UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW HAMPSHIRE

BETHLEHEM MINK FARM, INC., et al	:	Deposition of
	:	William B.
vs.		Papageorge
	:	
JURGIELEWICZ, et al		
- - - - - - - - - - - - - - - - -		FIRST DAY

Deposition taken by agreement of the parties at the offices of Wadleigh, Starr, Peters, Dunn & Kohls, 95 Market Street, Manchester, New Hampshire, Tuesday, February 12, 1974, commencing at 10:00 o'clock in the forenoon.

PRESENT:

For Bethlehem Mink and Jubilee Food Supply:

McLane, Graf, Greene & Brown, by James R. Muirhead, Esq.

For Jurgielewicz and Related Interests:

Sulloway, Hollis, Godfrey & Soden, by Lawrence E. Spellman, Esq.

For Defendant Monsanto:

Wadleigh, Starr, Peters, Dunn & Kohls, by Philip G. Peters, Esq., and Robert L. Chiesa, Esq.

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For Agway and Related Interests:

Faulkner, Plaut, Hanna and Zimmerman, by N. Michael, Plaut, Esq., and Stillman D. Rogers, Esq.

For Rozansky Feed Company:

Sheehan, Phinney, Bass & Green, by Thomas H. Richards, Esq.

Stenotype Reporter:

Ronald J. Hayward

It is stipulated and agreed that the deposition may be taken in the first instance by stenograph, and when transcribed and then signed by the deponent, may be used for all purposes for which depositions are competent under the Federal Rules of Civil Procedure. Form, filing, notice and caption expressly waived. Copy of deposition to be furnished deponent's counsel.

It is further stipulated and agreed that if the deposition remains unsigned thirty (30) days after delivery to deponent's counsel, signature shall be deemed waived; and the deposition may be used the same as if signed.

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WILLIAM B. PAPAGEORGE

called as a witness, being first duly sworn, was examined and testified as follows:

(Interrogatories by Mr. Spellman.)

1. Q. May I have your full name and address, please?

A. William B. Papageorge, 321 Pebble Valley Drive, St. Louis, Missouri, 63141.

2 Q. How old are you, sir?

A. 51.

3 Q. Where were you born?

A. St. Louis, Missouri.

4 Q. And you are still living in St. Louis?

A. Yes, sir.

5 Q. Has that always been your home?

A. Not always, sir, I have resided elsewhere.

6 Q. How far did you go in school?

A. Master's Degree in Science, Chemical Engineering.

7 Q. Where?

A. Washington University, St. Louis, Missouri.

8 Q. Where did you take your undergraduate work?

A. The same institute.

9 Q. Is that also, I assume, in Science?

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A. Yes, Chemical Engineering, Bachelor of Science.

Q. When did you take your Master's?

A. I received the degree in 1947.

Q. And your Bachelor's?

A. 1943.

Q. Since 1947, have you lived continuously in St. Louis?

A. No, sir.

Q. Did you work in the chemical field at all prior to starting your undergraduate work at Washington University?

A. No, sir.

Q. What was the first employment you had after completing your Bachelor's Degree?

A. Does military service count as employment, sir?

Q. It did for me.

A. All right; I entered military service right after receipt of my Bachelor's Degree.

Q. How long?

A. About four years, as I remember. No, about three and a half years. '43 to '46.

Q. What branch?

A. Well, it started out as the Coast Artillery Service.

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The Army, is that adequate?

18 Q. Yes. Did any of your work in the military have to do with chemistry?

A. I had a very brief assignment which was related to chemistry in terms of decontamination in Japan of chemical warfare equipment and supplies.

19 Q. Was that decontamination as a result of the bomb?

A. No, sir, this was the ordinary types of chemical warfare as distinguished from the radioactive types.

20 Q. What kinds and types were you generally concerned with for purposes of decontamination?

A. I don't personally know the exact chemical nature because of the Japanese terminology, but I am led to believe it was along the lines of our Phosgenes, mustard gas, chlorine and along those lines.

21 Q. Were you able to start on your Master's Degree while you were still in the service, or had you started it before you went in?

A. No, sir, I started after I left the service.

22 Q. And how long did it require for your Master's?

A. One year.

23 Q. Did you concentrate on any particular aspect of

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chemical engineering in the course of taking your Master's Degree?

A. Yes, my Master's thesis was in the area of electrochemistry.

24 Q. Any particular application of electrochemistry in your thesis?

A. This is the formation of an organic chemical through the use of the electrochemical technology.

25 Q. I am not sure that I am competent enough to understand that answer fully, Mr. Papageorge. I am concerned with any particular kinds of chemical compounds that you were concerned with or were you concerned with a more general application?

A. Well, I worked with a specific chemical, but the intent was to get a general knowledge of that type of reaction.

26 Q. What was the chemical?

A. Phenylenediamine.

27 Q. Is that chemical in any way related to the general category we have been referring to in this case as Hydrocarbons?

A. It is related indirectly.

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28 Q. How do you mean that, sir?

A. We start with a Hydrocarbon raw material or starting material and convert it to what is known as an amine.

29 Q. Were you concerned with a particular kind of Hydrocarbon or did it make any difference to your thesis?

A. I was concerned with a specific kind only as it relates to achieving this Phenylenediamine material that I referred to.

