. Yes.

23 Q. Okay. Can you tell me what Sonnenborn used
24 PCBs for?

25 A. No, I -- I don't remember.

1 Q. Okay. Can you tell me why Monsanto had the
2 policy not to disclose whether or not any of its
3 customers were importing PCBs?

4 MR. MILLER: Object to the form. Calls for
5 speculation.

6 Q. (By Mr. Oaas) If you know.

7 A. I don't really know. I can only guess.

8 Q. Okay. Go ahead and give me your guess.

9 A. Huh?

10 MR. MILLER: Object to the form.

11 Q. (By Mr. Oaas) Go ahead and give me your
12 guess.

13 MR. MILLER: It's a guess. It's unreliable,
14 and it doesn't speak for the company and it's utter
15 speculation and --

16 Q. (By Mr. Oaas) What was your --

17 A. It's my personal impression.

18 Q. Sure. Right.

19 A. It probably resulted from some unpleasant
20 experiences that the marketing people went through on
21 some other kinds of product changes and all, so --

22 Q. All right.

23 A. -- the decision was to avoid that kind of
24 situation again.

25 Q. All right.

1 MR. MILLER: I move to strike as being
2 speculation.

3 Q. (By Mr. Oaas) Okay. Let's go on to Exhibit
4 66.

5 MR. OAAS: And this is the last exhibit I'm
6 going to refer to, and I'm going to reserve questioning
7 on 67 and 68 when we come back. I think we're gonna --
8 I'm going to finish so Steve can have -- have time to
9 ask his questions.

10 Q. (By Mr. Oaas) Would you just take a minute
11 and look at Exhibit 66, please, Mr. Papageorge?

12 A. I have reviewed this exhibit.

13 Q. All right. Have you seen it before?

14 A. I -- I believe I remember it. I -- I'm
15 listed as a recipient.

16 Q. All right. And it appears -- the title,
17 Report of Meeting With Ministry of Agriculture,
18 Fisheries and Food at Monsanto House, London, 10th
19 March, 1970?

20 A. Yes.

21 Q. Okay. And down at the bottom there's a
22 section that begins with the heading confidential, and
23 a subheading summary. Do you see that?

24 A. I do.

25 Q. I'm just going to read it into the record.

Page 289 1 By leading the discussion away from sensitive areas, by 2 prolonging the further exchange of analytical 3 techniques, and by encouraging debate as to why the PCB 4 residues commonly found in nature more closely 5 resembled pentachlorodiphenyl, we were able to preclude 6 the direct question, quote, who are the main users of 7 PCBs and where are they located, end quote. This was 8 one of the specific questions raised at our previous 9 meetings and repeated in the Ministry of Agriculture's 10 letter dated 30th January addressed to the Chemical 11 Industries Association. Accordingly, we did not name 12 any customers nor did we disclose the NCR paper 13 application. The Ministry are no wiser about the 14 applications for PCB or the major geographical areas of 15 usage than they were after our January meeting. Did I 16 read that correctly? 17 A. Yes. 18 Q. Okay. Was it the official policy of 19 Monsanto in 1970 to prevent the Ministry of Agriculture 20 to learn -- Ministry of Agriculture, Fisheries and Food 21 to learn who were the main users of PCBs and where they 22 were located? 23 MR. MILLER: Object to the form, calls for 24 speculation. It doesn't relate to U.S. operations. 25 A. The position of Monsanto is what you asked?	Page 291 1 EXAMINATION 2 BY MR. BROWN: 3 Q. Mr. Papageorge, my name is Steve Brown, and 4 I represent a company called Columbia Paint in this 5 litigation. Columbia Paint has also been sued along 6 with Monsanto, so we are a -- a defendant in the 7 litigation, also. 8 A. Uh-huh. 9 Q. Have -- have you ever heard of Columbia 10 Paint? To you -- is that a name that's familiar to you 11 at all? It's a company that does business in Montana 12 and Idaho and Washington primarily. 13 A. I have a suspicion I have heard it because 14 it's not totally strange to me, but -- 15 Q. Okay. 16 A. -- it hasn't been often and -- 17 Q. Okay. Do you -- do you recall how you might 18 have heard of it or just a name that sticks out at you 19 from along the way? 20 A. Just came up in general conversations. 21 Q. Okay. Well, what I want to do is just ask 22 you a couple of follow-up questions that came to mind 23 as you were answering questions yesterday and today, 24 and the first ones have to do with some clarifications 25 on terminology. Just so I'm clear and perhaps the
Page 290 1 Q. (By Mr. Oaas) Right. 2 A. Well -- 3 Q. Was it the position of Monsanto -- I'll -- 4 I'll ask it again. Maybe it will be clearer and maybe 5 it's a bad question as far as being non-understandable, 6 but was it the position of Monsanto, as you understood 7 it on March 10th of 1970, that Monsanto did not want 8 the Ministry of Agriculture, Fisheries, and Food in 9 England to know who were the main users of PCBs and 10 where they were located? 11 MR. MILLER: Object to the form, lack of 12 foundation. 13 A. No, it wasn't. 14 MR. OAAS: Okay. Okay. I'm going to stop 15 there because I think it's about quarter after 1:00. 16 And for the record, I'm going to reserve questions that 17 I may have on Exhibit 67 and 68 when we reconvene. And 18 I would like to take about a 30 second break if I may. 19 MR. MILLER: Sure. 20 THE VIDEOGRAPHER: We're off the record at 21 1:19 p.m. 22 (A short break was taken.) 23 THE VIDEOGRAPHER: We are back on the record 24 at 1:30 p.m. starting tape no. 5. 25	Page 292 1 jury, if they ever look at this tape, is clear, when 2 you use the word Aroclor, is that a chemical substance 3 or is that a tradename of Monsanto's? 4 A. Oh. It's a tradename derived from chemical 5 expressions. 6 Q. Okay. 7 A. Aromatic describes chemicals that are like 8 the hexagon of biphenyl. 9 Q. Right. 10 A. Those are called aromatic. 11 Q. Okay. 12 A. Clor comes from chlorine. So the im -- 13 impression that the word Aroclor leaves you with is it 14 -- it's an aromatic organic chemical, hydrocarbon with 15 chlorine. 16 Q. Okay. 17 A. That's where the Ar -- the word Aroclor 18 comes from. 19 Q. Okay. But it is a name that was developed 20 by Monsanto, is that right? 21 A. Yes. 22 Q. Okay. And it's also true, though, that not 23 all Aroclors are PCBs, right? 24 A. That is true. 25 Q. Okay. There are some Aroclors -- I think

1 you mentioned 5460 -- that is not a PCB, it's a
 2 terphenyl, I think you described?
 3 A. Terphenyl.
 4 Q. Okay. Now, we've thrown out a -- you talked
 5 about a number of PCBs, one of them being 1254 and one
 6 of them being 1260. I want to make sure I understand
 7 what that means when -- for instance, Aroclor 1254,
 8 what -- what makes it a 1254?
 9 A. Well, the 12 refers to the two hexagon
 10 rings --
 11 Q. Okay.
 12 A. -- that are connected with one of the
 13 carbons. The two digit number that follows represents
 14 the weight -- or percent by weight of the total
 15 chemical. So 54 is a -- 54 percent of that by weight
 16 is chlorine.
 17 Q. Okay. And then a 1260, 60 percent by
 18 weight --
 19 A. 60 percent.
 20 Q. Okay. And one of the other Aroclors that
 21 I've seen reference to a number of times in the
 22 documents is a 5460. Is that a blend of a 1254 and a
 23 1260 or is that just a -- something else?
 24 A. No. That's the terphenyl --
 25 Q. Right.

1 A. -- the 54, and then 60 percent chlorine.
 2 Q. Okay. So if we see a reference to a 5460,
 3 we can assume that that is not a PCB?
 4 A. Correct.
 5 Q. Okay. One of the other terms that got used
 6 quite a bit the last two days was the word
 7 plasticiser. In Mon -- in -- in your work with
 8 Monsanto, what do you mean when you use the term
 9 plasticiser? Can you describe that?
 10 A. It is an -- an ingredient. Many times it's
 11 a pure chemical, and I use the word ingredient --
 12 sometimes their mixtures that is added to other
 13 chemicals which without this plasticiser would end up
 14 being brittle.
 15 Q. Okay. So is the purpose of adding the
 16 plasticiser to give whatever the product is some added
 17 flexibility -- or added -- flexibility, would that be
 18 accurate or --
 19 A. Yeah. Different degrees of flexibility.
 20 Q. Okay.
 21 A. There's some that are very flexible and some
 22 just give it a little flexing. So the amount of
 23 plasticiser added to that total mixture determines how
 24 flexible the final mixture is.
 25 Q. Do you know what -- well, first of all, I

1 understand from -- from some of the documents and from
 2 the way you answered questions that PCBs have been used
 3 as plasticisers to give flexibility to paint, for
 4 example. Do you know when that first -- first came up
 5 or how long that's been -- that was done?
 6 A. I have no idea. It's --
 7 Q. Okay.
 8 A. It started long ago.
 9 Q. Okay. But that was one of the things that
 10 Monsanto sold its PCB products for was to -- as a
 11 paint plasticiser?
 12 A. Yes.
 13 Q. And were there a variety of different
 14 Aroclors that were used as plasticisers or was it just
 15 a few?
 16 A. Well, there was a variety. In every case
 17 they were, of course, liquids, and it ranged from the
 18 21 percent, 1221, through the 1232, 1242, 1250, 1254,
 19 1260. They were all the type of material that would
 20 give flexibility, and it depended on what the end user
 21 was looking for. Was he looking for something very
 22 fluid or something very tarry, let's call it, very
 23 inflexibility.
 24 Q. Viscus?
 25 A. Very viscous.

1 Q. Okay.
 2 A. Uh-huh.
 3 Q. And as -- just so I'm clear, as the
 4 percentage of chlorine goes up, the Aroclor becomes
 5 more viscous, more thick, is that correct?
 6 A. Yes.
 7 Q. Okay. Now, I want to refer you to some of
 8 the documents that you answered questions about and
 9 just ask you some follow-up questions if I could.
 10 A. Sure.
 11 Q. The first one is Exhibit No. 9, if you could
 12 find that.
 13 A. I have it.
 14 Q. And on the second page of that toward the
 15 bottom -- and I -- I recognize that this is a document
 16 that was put together in 1955, and you may not have had
 17 any involvement with this document, putting it
 18 together, did you?
 19 A. That's true.
 20 Q. Okay. But on the second page toward the
 21 bottom it -- it talks about the rate of migration of
 22 Aroclors in dry paint. Do you see that in the very
 23 last paragraph?
 24 A. Yes, I found -- I see the word migration
 25 now. I see.

Page 297 1 Q. From what you know about Aroclors as they're 2 used in plasticisers and paint, once the paint dries, 3 is it possible for the Aroclor to migrate out of the 4 paint -- or what would have to happen for it to migrate 5 out of the paint? 6 A. You'd have to heat it -- 7 Q. That's one way? 8 A. -- to mobilize it to help release it from 9 its surroundings, so to speak. I can't think of any 10 other way. 11 Q. So based on what you know about Aroclors, 12 were they intended to be relatively stable once -- once 13 the paint dried if they were used as a paint 14 plasticiser? 15 A. Definitely. Yes. 16 Q. Okay. What happens if a -- if a surface is 17 painted with Aroclor containing paint, and then it's 18 painted over again with another type of paint? Is it 19 possible for the Aroclor to migrate that way -- or to 20 be re -- to be somehow re-suspended in any way? 21 MR. MILLER: Let -- let me just object to 22 the form of the question. It may call for speculation, 23 and there's no foundation necessarily. 24 Q. (By Mr. Brown) Okay. Well, let me -- let 25 me -- let me maybe start over again. You're familiar	Page 299 1 Q. Okay. Okay. Well, that helps. 2 The next document is Exhibit No. 23. 3 A. I have it. 4 Q. If you could turn to page 8. The page 5 numbers -- page numbers are on the bottom. 6 Well, first of all, are you -- are you 7 familiar with this document? Is this -- you might have 8 to look at the first page to see that. 9 A. Well, I recall seeing this document. 10 Q. It appears to be dated May of 1957. What -- 11 A. Yeah. 12 Q. Were you with Monsanto in May of 1957? 13 A. Yes -- 14 Q. Okay. 15 A. -- but I became aware of this document in 16 1970 -- late -- late '60s at best. 17 Q. Now, what's the purpose of this document, to 18 the best of your knowledge? 19 A. Customer information. 20 Q. This is a marketing kind of -- 21 A. It's -- it's a promotion document. 22 Q. Okay. Okay. So if you flip to page 8, and 23 there's a table there. And do you see where it says 24 formula 3 and then it has swimming pools in 25 parentheses. This is in the --
Page 298 1 that paint was used with Aroclors in them, correct? 2 A. Yes. 3 Q. And if that paint surface was then 4 re-painted with something else that didn't have 5 Aroclors in it, is it -- do you know whether it's 6 possible for the Aroclors to somehow migrate that way? 7 MR. MILLER: Same -- same objections. There 8 may -- no -- be no foundation here. You haven't 9 established that. 10 A. It's possible that the new coating, the new 11 paint -- 12 Q. (By Mr. Brown) Right. 13 A. -- has an ingredient in it that's a solvent 14 for the old coat -- 15 Q. Okay. 16 A. -- and it could soften that old coat and 17 release the PCB, and that PCB could migrate into the 18 new coat. 19 Q. And are there certain chemical solvents that 20 would be more likely to do that than others? 21 A. It all depends on the principle ingredient 22 in that first coat -- 23 Q. Okay. 24 A. -- and what it responds to, like benzene and 25 ethyl alcohol, and all kinds of other chemicals.	Page 300 1 A. I see that. 2 Q. Okay. Can you -- can you describe what that 3 purpose -- if you know, do you know what the purpose of 4 that table is? 5 A. The purpose of what? 6 Q. Of the table there. It -- it appears to -- 7 it says table 6, paint formulation for alkaline 8 surface. Do you know whether that is designed to help 9 a customer with some formulations? 10 MR. MILLER: Object to the form. 11 A. The -- the intent is to have the reader of 12 this sales bulletin get some idea of what has been used 13 by others. 14 Q. (By Mr. Brown) Okay. 15 A. And it's really almost a recipe. 16 Q. Right. 17 A. How much -- how much of each of these 18 ingredients do you add to that mixture? It still 19 doesn't tell you when do you add it and how much do you 20 stir it up or how much do you heat it and all of the 21 other steps in the process. 22 Q. Okay. So where it says Aroclor 1254 in the 23 column under swimming pools -- 24 A. Uh-huh. 25 Q. -- do you see where it says 4.4 there?