30 Q. What particular kind of Hydrocarbon were you concerned with in your thesis?

A. As I recall, I started with - my memory is rather vague - it is either Phthalic acid or Phthalic anhydride.

31 Q. When you made the conversion to an amine, what does that say in lay terms, if you can?

A. It changes the original material into a new chemical form which we had hoped might find some other applications, some new applications.

32 Q. Did you find them?

A. We did not go into the application study, we just made the material.

33 Q. Am I correct in assuming that you were doing laboratory research work in connection with this thesis as opposed

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to simple study?

A. Well, there was laboratory work involved, yes.

34 Q. What was your first employment after receiving your Master's Degree?

A. I was employed by the Phillips Petroleum Company, Bartlesville, Oklahoma.

35 Q. How long were you so employed?

A. About four years.

36 Q. Until around 1951?

A. 1947 to '51, yes, sir.

37 Q. In what capacity?

A. My initial assignment was with their research department and I was involved with research activities related to improving the recovery of oil from older wells.

38 Q. Can you tell us in lay terms how that relates to chemical engineering, if it does?

A. Well, it involves principles of chemistry, of course. It involves principles of fluid flow. It even involved with me at the time some exposure to bacteria control. It involved how to separate oil from water. We used the term breaking of emulsions. Those are the basic

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principles involved.

39 Q. Did that work, Mr. Papageorge, involve Hydrocarbons as a chemical?

A. Yes, Hydrocarbons involved in the oil itself and Hydrocarbons used in the treatment of these well waters, emulsions, other fluids involved in the whole process.

40 Q. Would you give me a definition of what you mean by the generic term Hydrocarbon?

A. It is a material which is composed of a combination of carbon and hydrogen.

41 Q. Is there any particular relationship generally involved between the carbon and the hydrogen in order to make the so-called Hydrocarbon?

A. No, this can vary in a multitude of ways.

42 Q. What was your next employment after Phillips Petroleum?

A. I then joined the Monsanto Chemical Company as it was known then.

43 Q. And I take it you have worked for them continuously since?

A. Yes, sir.

44 Q. What is your present position with Monsanto?

A. I am employed as manager, product acceptability.

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45 Q. How long have you held that title?

A. It is either late '71 or early '72 that my title was changed to this current one.

46 Q. Had there been someone serving in that job bearing that title before you took it on?

A. Not in that title, no.

47 Q. Can you tell me the occasion for creating that position within the company?

MR. PETERS: You mean the reason?

MR. SPELLMAN: Yes.

THE WITNESS: The reason?

48 Q. (By Mr. Spellman) Yes.

A. It was decided within our management of the operating unit of which I am a member that there was a need for someone in each of our subdivisions of this group to concern themselves with our products and their impact on the environment, on society and on the user in every way imaginable; and our management decided that these individuals should have the titles of manager of product acceptability and concern themselves with our products.

49 Q. Was there any then outstanding litigation that persuaded

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the company towards this title and this position?

A. I do not know that litigation played any part in it. I have no indication that litigation played a part in this decision.

50 Q. Was there outstanding litigation respecting the products and the environment at the time that this position was created?

A. Yes.

51 Q. Now, you have made reference to the operations unit or group of which you are a member?

A. Yes, sir.

52 Q. What is that group? Does it have a title?

A. Yes, I am a member of the Functional Products Group which is a division of Monsanto Industrial Chemicals Company.

53 Q. How does Monsanto Industrial Chemicals Company relate to what we refer to here as the Monsanto Company?

A. Monsanto Industrial Chemicals is one of four operating companies within the Monsanto Company organization.

MR. SPELLMAN: Off the record.

(Discussion off the record.)

54 Q. (By Mr. Spellman) Mr. Papageorge, am I correct in

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assuming that the Monsanto Industrial Chemicals Company is a division of the Monsanto Company as opposed to a separate corporation?

A. That is correct.

55 Q. And there are three other divisions or operating companies, are there not?

A. Yes, we also have two divisions in addition to the four companies. There are four operating companies and two divisions.

56 Q. Which comes first in the hierarchy, divisions or operating companies or are they on the same level?

A. Their functions are different, therefore, it is difficult to evaluate the order of hierarchy.

57 Q. What are the divisions of the Monsanto Company, these two?

A. One is called the New Enterprises Division and the second is the International Division.

58 Q. And what are the other three operating companies?

A. There is the Monsanto Textiles Company, Monsanto Consumer Products Company and Monsanto Plastics and Polymers Company.

59 Q. Now, do you function in any way for Monsanto Textiles,

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Monsanto Consumer Products or Monsanto Plastics and Polymers?

A. No, sir.

60 Q. Do you function in any way with respect to the New Enterprises Division or the International Division?

A. I have no relationships with the New Enterprises Division. I do on occasion have business dealings with the International Division. This business relates to those products which are the concern of the Functional Products Group which are marketed internationally.

61 Q. Now, what are the divisions of the Monsanto Industrial Chemicals Company?

A. There are three divisions; one of them is the Functional Products Group I referred to, another is the Detergents and Fine Chemicals Group - I am not certain of the name of the third one, but it is something along these lines, it is the Rubber and Process Chemicals Group.