1 A. I'm sorry?
 2 Q. Do you see where it says --
 3 A. Yes, I see that. Uh-huh.
 4 Q. Is it correct to say that that is
 5 Monsanto's, at least -- I don't know if we'd really
 6 call it an instruction or if -- it's -- basically, does
 7 that 4.4 mean that's 4.4 percent by weight?
 8 A. Yes. It all adds up to 100 percent at the
 9 bottom --
 10 Q. Okay.
 11 A. -- by weight. This is all by weight.
 12 Q. Okay. And I guess what I'm wondering is if
 13 somebody followed this recipe, for lack of a better
 14 word, and added 4.4 percent Aroclor --
 15 A. Uh-huh.
 16 Q. -- is that what Monsanto was kind of telling
 17 the customer was necessary to give the paint a -- the
 18 plasticising properties that -- that are being
 19 marketed?
 20 MR. MILLER: Object to the form. There's no
 21 foundation for this document.
 22 A. It's not necessarily the only mixture that
 23 will fit that category, formula 3, but this is an
 24 example.
 25 Q. (By Mr. Brown) Okay. Thank you. I assume

1 then -- would it be fair to say that at some point
 2 there is a -- it's more of a range, that there might be
 3 a low end of the range where you just -- there's not
 4 enough Aroclor to really add any value to the paint and
 5 there's a high end of the range where it just doesn't
 6 make sense to add anymore? Is that -- would that be
 7 fair to say?
 8 A. That is possible, yes.
 9 Q. Okay.
 10 A. Very possible, uh-huh.
 11 Q. And then would it be fair to say, also, this
 12 4.4 somehow falls into that range?
 13 A. Yes.
 14 Q. Okay. Do you know how Monsanto -- what it
 15 did to derive this table?
 16 A. Not specifically, but it had to come from
 17 either Monsanto laboratory studies or customer
 18 feedback.
 19 Q. Okay. Do you know, based on your knowledge
 20 of Aroclors, at what low end would it no longer make
 21 sense -- what -- what the low end of the range would be
 22 just roughly where Aroclors wouldn't give paint
 23 plasticising properties anymore?
 24 A. I -- I don't know.
 25 Q. Okay. But you would assume that there is

1 some low end of the range? In other words, if it's,
 2 let's say, .1 percent, would it -- if someone added .1
 3 percent of Aroclor, just dribbled a little bit in the
 4 paint, would that have any plasticising properties?
 5 A. Well, your guess is as good as mine, but I
 6 would suspect that that would be like using a dirty pot
 7 to put it in.
 8 Q. Okay. And -- and let me give you some
 9 foundation for why I'm asking the questions. In this
 10 lawsuit, it involves a fish hatchery in Montana, and
 11 there's been a variety of paint samples taken. Some
 12 samples have a lot of PCBs in them. Some have just a
 13 little bit of PCBs in them. And the reason I'm asking
 14 the question is -- or what I'm trying to find out is if
 15 you had a paint sample that had a small amount of PCBs
 16 in it, would that more likely be because it was
 17 formulated that way or because it got there some other
 18 way or do you know?
 19 A. If the sample that you looked at to get the
 20 amount --
 21 Q. Right.
 22 A. -- was, say, a -- a flake of that paint, the
 23 chances are good that that's what it -- originally, but
 24 if your sample is -- what's the word I want? If the
 25 sample is not typical of what's on that surface

1 initially, you're going to get the wrong impression.
 2 And by -- and a sample that's not typical, that would
 3 have to be exposed to different -- other materials to
 4 change the recipe, if you will.
 5 Q. Okay. Okay. That helps. Okay. If you
 6 look at document No. 26, do you remember that document
 7 from --
 8 A. Yes --
 9 Q. -- earlier?
 10 A. -- I do, uh-huh.
 11 Q. Okay. And the only question I have about
 12 that is it discusses some levels in there at which fish
 13 died, and it says levels of 1 to 10 ppm for 1242 and
 14 1254. Do you see that?
 15 A. I do.
 16 Q. Do you know whether that is a concentration
 17 in the water or in the concentration of something that
 18 these fish might have ingested? In other words,
 19 ingested as food. Can you tell from that document?
 20 A. The document really doesn't clarify that
 21 except that the studies are always made in the
 22 contaminated water --
 23 Q. Okay.
 24 A. -- so with the -- that amount of PCBs
 25 present, 1 to 10 parts per million, that would imply