62 Q. Do you have any function in respect to the Detergents and Fine Chemicals Group or the one you have described as Rubber and Process Chemicals Group?

A. No, sir.

MR. PLAUT: Off the record.

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(Discussion off the record.)

63 Q. (By Mr. Spellman) If you will, sir, tell us generally what the Detergents and Fine Chemicals Group is and does?

A. The Detergents and Fine Chemicals Group is responsible for all activities related to those chemicals that go into detergents as the ordinary household user defines detergents. The Fine Chemicals subdivision of that group concerns itself with - - - Let me put it another way, I think the best way to describe it is to mention a few common kinds of chemicals. For example, aspirin is considered a fine chemical. Some of the germicides that are used in your bathroom cleansers and so on are considered fine chemicals. Some of the synthetic flavors and essences like vanillin is a fine chemical. One of the pharmaceuticals known as L-Dopa used in the treatment of Parkinsons Disease comes within the domain of this group. I guess one way to define fine chemicals are those chemicals that directly enter either the food or the pharmaceutical applications.

64 Q. Would it be fair for us to assume that the Detergents and Fine Chemicals Group does not concern itself with

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Hydrocarbons?

A. No, I can't say that because they use Hydrocarbons as raw material in the manufacture of many of their products.

65 Q. Would it be fair for us to assume that the Rubber and Process Chemicals Group does not concern itself with Hydrocarbons?

A. No, they too use Hydrocarbons either as raw material or as finished products.

66 Q. Does each of those two divisions have a person serving in a capacity similar to yours in the Functional Products Group?

A. Yes, sir.

67 Q. Would it be fair for us to assume that the - I am talking now of the other operating companies, the Monsanto Textiles Company - does not concern itself with Hydrocarbons?

A. No, they also concern themselves with Hydrocarbons.

68 Q. How about the Monsanto Consumer Products?

A. They also use or sell Hydrocarbons.

69 Q. How about Plastics and Polymers?

A. They too are involved.

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70 Q. Then it is fair to say that across the whole breadth of the company there is involvement and concern with Hydrocarbons?

A. Very much so, yes.

71 Q. Which of the groups or divisions would not be concerned with polychlorinated biphenyls or PCB's?

A. All of the groups would not be concerned with the exception of one part of the Functional Products Group.

72 Q. I will state it another way. Should we understand that only one part of the Functional Products Group is concerned with PCB's and nobody else is?

A. That is correct.

73 Q. And which part of the Functional Products Group is that?

A. This is the part known as the Specialty Products Group.

74 Q. Now, the Specialty Products Group is a part of the Functional Products Group?

A. That is correct.

75 Q. What are the other parts?

A. There is one more part which is known as the Special Chemical Systems Group.

76 Q. And that part, as I understand, is not involved with PCB's?

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A. That is correct.

77 Q. Now, having regard for the organization as we have just been describing it, is that your thing that has been fixed for relatively any period of time?

A. I don't understand what you mean by thing or fixed.

78 Q. For lack of a better term, can we understand that to be sort of a table of organization of the company?

A. That organization has existed since late 1971, yes, sir.

79 Q. Was there a substantial change in the organization of the company at or about 1971?

A. Yes, there was.

80 Q. And one of the aspects of that change was the position in which you now serve?

A. Yes.

81 Q. Now, what are your duties as manager of Product Acceptability?

A. My duties fall into an area that I refer to as a staff type of activity.

MR. PLAUT: May I interrupt? We are talking about at the present time, Larry, his duties?

MR. SPELLMAN: Yes.

THE WITNESS: Which involves

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primarily one of advising, recommending, keeping abreast of developments in government, in the public sector, the universities, and passing on this information to the appropriate individuals within the Functional Products Group which they in turn use to arrive at their many decisions, whether they be business related or technically related, manufacturing related and so on.

82 Q. (By Mr. Spellman) Have those duties been the same since you assumed this title or have they changed in any way?

A. They have been the same since I assumed this title.

83 Q. Do your duties involve anything with particular reference to PCB litigation?

A. Yes.

84 Q. What is that, sir?

A. Well, if I can define it, I am searching for words, it is primarily one of attempting to be a focal point, if you will, for all information relating to polychlorinated biphenyls within Monsanto.

85 Q. Have you been designated as the person to speak for the company in respect to PCB litigation?

A. Yes, sir.

86 Q. Are all of the requests for information or work which

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the company does in connection with PCB litigation, is that all funnelled through you?

A. I have no measure of whether all of it is coming my way, but a good bit of it comes my way.

87 Q. You would be the person I take it of whom inquiries would be put to find out what knowledge Monsanto has or what work it has done in this field?

A. In many instances, yes, sir.

88 Q. Well, would there be anybody else?

A. I have difficulty answering that. For example, the switchboard may get an inquiry and the girl at the switchboard doesn't really know that I exist, she is a new girl, she may send this on to someone else who attempts to respond. I don't know how well it is done or I have no feel of what is going on. Inquiries could go into our in-house Monsanto council and I am not aware of this because they can answer it because of previous exposure.

89 Q. But when you speak in response to interrogatories or questions or inquiries - - -

A. That is right.

90 Q. You speak as Monsanto, do you not?

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A. That is right, sir.

91 Q. Will you refer or relate me back to 1951, sir, and tell me what various jobs you have held in Monsanto prior to your present position?

A. I will try to recall them in sequence. I was a Process Engineer in a group that specified and designed the equipment for the manufacture of chemicals. I participated in the start-up and demonstration of new manufacturing facilities. I was for a time a Supervisor of manufacturing units within Monsanto. In turn, I was responsible for more than just one unit. In other words, a more responsible position, it involved several units.

I was a Supervisor back in the design - the technical group again - I was a Superintendent in warehousing, a distribution function. I was Superintendent of a maintenance function and I was a Plant Manager at one of our plants.

92 Q. What plant was that?

A. Anniston, Alabama plant.

93 Q. When were you Plant Manager in Anniston, Alabama?

A. 1965 to the end of 1969.

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94 Q. Just to give me an idea on times, when were you working as a Process Engineer?

A. From '51 till - I don't remember the exact time - until about '54.

95 Q. Within a year or so, that is all I am concerned with. Was the next sequence Supervisor of Manufacturing Units?

A. Then I supervised manufacturing units from '54 to '56. In the maintenance function, from '56 to - I don't remember exactly - '58-'59. Then I became a - I went back to this technical function, Technical Engineering work from '59 until '62. Then I was involved with warehousing distribution from '62 to '64. Then I went back to the production operation from '64 to '65 and then I became Plant Manager in '65 to 1969.

96 Q. What were your duties from '69 to '71?

A. From '69 - let me break it down a little bit. From '69 until about the middle of '71, let's say May of 1971, somewhere in there, I was concerned only with poly-chlorinated biphenyls. In about May of 1971, as best I recall, I was given additional products to be concerned about and near the end of '71 we underwent this company reorganization that I referred to earlier

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in which the number of products for which I was to be concerned with was limited to those in the Functional Products Group.

97 Q. Have you, in connection with any of the various jobs you have described, been concerned with research, chemical research, for the company?

A. Not for Monsanto, no, sir.

98 Q. Since 1951, have you been concerned with chemical research for anybody else?

A. No, sir.

99 Q. So that since 1951 you have not been involved in chemical research?

A. That is correct.

100 Q. What products did the plant at Anniston, Alabama produce?

MR. PLAUT: While he was in charge?

MR. SPELLMAN: Yes, while he was Plant Manager.

THE WITNESS: I will try to remember them all. We produced biphenyl - would you like me to describe them by some chemical terminology or trade names? It becomes somewhat complex.

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101 Q. (By Mr. Spellman) I guess what I am trying to find out is generically the kinds of things. Was there some limit on that plant that they manufactured certain things that other plants didn't?

A. Some of the materials produced at the Anniston plant were exclusive to that plant. Some of the materials produced at that plant were also produced at at least one other location.

102 Q. Was that plant concerned while you were there with the manufacture of PCB's?

A. Yes, sir.

103 Q. Did it manufacture products related by category to PCB's?

A. I don't think I understand that question.

104 Q. Did it manufacture other Hydrocarbons or products based on Hydrocarbons?

A. Yes, sir.

105 Q. Based on your prior answer, were there many other plants within the company producing products in the Hydrocarbon area?

A. Correct.

106 Q. Were there any other plants other than the Anniston

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plant producing PCB's?

A. Yes, sir.

107 Q. Which one?

A. In the United States?

108 Q. Yes, and I am talking now '69 - I am sorry, '65 to '69.

A. They were also produced at the plant located in Sauget, Illinois.

109 Q. Is that the only other one in the States?

A. That is the only other one.

110 Q. Were there other Monsanto plants elsewhere in the world manufacturing PCB's?

A. Yes, sir, there is one located at Newport, Wales in the United Kingdom and there was a half-interest operation located in Japan, operated by Mitsubishi, and Monsanto Company.

MR. PETERS: Just so you know it, in the production of PCB's in Japan, was that all the way from '65 through '69; I think they ought to know that.

THE WITNESS: No, sir, I don't remember the exact date, but sometime during 1969 they went on stream.

MR. SPELLMAN: I am sorry?

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THE WITNESS: Sometime during 1969 the unit in Japan began operating and producing polychlorinated biphenyls.

111 Q. (By Mr. Spellman) How long prior to 1965 had the Anniston plant been concerned with the manufacture of PCB's?

MR. PETERS: Roughly.

THE WITNESS: My records and all that I was able to see indicate that they manufactured or began manufacturing polychlorinated biphenyls in late 1929. And by they, I am referring to the predecessor company.

112 Q. (By Mr. Spellman) That was Swan?

A. Swan Chemical Company, yes, sir.

113 Q. And Swan was taken over by Monsanto?

A. Yes, sir.

114 Q. About when?

A. Middle '30's.

115 Q. How long prior to 1965 had the plant in Newport, Wales, been manufacturing PCB's?

A. This is somewhat of an estimate; I believe they started operation in the middle '50's.

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116 Q. Now, was that a takeover or was that something which Monsanto itself started in Newport, Wales?

A. The Polychlorinated Biphenyl Unit is something that Monsanto started in Newport.

117 Q. Had they taken over another company there sometime prior to commencement of the manufacture of PCB's?

A. Yes, sometime prior - which I am not familiar with - Monsanto purchased a British chemical company and that became the Monsanto unit in England.