Page 305 1 that the PCBs were pretty well dispersed in that water 2 either by agitation or movement of the aquarium in 3 which the -- the fish are confined; otherwise, that -- 4 eventually that PCB just settles to the bottom it's so 5 heavy. 6 Q. Okay. So your assumption then is that this 7 number refers to concentrations in the water? 8 A. In the water. 9 Q. Okay. If you could look at document No. 33, 10 Exhibit 33. Do you see the paragraph that starts PCB 11 is used in certain types of marine paints? 12 A. I see it. 13 Q. And then the next sentence says the 14 leachability of these paints is so low -- and it goes 15 on. Is it your understanding that the leachability of 16 PCB containing paints is very low? 17 A. Yes. 18 Q. And why is that? Chemically, what is it 19 about PCBs in paint that makes the leachability low? 20 A. Well, first of all, PCBs are not soluble in 21 water, so it's difficult to extract them out of the -- 22 the rest of the coating formulation, and -- 23 Q. When you say PCBs are not soluble in water, 24 just from a laymen's perspective, just somebody sitting 25 in a jury, what -- what do you mean by that?	Page 307 1 Q. Okay. 2 A. There's -- it goes to someone else who makes 3 that paint. 4 Q. Okay. And then if you could go to Exhibit 5 No. 40. Do you know what year this document was 6 drafted? 7 A. I thought I saw -- there's a note here of 8 1945. 9 Q. Okay. And do you -- do you know what the 10 purpose of this document was? 11 A. It's, again, advertising to the customer. 12 Q. Okay. It's a Monsanto document to try and 13 market material to its customers? 14 A. Yeah, to -- to advertise it, to promote it. 15 Q. Okay. And if you go to page 18 of that 16 document, and do you see the section that says paints 17 and varnishes? It's down in the lower right-hand -- in 18 the right-hand column, page -- page 18. 19 A. 18? 20 Q. Yeah. Sorry. 21 A. Okay. Paints and varnishes, I see it. 22 Q. And then if you flip over to page 19, it 23 talks about Aroclors 4465 and 5460. I had asked you 24 some questions a few minutes ago about Aroclor 5460. 25 What is Aroclor 4465?
Page 306 1 A. Well, let me try to think of an example. Of 2 course, you know sugar is soluble in water. 3 Q. When you mix it up, it dissolves? 4 A. It gets -- you don't see it, but it's in 5 there. 6 Q. Right. 7 A. Alcohol, if you pour it in water, it 8 dissolves. It gets diluted, spread out. With PCBs, 9 they don't mix in water. 10 Q. Okay. So if the PCBs are used in paint, one 11 of the things that -- is it fair to say that one of the 12 things that makes the paint attractive to a -- somebody 13 who is using the paint is the fact that the PCBs are 14 going to stay there and give it the qualities -- 15 it's -- it's not going to wash away with water? Is 16 that fair to say? 17 A. Exactly right. 18 Q. Okay. 19 A. That's the primary benefit. 20 Q. And do you know, is that one of the reasons 21 why, at least for a time, Monsanto marketed PCBs as a 22 swimming pool paint is because, obviously, it's going 23 to be used in water and it was -- 24 A. Well, I was not aware that Monsanto ever 25 marketed PCBs as a swimming pool paint.	Page 308 1 A. It's a mixture, as I remember, of Aroclor 2 1242 plus Aro -- Aroclor 5460. 3 Q. Okay. So would 4465 be a -- a PCB? 4 A. It's got a PCB ingredient in it. 5 Q. It does? 6 A. Uh-huh. 7 Q. Okay. And then if you flip back to page 14, 8 a few pages back. In that -- the -- in the first 9 column there's a -- the second sentence says -- it 10 talks about Aroclors. It says the degree of 11 flexibility imparted by the Aroclors diminishes 12 progressively in order of liquid Aroclor. 13 A. Where? 14 Q. It's the second sentence in the first 15 column. Maybe just read that sentence. 16 A. Okay. Uh-huh. 17 Q. What I guess I want to understand is, just 18 so, you know, we can all understand how Aroclors work 19 is, as the percentage of chlorine goes up, does the 20 hardness of the -- the chemical also go up, increase? 21 A. Of the PCB? 22 Q. Yeah. 23 A. Yes. 24 Q. So -- 25 A. It's not so much hardness as it is

1 viscosity.
2 Q. Okay. So when this sentence -- the next
3 sentence says the hardness of the resulting
4 compositions increases, what you're saying is that it
5 becomes thicker?

6 A. The hardness of the final product --

7 Q. Okay.

8 A. -- that includes other ingredients other
9 than the PCBs.

10 Q. Okay. And why would that be attractive to
11 someone who is using these products, for instance,
12 as -- as a paint application?

13 A. A paint application -- an example would
14 be -- let's use the road lane paint.

15 Q. Right.

16 A. You want something that's long lasting;
17 therefore, you look for what we might at this point
18 call the harder type paint. It's -- it's thicker. It
19 takes a little more effort to apply, but the sought-
20 after advantage is that it will last longer. It will
21 just take that much longer for the rubber tires of cars
22 to rub it off and --

23 Q. So it won't -- won't have to be re-painted
24 as often?

25 A. That's true.

1 Q. Okay.

2 A. That's the purpose.

3 Q. Now, I'm going to have you go to Exhibit No.
4 49. And on this one you were asked some questions
5 about pages 1 through 5 and the summary, but I'm
6 actually going to ask you a couple of questions about
7 page 19 of this. Do you see the -- paragraph no. 6
8 where it says coatings there?

9 A. Yes.

10 Q. Okay. And in that paragraph it identifies
11 two customers of which I assume are Monsanto customers,
12 two large customers. Do you have any personal
13 knowledge of those two customers as being customers of
14 Monsanto?

15 A. Personal in what way?

16 Q. I mean, based on your work with the Monsanto
17 Company, do you have any knowledge of the Sherwin-
18 Williams Company and Koppers buying a large quantity --

19 A. I was made aware of that eventually, yeah.

20 Q. Okay. And so do you believe it to be true
21 that the biggest direct customers in the coatings
22 market were Sherwin-Williams and Koppers?

23 A. Yeah, there's -- there's no reason for me
24 to --

25 Q. Disagree with that?

1 A. -- to disagree with it.

2 Q. Okay. And the 1.3 M pounds, I assume, does
3 that mean 1.3 million pounds, from what -- if you know?

4 A. It's -- M with a bar on top is million.

5 Q. Okay. And that's what you understand to be
6 1.3 million pounds?

7 A. Yes.

8 Q. Okay.

9 A. The first line there, uh-huh.

10 Q. So just so I'm clear, would you understand
11 the first sentence to mean in 1968, Monsanto sold 1.3
12 million pounds to the coatings market, and that's --

13 A. Yes.

14 Q. Okay. The next document I would like you to
15 take a look at is Exhibit No. 55, and I think it's
16 right by your right hand there. If you look at page 21
17 of that document -- and what I'm using for page numbers
18 is -- it's numbered a couple different ways -- the
19 actual page number that's in the lower left side. It's
20 probably the original page number. If you look at page
21 21.

22 A. I find it -- I found it.

23 Q. Okay. And this is similar to a table we
24 were talking about a couple of minutes ago. Is this
25 also -- well, first of all, is this document also a

1 marketing document that was --

2 A. Yes.

3 Q. Used? Okay. And it's -- on the cover it
4 says Technical Bulletin No. PL-306. That's a Monsanto
5 document that's given to customers, is that right?

6 A. Yes.

7 Q. During the 1960s?

8 A. Yes.

9 Q. And I think I -- I recall your testimony is
10 you don't know how long in the 1960s this may have been
11 used, but it was used -- you do know it was used
12 sometime during the 1960s?

13 A. Correct.

14 Q. Okay. And what is the general purpose of
15 this document? Is it --

16 A. I'm sorry?

17 Q. The general purpose of the -- the overall
18 document, what is it for?

19 A. It's to promote the use of the Aroclor
20 products to a potential customer or to a -- a customer
21 who's already using one of the Aroclors, but could
22 replace it with another or a blend of a couple
23 Aroclors.