118 Q. What other plants, if any, prior to 1965, did Monsanto use for the manufacture of PCB's?

A. No other plants.

119 Q. Did they use any plants outside of the United States for the manufacture of PCB's other than the start in Japan in '69 and the installation in Newport, Wales?

A. No others.

120 Q. Since 1969, in what plants has Monsanto manufactured PCB's?

A. Those same four plants that I mentioned world-wide.

121 Q. I only have three, I am sorry.

A. There is two in the United States, one in the United Kingdom and one in Japan.

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122 Q. When did Sauget start making PCB's?

A. Sauget was in the middle '50's.

(Discussion off the record.)

123 Q. Mr. Papageorge, were PCB's at any time a patented product?

A. I am not aware of any patent that was issued relating to the composition or makeup of polychlorinated biphenyls.

124 Q. I take it there were patents of some kind related to some subject other than the composition?

A. Yes, I understand there was a patent relating to the use of these materials as a dielectric in electrical equipment.

125 Q. Is that the only patent of which you are aware?

A. And then there is another patent relating to the use of these materials as a cold solvent in the carbonless copy paper, surface coating.

126 Q. Anything else?

A. That is all I am aware of.

127 Q. From and after 1929 to 1965, were other companies within the United States manufacturing PCB's?

A. That is difficult to determine because I don't have

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anything other than verbal information that on occasions some companies with a supply of the raw material would chlorinate it and make polychlorinated biphenyls and attempt to market it.

128 Q. I take it you are not aware of any successful marketing in that area?

A. I don't know what you mean by successful.

129 Q. Well, you used the expression attempt to market it.

A. Well, they attempted to market it. Maybe that is a poor choice of words. They attempted to sell it in the dielectric industry. They found that the quality was not suitable and they - I am assuming here - they must have sold it to applications that didn't require the high quality that the dielectric applications required.

130 Q. But you have no particular knowledge, as I understand, of sales in those other areas?

A. No, sir, that is right.

131 Q. Would it be fair for us to assume that from 1929 to 1965, Monsanto was the prime company manufacturing and selling PCB's?

A. Yes, sir.

MR. PETERS: In the United States?

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MR. SPELLMAN: Yes, in the United States.

THE WITNESS: Yes, sir.

132 Q. (By Mr. Spellman) There were no significant competitors of which you were aware?

A. That is correct.

133 Q. Does the same hold true from 1965 to date?

A. Yes.

134 Q. With respect to foreign manufacturers, did you or are you aware of any significant competition from foreign sources in the sale of PCB's within the United States?

A. There was no significant competition primarily because of the tariff protection and the easy availability of the material Monsanto produced.

135 Q. Would it be fair, then, to say that Monsanto for practical purposes was the manufacturer of PCB's in the American market from 1929 through the present?

A. I'd like to add the word primary.

136 Q. Primary?

A. Yes.

137 Q. So you say that Monsanto is the primary seller of PCB's?

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A. Yes, sir.

MR. PETERS: I think you should know, I guess you do know, on the record that there are imports of PCB's and there have been right along. I understand that the government does its best to keep track of it.

138 Q. (By Mr. Spellman) Would it be fair to say that Monsanto had no significant competition from 1929 to date with respect to the sale of PCB's manufactured by foreign companies?

A. In what area of the world?

139 Q. The United States.

A. The United States?

140 Q. Yes.

A. That is correct.

141 Q. Was any particular group or identifiable part of the company concerned with the development and use of PCB's prior to 1971?

A. I'd like a little clarification on the development.

142 Q. Let me shift it around. From 1929 to the mid-1950's, the primary producing plant was in Anniston, Alabama, was it not?

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A. Yes, sir.

143 Q. Did that plant maintain all of the records with respect to the development and use of PCB's during that period?

A. I don't know.

144 Q. Who would know that?

A. I don't know if the people involved are still available, sir.

145 Q. Does the company have any general policy, that is Monsanto Company, with respect to the maintenance of records and destruction dates?

A. We have a policy, yes, sir.

146 Q. What is the policy?

A. It is a rather thick booklet and tries to define the retention times and places for different kinds of records.

147 Q. Let me see if I can narrow it, sir. Having regard for that booklet establishing policies, are you familiar with those portions of the policy manual which relate to PCB's?

A. I don't believe there is any portion that specifically addresses itself to polychlorinated biphenyls.

148 Q. I don't know, of course, the terminology used in the

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manual; but can you tell me if there is a destruction date, say, for research data on a given product?

A. Yes, sir.

149 Q. And how long is that retained?

A. I don't remember the specific time period.

150 Q. Can you give me an approximation?

A. I just don't remember research data, the only thought that remains in my mind about research data is that it is retained much, much longer than many other documents of business.

151 Q. I would take it correspondence probably is one of the first things to go?

A. Yes, there are such things as one-year retention, three-years, twenty-years, five-years. I remember all these periods of time and they refer to different kinds of business documents.

152 Q. In your capacity now, have you collected and correlated some place all the available records the company has on PCB's?

A. No, sir.

153 Q. Have you made any attempt to correlate some records at one place?

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A. Yes.