24 Q. Okay.

25 A. It all depends on how his workers or

Page 313 1 employees evaluate this information. 2 Q. Okay. So if you look at the table on page 3 21 there, is this also just an example that Monsanto 4 was providing potential customers of a kind of a recipe 5 for different types of paint formulations? 6 A. Yes. 7 Q. Okay. And if a customer wanted to deviate a 8 little bit from that, that's certainly up to the 9 customer, right? 10 A. Certainly. Yes. 11 Q. And again, do -- do you know what Monsanto 12 did to produce these -- this example? 13 MR. MILLER: Object to the form. Calls for 14 speculation. 15 A. I do not know how they came up with these -- 16 I'm calling them recipes. 17 Q. (By Mr. Brown) Okay. Now, if you look at 18 Exhibit No. 65 -- are you there? 19 A. I have it, yes. 20 Q. Okay. And as I understand this document, 21 it's a letter from Monsanto that went to Congressman 22 Ryan in about -- at the end of June of 1970. Is that 23 your understanding? 24 A. Yes. 25 Q. Okay. And at -- at the bottom of the first	Page 315 1 painted surface. It was the removal from that painted 2 surface and transferring it out, such as car tracks on 3 a traffic lane and moving it away from its original 4 position to some other uncontrollable situation. 5 Q. Do you know if Monsanto had any specific 6 concerns about paint used in swimming pools that led to 7 that decision? 8 A. Well, yes, because even in that type of 9 application the -- the surface is abraded either in the 10 actual water action or the cleaning of the pool. 11 Q. And when you say abraded, you mean -- I 12 assume you mean paint chipping off and -- 13 A. Sep -- separating it from its original 14 surface. 15 Q. Okay. Not the PCBs coming out of the paint, 16 but the paint -- 17 A. No, no. It's the whole paint chip or -- 18 or -- or mixture. 19 Q. Okay. Was Monsanto aware of paint -- or 20 were you aware in your work with Monsanto of paint 21 being used in fish hatcheries? 22 A. I never personally heard of that, but -- 23 Q. Okay. Were you aware of -- I take it you 24 wouldn't be aware then of paint used in fish hatcheries 25 where the hatchery walls were scraped and the chips of
Page 314 1 page in paragraph 1 it seems to indicate that Monsanto 2 made a decision that as of August 30th, what I assume 3 to be 1970, that Monsanto was no longer going to be 4 selling PCBs for plasticiser applications. Is that 5 your understanding? 6 A. Yes. 7 Q. Okay. And to the best of your knowledge, is 8 that approximately when Monsanto did stop selling PCBs 9 for plasticiser applications? 10 A. Yes. 11 Q. Are you familiar with what the reason was 12 why Monsanto stopped selling PCBs for plasticiser 13 applications? 14 A. The principle reason was that the 15 plasticiser applications were open to the environment. 16 They were not contained in equipment, for example, like 17 hydraulic fluids or heat transfer fluids, but these 18 were applications that resulted in a product that found 19 its way out there in the environment. Imme -- 20 immediately it's used. 21 Q. Okay. Do you know whether Monsanto had any 22 specific concerns with dry paint -- PCBs migrating out 23 of dry paint as one of the reasons for discontinuing 24 the sale? 25 A. It wasn't the migration of PCBs from a	Page 316 1 paint were washed into a river or anything like that? 2 A. No. 3 Q. Okay. If you did know of something like 4 that, would that be a concern to you? 5 A. Oh, yes. 6 Q. Would you -- would -- would you regard that 7 as something that's not really something Monsanto would 8 expect their customers to do? 9 MR. MILLER: Object -- object to the form. 10 There's no foundation. 11 A. Well, it depends again on the timing. Once 12 we found out how to analyze for PCBs and found them 13 present in the environment, then that would not have 14 been acceptable, but if you go back to 1940, the 15 Aroclors were considered a very attractive product, 16 doing a wonderful job, no problems, but as we picked up 17 more knowledge, you begin to see the problems. 18 Q. (By Mr. Brown) Okay. The last question I 19 want to ask you. In your work as an environmental 20 manager, would -- would you agree that the -- the -- 21 kind of the state of awareness of environmental 22 contamination -- people became more aware of that as a 23 concern over time as -- especially during the 1970s? 24 That's when people became really aware of environmental 25 contamination kinds of issues?

Page 317 1 MR. MILLER: Object to the form. 2 A. That continues to this day. 3 Q. (By Mr. Brown) Right. But is that 4 something that evolved over time, in other words? 5 A. Yeah. The more information people or -- or 6 societies get, the more sensitive they become to some 7 of these things that at one time might have been 8 perceived as harmless. 9 Q. Okay. So -- I'm sorry. I have to ask one 10 more follow-up. So something that might have been 11 acceptable as a practice in 1960 as more information 12 was generated might not be acceptable anymore in 1970? 13 Is that fair to say from an environmental management 14 perspective? 15 A. Yes. That's expectable. 16 MR. BROWN: Okay. Great. That's all of the 17 questions I have. Thank you. 18 THE WITNESS: Thank you. 19 MR. MILLER: If I can, we're -- we're going 20 to break in a few minutes and reconvene, but I just -- 21 I just wanted to start with five minutes worth of 22 questions, if that's all right with everybody. I don't 23 see the problem with that. 24 25	Page 319 1 been reported by these researchers in Europe? 2 A. Definitely -- 3 MR. OAAS: Object to the form of the -- 4 A. Yes. 5 MR. OAAS: -- object to the form of the 6 question as leading. 7 Q. (By Mr. Miller) And is it your 8 recollection, Mr. Papageorge, that some of that work 9 included obtaining some of the most sophisticated 10 analytical tools then available at the time for that 11 purpose? 12 MR. OAAS: Object to the form of the 13 question as leading. 14 MR. MILLER: I'll -- I'll -- you can -- I'll 15 accept a running objection to your leading. 16 MR. OAAS: That's not allowed in Montana. 17 You have to make them to the question. 18 MR. MILLER: I'm stipulating to the fact 19 that you don't have to keep doing it. 20 MR. OAAS: I can't do it. 21 Q. (By Mr. Miller) All right. Well, then 22 you're going to have to wait until this counsel here 23 makes a redundant objection before you answer these 24 questions. 25 A. Okay.
Page 318 1 EXAMINATION 2 BY MR. MILLER: 3 Q. Mr. Papageorge, my name is Adam Miller. I 4 represent Monsanto Company. For our purposes today, I 5 just want to ask you a few questions relating to some 6 of the topics that were addressed by other counsel 7 today and yesterday. From what I understand, 8 Mr. Papageorge, is it your recollection that issues 9 associated with the environmental persistence of PCBs 10 really started with the information that came overseas 11 from Sweden? 12 MR. OAAS: Object to the form of the 13 question as leading. 14 A. Yes. 15 Q. (By Mr. Miller) And were -- was that 16 information in part information obtained from the 17 Swedish -- Swedish res -- researchers that you 18 identified, Jensen and Widmark? 19 MR. OAAS: Object to the form of the 20 question as leading. 21 A. Yes. 22 Q. (By Mr. Miller) And Mr. Papageorge, was it 23 your -- is it your recollection that when that 24 information was obtained by Monsanto, that Monsanto 25 engaged in a series of activities to verify what had	Page 320 1 Q. It's gonna -- it's gonna mean that we're 2 going to take a few more minutes to finish this, but 3 that's what counsel has told me he intends to do. 4 Were the analytical tools that we just 5 mentioned available in the United States at the time? 6 MR. OAAS: Object to form of the question as 7 leading. 8 MR. MILLER: It's not leading. 9 Go ahead. 10 A. No. 11 Q. (By Mr. Miller) How did Monsanto obtain the 12 analytical tools it used to verify the information that 13 was coming overseas from researchers like Jensen and 14 Widmark? 15 A. Monsanto contacted Drs. Widmark and Jensen 16 and asked them where they purchased their equipment, 17 and Monsanto placed an order, and as I remember, it was 18 a German company, and we had to wait several months 19 before it was delivered. 20 Q. And around that time -- well, have you ever 21 heard of a gentleman by the name of Risebrough? 22 A. Yes. 23 Q. And was he, to your recollection, a 24 researcher from the University of California? 25 A. Yes.

1 Q. And was he also publishing around this time
2 reports of the environmental presence of PCBs in the
3 United States?

4 A. Yeah, but the timing is -- he was a little
5 bit behind. I don't know what equipment he used, but I
6 met with Dr. Risebrough at Berkeley.

7 Q. And did you also meet with Dr. Widmark in
8 Sweden?

9 A. Yes.

10 Q. And did you exchange during your meetings
11 with Dr. Risebrough and Dr. Widmark the analytical
12 information that Monsanto had been developing?

13 MR. OAAS: Object to the form of the
14 question as leading.

15 A. Yes, we did.

16 Q. (By Mr. Miller) And did you attempt to
17 learn as much as you could from those researchers about
18 the work that they were doing?

19 MR. OAAS: Object to the form of the
20 question as leading.

21 A. Yes.

22 Q. (By Mr. Miller) And would you
23 characterize -- how would you characterize that
24 exchange of information? Was it in the spirit of
25 mutual cooperation?

1 MR. OAAS: Object to the form of the
2 question as leading.

3 A. Very much so. To me, it was a pleasant
4 surprise how willing they were to exchange ideas.

5 Q. (By Mr. Miller) And was Monsanto willing to
6 exchange ideas with those researchers?

7 A. Very much.

8 Q. You had indicated that the analytical tools
9 weren't available in the United States. Did Monsanto
10 work as quickly as it could to obtain the analytical
11 tools it needed to assess the environmental persistence
12 of PCBs?

13 MR. OAAS: Object to the form of the
14 question as leading.

15 A. For the first piece of equipment that we
16 needed, yes. Later on, companies in this country
17 started replicating, let's call it, the equipment, and
18 improving on it, also.

19 Q. (By Mr. Miller) To your knowledge,
20 Mr. Papageorge, were the techniques that were used by
21 Risebrough and Jensen and Widmark for assessing the
22 persistence or presence of PCBs in the environment
23 off-the-shelf kind of techniques?

24 MR. OAAS: Object to form of the question as
25 leading.

1 A. I don't know what you mean by off-the-shelf.

2 Q. (By Mr. Miller) In other words, did these
3 researchers and did Monsanto have to develop the
4 analytical techniques to identify and quantify PCBs in
5 the environment?

6 MR. OAAS: Object to the form of the
7 question as leading.

8 A. Yes.

9 Q. (By Mr. Miller) Your answer was yes to that
10 question?

11 A. Yes.

12 Q. And that's the kind of information, I take
13 it, that you would share with the researchers in
14 California and in Europe about the development of
15 analytical techniques?

16 MR. OAAS: Object to the form of the
17 question as leading.

18 A. Correct.

19 Q. (By Mr. Miller) All right. You began your
20 work in St. Louis in -- I think you mentioned early
21 January of 1970?

22 A. Yes.

23 Q. And by that time, had Monsanto hired folks
24 like Scott Tucker, a Ph.D. in analytical chemistry to
25 help develop and implement the techniques that we've

1 just talked about?

2 MR. OAAS: Object to the form of the
3 question.

4 A. Yes.

5 Q. (By Mr. Miller) Go ahead and answer again.

6 A. Yes.

7 Q. And also you had mentioned that shortly
8 after you began work in St. Louis that you assisted in
9 the development of letters that were sent to customers?

10 MR. OAAS: Object to the form of the
11 question as leading.

12 A. Yes.

13 Q. (By Mr. Miller) Okay. And that you had
14 developed letters that went to potential customers of
15 Monsanto's plasticiser uses?

16 A. Yes.

17 Q. And did the letters that you developed for
18 customers and potential customers also include
19 customers and potential customers of Aroclors for all
20 kinds of uses, not just plasticiser uses?

21 MR. OAAS: Object to the form of the
22 question as leading.

23 A. The subjects included in those letters tried
24 to cover the field, but the intent in both types of
25 letters was the same.

1 Q. (By Mr. Miller) Was the intent to provide
2 customers and potential customers of Aroclors the
3 latest information available to Monsanto and in the
4 scientific press about the emerging science of finding
5 PCBs in the environment?

6 MR. OAAS: Object to the form of the
7 question as leading.

8 A. Yes.

9 Q. (By Mr. Miller) And did you, in the course
10 of your work in the early 1970s in the preparation and
11 dissemination of those letters, send out information to
12 customers and potential customers about toxicology
13 studies and studies that were being conducted around
14 the world about finding PCBs in the environment?

15 MR. OAAS: Object to the form of the
16 question as leading.

17 A. Yes.

18 Q. (By Mr. Miller) And is it your
19 recollection, Mr. Papageorge, that those letters went
20 out in early 1970, shortly after you started your work
21 at Monsanto in St. Louis?

22 MR. OAAS: Object to the form of the
23 question as leading.

24 A. When you say early, I'm not talking about
25 January, February, but --

1 Q. (By Mr. Miller) Well --

2 A. -- in the first six months or so, as I
3 remember.

4 Q. Well, you -- well, we'll -- we'll cover this
5 next time. I'll show you the specific letters, but it
6 wouldn't surprise you if you had letters dated February
7 of 1970?

8 MR. OAAS: Object to the form of the
9 question as leading.

10 A. It wouldn't surprise me, but --

11 Q. (By Mr. Miller) All right. I wanted to ask
12 you -- during the course of 1970, before Monsanto
13 voluntarily withdrew the manufacture and sale of
14 Aroclors as plasticisers, were you, Mr. Papageorge,
15 communicating with individuals in government about the
16 use of PCBs and their environmental persistence?