154 Q. And are those maintained in St. Louis?

A. Yes.

155 Q. Can you describe generally for me the kinds of records which you have undertaken to collect at St. Louis?

A. There are two sets that I am familiar with and this does not include records kept by other individuals located in St. Louis. The one that is the closest to me is my own personal set of files. In those steel cabinets I have accumulated just about every conceivable type of document you can imagine relating to poly-chlorinated biphenyls running from simple memos to newspaper articles, magazine articles, formal letters to individuals outside Monsanto, inter-company correspondence, reports from the various functions, marketing, manufacturing, research, I have that.

156 Q. When you refer to your personal file, you mean as Product Acceptability Manager?

A. Yes, sir.

157 Q. So they do constitute company records?

A. Yes, there is another set which I have become involved with and this is really the Anniston, Alabama, records

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which were transferred into our St. Louis central record depository when we terminated the manufacture of polychlorinated biphenyls at that plant.

158 Q. And those, I gather, are in a central file some place and are somewhat distinguished from the things that you described as your personal file?

A. That is correct.

159 Q. I take it you don't have copies of all of those documents in your personal file?

A. Most.

MR. PLAUT: Off the record.

(Discussion off the record.)

160 Q. (By Mr. Spellman) When did the company terminate the manufacture of PCB's in Anniston?

A. I am trying to get my years right here, April, '71.

161 Q. Why?

A. When we withdrew from the market place the sale of polychlorinated biphenyls to many applications, this resulted, of course, in a decreased need. We had at that time excess manufacturing capacity. We were also aware that manufacturing control of losses to the sewer and atmosphere and everything were very important and

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we decided that this was more easily done at the newer of the two plants, the newer installation, and this automatically took us to the Sauget, Illinois, unit which was the newer and more modern facility.

162 Q. Since April, 1971, is Sauget the only plant in the United States manufacturing PCB's?

A. The only Monsanto plant, yes, sir.

163 Q. Have you since 1971 manufactured any PCB's in the Japanese plant together with Mitsubishi?

A. The Monsanto Mitsubishi operation was terminated, I can't recall the date right now.

164 Q. Approximate, sir.

MR. PETERS: This is one time when you can use some guesswork if you want and we will get that for you, the actual date.

THE WITNESS: I believe it was late 1971.

165 Q. (By Mr. Spellman) Has the manufacture of PCB's at the Newport, Wales, plant been terminated?

A. No, sir.

166 Q. Since 1971, is any company of which you are aware, other than Monsanto, manufacturing PCB's in the United

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States?

A. Well, I mentioned some of these, it is called rumors that I heard, but I do know of a specific name that was mentioned to me, Geneva Industries, located somewhere in Texas.

167 Q. But as I understand, you don't know this to be a fact, it is simply rumor?

A. That is right, it is passed on to me verbally from individuals who, in turn, heard it verbally.

168 Q. What was the reason for withdrawing PCB's from sales for, as you say, many applications?

A. We kept hearing and finally confirmed that some of the polychlorinated biphenyls were being found fairly widly scattered in the environment. Throughout the world, and in the early days when this knowledge became more apparent, there were some claims made that some of these polychlorinated biphenyls were creating some damage to the environment. Rather than wait until all of the facts were in, we decided that there was enough evidence of at least presence that indicated we should stop introducing this material to the market for those uses which led immediately to an exposure to

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the environment or dumping into the environment, and this decision I remember was made in early 1970.

169 Q. Is the use for which the company has manufactured since 1970 limited somewhat to the electrical industry?

A. Well, the electrical industry certainly is a use to which we still supply.

170 Q. Let me reverse the question and ask you what manufacturing use you still intend to supply?

A. We still intend to supply to the electrical industry what is referred to as a dielectric fluid for use in transformers and capacitors.

171 Q. Mr. Papageorge, we have been presented this morning a number of copies of documents in response to the interrogatories which we previously filed. I haven't had a chance to look at them, so if I put a question and you know that is clearly answered in one of these, please feel free to refer to them, if you like. I don't want to duplicate it any more than necessary. In connection with the sale of PCB's for use in dielectric fluids, do you somewhat limit your customers to that use?

A. Yes.

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172 Q. What do you do to limit them?

A. I am assuming you are now speaking of the United States market?

173 Q. All right.

A. In the United States, we assure ourselves first of all that the customer is truly a manufacturer of these transformers and capacitors that use this type of fluid. Secondly, we have the customer sign an agreement which holds Monsanto harmless and in which they express an understanding of the environmental contamination problem of polychlorinated biphenyls. And thirdly, for those companies - I am not positive - that have a given capital value, they must demonstrate financial responsibility in some fashion. And the understanding is that the material that is shipped to this customer becomes their property when it leaves our plant gates.

174 Q. Have you finished?

A. Yes, sir.

175 Q. Prior to that limitation with respect to sale for use in dielectric fluids, had Monsanto ever previously put any limitation on the use to which a customer might put PCB's?

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A. The limitation we put prior to that was one of refusing to sell to certain applications.

176 Q. Can you give me any examples prior to 1970?

A. Let me think a bit, I am sorry.

177 Q. Excuse me, so that we don't misunderstand each other, as I understand your last couple of answers, you limited the sale of PCB's to users for dielectric fluids starting sometime early in 1970?

A. No, sir. This program which I just described referring to the agreement between the buyer and Monsanto and the use as a dielectric in capacitors and transformers, that program became effective in late '71, early '72.

178 Q. And I guess the date I had wrong was the decision to limit your production to this use, that was made sometime in early '70?

A. Yes, sir.

179 Q. And I take it it took some time to implement that decision?

A. The implementation was a phasing in as data became available.

180 Q. Did the policy as you have now described it, sale to limited use, actually not become effective on the market

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place until late '71 or early '72?

MR. PETERS: You mean the one concerning the dielectric in the electrical industry?

MR. SPELLMAN: Yes.

THE WITNESS: As it refers to the dielectric and the electrical industry that policy did become effective as you say in late '71 or early '72.

181 Q. (By Mr. Spellman) Now, prior to the effective date of that policy as it affected the electrical industry, what, if any, limitations had Monsanto put on its consumers in respect to the use of PCB's sold to the customers by Monsanto?

MR. PETERS: I want to object for the record to anything after April 1, 1971 when, I understand, is the last possible time that Bethlehem Mink could have sustained any damage. I understand that the last shipment was April 1, '71.

MR. MUIRHEAD: It wasn't the last time that they sustained any damage.

MR. PETERS: It was the last time that they got a shipment, as I understand it, from Jurgielewicz, in April of '71.

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MR. MUIRHEAD: That is not the same thing as saying that is the last time they sustained any damage.

MR. PETERS: But they couldn't sustain any damage after that because of shipments because there weren't any.

MR. MUIRHEAD: You are talking about the cause?

MR. PETERS: That is right. With that restriction, 1971.

MR. SPELLMAN: You are taking an objection, not instructing him not to answer?

MR. PETERS: Well, I am going to instruct him not to answer any activity after April 1, 1971, but that he can testify to everything up to that date. Off the record.

(Discussion off the record.)

THE WITNESS: As I understand the question, I am to describe Monsanto's program for limiting the sale of polychlorinated biphenyls to its customers from the period in April, 1970 to April of '71?

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MR. PETERS: That is the date I have instructed you not to go beyond, April of '71.

182 Q. (By Mr. Spellman) On his limited instruction, I am asking you generally prior to April, 1971, any time?

A. Beginning in - and these dates have to be approximate, I can't remember the specific dates in all instances - about April, '70, we took action to remove the use of polychlorinated biphenyls in pesticide formulations. In about June, we took action that removed the use of distributors supplying polychlorinated biphenyls to our customers. On August 30, we stopped selling polychlorinated biphenyls to those applications which in Monsanto we used the expression plasticisor applications, which I suppose to many of us would be somewhat synonomous to miscellaneous applications, such that after that August 30 date, the only uses remaining were those that were considered to be closed system types of applications and two additional. One had to do with fire resistant industrial hydraulic fluids and the other was this application in carbonless reproduction paper. The technology in finding alternative materials for those last two was rather complex and we didn't achieve

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withdrawal until April, 1971.

MR. PETERS: Of the last two?

THE WITNESS: Of the last two.

183 Q. (By Mr. Spellman) I take it that closed system applications would include use in heat transfer agents?

A. Yes, sir.

184 Q. When were those withdrawn?

A. Well, we had two withdrawals as best I can remember. Actually, it was three withdrawals. Three withdrawals as it applies to heat transfer applications. I forgot to mention in June of 1970, we announced that we would no longer supply polychlorinated biphenyls for heat transfer systems to those systems that were involved with human food.

MR. PLAUT: I am sorry, I missed the date on that.

THE WITNESS: In June, 1970, we announced it and as I recall, it was to become effective the end of July, 1970. Then the next withdrawal comes after this April, '71 date.

MR. PETERS: All right; I instruct you not to answer after April of '71.

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185 Q. (By Mr. Spellman) I infer, then, that there were two additional withdrawals with respect to heat transfer fluids?

A. That is correct.

186 Q. After April of '71?

A. That is correct.

187 Q. Does the plasticisor application include use of PCB's in the manufacture of plastic materials for bags?

A. I am not aware of any polychlorinated biphenyls used in plastic materials for bags.

MR. PLAUT: Is that today? Your answer is today or at any time?

THE WITNESS: At any time.

(Whereupon, a recess was taken.)

188 Q. (By Mr. Spellman) Mr. Papageorge, I take it you are in a position to tell me, except for counsel's objection, what limitations were imposed on the product or what withdrawals of the product were made following April, 1971?

A. Yes, I have some information.

189 Q. Can you tell me based upon your studies into the claims in this case, whether any of the withdrawals or

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limitations since April of 1971, are in your judgement related in any way to the litigation?

MR. PETERS: I object to the question. You can answer, if you can.

THE WITNESS: I don't know that I have information to help me arrive at any opinion.

190 Q. (By Mr. Spellman) You don't know one way or the other?

A. No, sir.

191 Q. Now, at some point prior to the terminating of manufacturing at Anniston, you indicated, as I understood you, there was some difficulty in controlling losses of product to sewers and so forth, so that it had an effect on the environment?

MR. PETERS: Note my objection, please.