17 MR. OAAS: Object to the form of the
18 question as leading.

19 A. Yes.

20 Q. (By Mr. Miller) Were your communications
21 with organizations like the Bureau of Commercial
22 Fisheries in the United States?

23 MR. OAAS: Object to the form of the
24 question as leading.

25 A. Yes.

1 Q. (By Mr. Miller) Were you communicating with
2 organizations like the Federal -- the Food and Drug
3 Administration?

4 MR. OAAS: Object to the form of the
5 question as leading.

6 A. Yes.

7 Q. (By Mr. Miller) Were you communicating with
8 the Federal Water Pollution Control Administration?

9 MR. OAAS: Object to the form of the
10 question as leading.

11 A. Yes.

12 Q. (By Mr. Miller) Which was -- is now a part
13 of the United States Environmental Protection Agency?

14 A. That is correct.

15 MR. OAAS: Objection to the form of the
16 question as not being a question.

17 MR. MILLER: There's a -- Chris will have a
18 question mark after that sentence in the record so
19 it -- it will read as a question.

20 Q. (By Mr. Miller) Were you communicating with
21 organizations like the U.S. Department of Interior
22 during the course of 1970 about the environmental
23 persistence of PCBs?

24 MR. OAAS: Object to the form of the
25 question as leading.

1 A. Yes.

2 Q. (By Mr. Miller) Were you communicating with
3 organizations like the Fish Pesticide Research
4 Laboratory in Columbia, Missouri during that time
5 period?

6 MR. OAAS: Object to the form of the
7 question as leading.

8 A. Yes.

9 Q. (By Mr. Miller) Were you communicating with
10 organizations like the Water Chemistry Laboratory at
11 the University of Wisconsin?

12 MR. OAAS: Object to the form of the
13 question as leading.

14 A. Yes.

15 Q. (By Mr. Miller) And organizations like the
16 Fisheries Research Board of Canada during that time
17 period, Mr. Papageorge?

18 MR. OAAS: Object to the form of the
19 question as leading.

20 A. Yes.

21 Q. (By Mr. Miller) Would that also be true for
22 an organization called the Southeast Water
23 Laboratory --

24 MR. OAAS: Object to the form of the
25 question as leading.

1 A. Yes.

2 Q. (By Mr. Miller) -- which is now part of the
3 United States Environmental Protection Agency?

4 MR. OAAS: Object to the form of the
5 question as leading.

6 A. That is correct.

7 Q. (By Mr. Miller) Were you communicating with
8 organizations like the Department of Animal Science at
9 Utah State University during this time period?

10 MR. OAAS: Object to the form of the
11 question as leading.

12 A. Yes.

13 Q. (By Mr. Miller) Were you reporting your
14 findings and the science with folks like the Patuxent
15 Wildlife Research Center -- Center which is part of
16 the Bureau of Sport Fisheries and Wildlife which is
17 part of the Department of Interior during this time
18 period?

19 MR. OAAS: Object to the form of the
20 question as leading.

21 A. Yes.

22 Q. (By Mr. Miller) And was it your
23 understanding during this time period that these kinds
24 of organizations, the ones that we've just mentioned,
25 were doing -- doing their own independent research on

1 the affects of PCBs in the environment on wildlife and
2 the persistence of PCBs in the environment?

3 MR. OAAS: Object to the form of the
4 question as leading.

5 A. They were.

6 Q. (By Mr. Miller) And did they communicate to
7 you the nature of their research?

8 MR. OAAS: Object to the form of the
9 question as leading.

10 A. Yes.

11 Q. (By Mr. Miller) And were they looking, for
12 example, at the affects of PCBs in the environment on
13 creatures like fish and birds?

14 MR. OAAS: Object to the form of the
15 question as leading.

16 A. Yes.

17 Q. (By Mr. Miller) And were you communicating,
18 Mr. Papageorge, with organizations like the U.S. Bureau
19 of Commercial Fisheries during the 1970 period about
20 what you had been finding, the nature of the research
21 results that you were obtaining and the methodologies
22 that were -- you were using regarding the environmental
23 presence of PCBs?

24 MR. OAAS: Object to the form of the
25 question as leading.

1 A. Yes.

2 Q. (By Mr. Miller) In fact, Mr. Papageorge,
3 you attended meetings with all of those organizations,
4 isn't that correct?

5 MR. OAAS: Object to the form of the
6 question as leading.

7 A. That is correct.

8 Q. (By Mr. Miller) And at those meetings, did
9 you share with these organizations the information that
10 Monsanto had obtained up to that point regarding the
11 affects of PCBs on wildlife and fish and the
12 persistence of PCBs in the environment?

13 MR. OAAS: Object to the form of the
14 question as leading.

15 A. Yes.

16 Q. (By Mr. Miller) And I take it during this
17 time period that the information that they had shared
18 with you and that you had shared with those types of
19 organizations solidified in your mind the notion that
20 Monsanto ought to go out of the business of providing
21 PCBs for uses such as in things like paint, is that
22 correct?

23 MR. OAAS: Object to the form of the
24 question.

25 A. That is correct.

1 Q. (By Mr. Miller) And as I understand it,
2 that occurred in -- at the end of August in 1970?

3 MR. OAAS: Object to the form of the
4 question as leading.

5 A. That is correct.

6 Q. (By Mr. Miller) And at that time -- or
7 prior to that time, Mr. Papageorge, did any of these
8 organizations that we've just talked about, the USDA,
9 the Fish Pesticide Research Laboratory, the Fisheries
10 Research Board of Canada, the Departments of Fisheries
11 and Forestry, the Food and Drug Administration, the
12 Department of Interior, the Bureau of Sport Fisheries
13 and Wildlife, or the U.S. Bureau of Commercial
14 Fisheries, ever come to Monsanto, to your knowledge,
15 and say you need to stop selling PCBs for use as a
16 plasticiser?

17 MR. OAAS: Object to the form of the
18 question as leading.

19 A. I'm not aware of anything like that, no.

20 Q. (By Mr. Miller) In other words, your
21 decision -- Monsanto's decision to go out of the
22 business of selling PCBs as a plasticiser was a
23 voluntary action taken by the company, is that correct?

24 MR. OAAS: Object to the form of the
25 question.

Page 333 1 A. That is correct. 2 Q. (By Mr. Miller) And to your understanding, 3 there was no law or regulation or legislation that 4 required Monsanto to stop selling PCBs as a plasticiser 5 in 1970, is that correct? 6 MR. OAAS: Object to the form of the 7 question. 8 A. That is correct. 9 Q. (By Mr. Miller) And if I understand the 10 information that you were shown by plaintiff's counsel 11 during the course of the deposition, Monsanto, as a 12 result of that voluntary action, essentially cut back 13 the production of PCBs roughly in half, is that 14 correct? 15 MR. OAAS: Object to the form of the 16 question as leading? 17 A. That is correct. 18 Q. (By Mr. Miller) So as I understand your 19 prior testimony, PCB -- or Aroclor sales were a 20 profitable part of Monsanto's business at that time, is 21 that right? 22 MR. OAAS: Object to the form of the 23 question as leading. 24 A. That is right. 25 Q. (By Mr. Miller) And so what Monsanto did is	Page 335 1 was the Department of Interior? 2 A. Yes. 3 Q. Now, you -- are you aware, Mr. Papageorge, 4 that in addition to the research that was being 5 conducted by the organizations that we've already 6 mentioned, the FDA and the US EPA and the USDA and the 7 Sport Fisheries and Wildlife Bureau and the Fish 8 Pesticide Research Lab and the Bureau of Commercial 9 Fisheries, that that research was in part being 10 published in the scientific literature? 11 MR. OAAS: Object to the form of the 12 question as leading. 13 A. Yes. 14 Q. (By Mr. Miller) And you at Monsanto had 15 access to the published literature that was being 16 produced by these organizations during that time? 17 MR. OAAS: Object to the form of the 18 question as leading. 19 A. Yes. 20 Q. (By Mr. Miller) And certainly the 21 interdepartmental task force had access to that 22 literature? 23 A. Yes. 24 Q. And the Bureau of Fish and Wildlife would 25 have had access to that liter -- literature?
Page 334 1 essentially voluntarily cut off half of the profits it 2 was going to be making and half of the revenue it would 3 be making from the sale of Aroclors entirely as a 4 result of a voluntary action? 5 MR. OAAS: Object to the form of the 6 question as leading? 7 A. That is correct. 8 Q. (By Mr. Miller) And you -- you mentioned 9 that you are familiar with the interdepartmental task 10 force on PCBs in the environment? 11 A. I am. 12 Q. And you've looked at a report that 13 plaintiff's counsel showed you dated May of 1972? 14 A. Yes. 15 Q. And that report summarized what was known in 16 the community -- the scientific community at that time 17 regarding the hazards of PCBs and their presence of -- 18 presence in the environment, as you understood it? 19 A. Yes. 20 Q. And you understand that that 21 interdepartmental task force was made up of a number of 22 federal agencies within the United States Government? 23 A. That is correct. 24 Q. And is it your understanding that one of the 25 organizations within the interdepartmental task force	Page 336 1 MR. OAAS: Object to the form of the 2 question as leading, vague. 3 A. Yes. 4 Q. (By Mr. Miller) In addition to the 5 literature that was being published in the scientific 6 community and the information that was being 7 disseminated through the report of the 8 interdepartmental task force, you saw, I take it, 9 during your tenure at Monsanto in the early 1970s that 10 there were articles in the popular press, newspapers 11 like the New York Times and Time Magazine and Newsweek, 12 about the environmental persistence of PCBs? 13 MR. OAAS: Objection to the form of the 14 question as leading. 15 A. Yes. 16 THE VIDEOGRAPHER: We have approximately one 17 minute of tape left. 18 Q. (By Mr. Miller) I take it -- my last 19 question, Mr. Pap -- for today, Mr. Papageorge -- and 20 we'll go through this in more detail when we're 21 together next time, but you would kind of have to have 22 been living under a rock in 1970-'71 not to be aware of 23 the environmental persistence of PCBs, isn't that 24 correct? 25 MR. OAAS: Object to the form of the

Page 337 1 question as leading. 2 A. That is -- 3 MR. BROWN: And I join in that objection. 4 A. -- correct. 5 MR. MILLER: All right. 6 MR. OAAS: It's also insulting to the 7 Montana Department of Fish, Wildlife and Parks and the 8 people who operated the fish hatchery at the time, and 9 irrelevant and malicious, and that's all I have. 10 THE VIDEOGRAPHER: We are off -- 11 MR. OAAS: I want to offer, for record for 12 the -- the deposition -- plaintiff's Exhibits 1 through 13 68. I move that they be made a part of the record of 14 the deposition. 15 MR. MILLER: I don't think you have to move 16 for that, but they're made part of the record. 17 THE VIDEOGRAPHER: We are off the record at 18 2:30 p.m. ending tape no. 5. 19 (Wherein, the taking of the videotaped 20 deposition concluded.) 21 22 23 24 25	Page 339 1 2 3 I, WILLIAM PAPAGEORGE, do hereby state that the 4 foregoing statements are true and correct to the best 5 of my knowledge and belief. 6 7 _____ William Papageorge 8 9 10 11 Subscribed and sworn to before me this ____ day 12 of _____, 2006. 13 14 _____ Notary Public 15 16 17 My Commission expires: 18 _____ 19 20 21 22 23 24 25
Page 338 1 CERTIFICATE 2 3 I, Christopher C. Wieggers, Certified Court 4 Reporter, DO HEREBY CERTIFY that pursuant to agreement 5 between the parties, the aforementioned witness came 6 before me at the time and place hereinbefore mentioned, 7 and having been duly sworn to tell the whole truth of 8 his knowledge touching upon the matter in controversy 9 aforesaid; that he was examined on the day, and his 10 examination was taken in shorthand and later reduced to 11 printing; that signature by the witness is reserved and 12 said deposition is herewith forwarded to the taking 13 attorney for filing with the Court. 14 IN WITNESS WHEREOF, I have hereunto subscribed my 15 name this 10th day of July, 2006. 16 17 18 19 20 21 _____ Christopher C. Wieggers 22 23 24 25	Page 340 1 WILLIAM PAPAGEORGE 2 3 NAME OF DEPONENT 4 DEPOSITION CORRECTION SHEET 5 Re: Marty Paulson, et al., vs. Monsanto Chemical 6 Company, n/k/a Pharmacia, et al., No. DV-2004-55 7 Reported By: Christopher C. Wieggers 8 Upon reading the deposition and before subscribing 9 thereto, the deponent indicated the following 10 changes should be made: 11 Page Line Should read: 12 Reason assigned for change: 13 14 Page Line Should read: 15 Reason assigned for change: 16 17 Page Line Should read: 18 Reason assigned for change: 19 20 Page Line Should read: 21 Reason assigned for change: 22 23 Page Line Should read: 24 Reason assigned for change: 25 _____ SIGNATURE OF DEPONENT

July 10, 2006

HUSCH & EPPENBERGER, LLC

Adam Miller, Esq.
190 Carondelet Plaza, Suite 600
St. Louis, Missouri 63105

Re: Marty Paulson, et al., vs. Monsanto Chemical
Company n/k/a Pharmacia, et al., No. DV-2004-55

Dear Mr. Miller:

Enclosed is the transcript of Mr. William
Papageorge's deposition testimony given on June 28,
2006. Please have Mr. Papageorge review the
transcript, make any corrections, and return one copy
of the corrections as well as the signature page
directly to Torger S. Oaas, Esq. If the transcript is
not signed within thirty days, the original transcript
may be filed with the Court as if signed.

If you have any questions please do not hesitate
to contact me.

Respectfully,

Christopher C. Wieggers

ccw
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