192 Q. (By Mr. Spellman) Am I too general, or do I misstate you?

A. I can't use the word difficulty, it is just the state of the art or the understanding of the material at the time didn't call for any particular and unusual controls that you imply here in a sewerage disposal.

193 Q. The question is poorly phrased, Mr. Papageorge. You

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indicated when you were discussing the termination of manufacture at Anniston, that there was within the company's concern losses to sewers and other effects on the environment, do I read you correctly on that?

A. That is correct.

194 Q. Would you expand and tell me more specifically what you mean by losses to sewers and other effects that the product might have on the environment?

A. Well, addressing ourselves to losses to sewers, this involves, from my personal knowledge of the situation, and lacking any understanding as to what it does out there in the environment, we treated it like we would do most other chemicals. If any material, for example, gets on the floors, it is hosed down, washed down. If a leak does occur, it, of course, is corrected, but there is no particular urgency, it is put on the list of things to do for the maintenance people. This leak eventually, if it is large enough and goes on long enough, could find its way to the sewer. Keep in mind that this is based on a different understanding in the past than we have today. These are the kinds of things that I visualize as getting into the sewer. You mention

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about harm to the environment, after all of this time and with all the things that have been said about polychlorinated biphenyls, very little really has been supported by the scientific community regarding harm to creatures that exist naturally in the environment.

195 Q. The decision to terminate manufacturing at Anniston was made by some group, I take it, within the company?

A. Yes, sir.

196 Q. Was it a recorded or written decision in any respect?

A. Not that I am aware of. Let me attempt to correct that. The decision is made by an individual who, in turn, recommends it to the group that you probably have in mind higher up in the hierarchy of the management of the company. These decisions do not necessarily have to be put in writing.

197 Q. Was this decision by an individual or the approval of it by a group higher up in the company something which was put in writing in this case?

A. I have not seen any document that addresses itself to this, no.

198 Q. Were the considerations which led to this decision in any way documented?

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A. Not that I am aware of. There is documentation regarding withdrawal from the market place. These sort of things that led to the reduced need which led to the excess capacity which automatically led to a decision which unit do we operate, but I am not sure that there is any document which summarizes all of this.

199 Q. Are any of the kinds of documents which you now describe produced in the materials that are in answer to the interrogatories?

A. Yes.

MR. PETERS: Yes, they are.

200 Q. (By Mr. Spellman) In some way, the instructions to implement the decision were written, I take it, and submitted to various people in the company?

A. Not that I am aware of.

201 Q. Would the PCB's be taken out of the line of products at Anniston on an oral instruction by someone?

A. Yes, that would be the normal way.

202 Q. Sometime prior to April, '71, I take it that the company began to learn of the product being lost, for lack of a better term, in the sewerage system?

A. Prior to '71, yes, sir.

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203 Q. Aside from going into the sewerage system, were any other ways discovered in which the product was finding its way into the environment?

A. I don't know of any other report or study that specifically demonstrates that polychlorinated biphenyls got into the environment via other means.

204 Q. Do polychlorinated biphenyls exist in nature? That is to say, in a natural state rather than as a result of manufacturing?

A. I do not know.

205 Q. Does Monsanto, so far as you know, have any indication that PCB's exist in nature as distinguished from being a manufactured product?

A. Yes.

206 Q. What are those indications?

A. From discussions with some of our research people, I am led to believe that certain reactions occur in nature that could result in chlorinated biphenyls. One example given, for instance, and this is a fairly recent report, incidentally, a researcher has reported to have found that DDT when it degrades results in some chlorinated biphenyls. There is a recent report

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that the chlorination of municipal sewerage which contains certain kinds of wastes could result in chlorinated biphenyls. That is all I know about natural occurrence other than manufactured.

207 Q. From what you have described, it would seem that the other possible sources are the breakdowns of other chemicals?

A. The breakdown of one chemical and it could be called a buildup in another instance, chlorination.

208 Q. Have you found any evidence - and I am using this perhaps in a restricted non-scientific sense - that PCB's exist in nature in consequence of nature's own production like water or any other basic chemical?

A. We don't know that.

209 Q. Has Monsanto done any specific research to determine what other sources of PCB's in the environment there may be other than the product as manufactured by Monsanto?

A. I'd like to ask what is meant by research. Does this mean laboratory type of studies in which chemicals are involved?

210 Q. Let me change research to investigation.

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A. Investigation?

211 Q. Yes.

A. We have been very interested in the possibility of this occuring primarily because PCB's, polychlorinated biphenyls, are reported as occuring in areas where one would not suspect them to occur as a result of an industrial exposure. And this leads to some thought that there must be other means, other ways, for these materials to be formed. So stimulated by this kind of thinking, Monsanto - individuals within Monsanto, let's say - have been on the alert making library searches, contacting anybody that they think might be knowledgeable in an attempt to determine this. That is the extent of our investigation.

212 Q. Can you give me any examples of industrial sources?

A. These are the common situations where a river which is known to be near a heavy industrialized location is found to contain polychlorinated biphenyls.

213 Q. Has the investigation produced any results which are persuasive to Monsanto as indicating that there are sources of PCB's other than manufactured sources?

A. To Monsanto, yes.

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214 Q. All right; can you enlarge on that to explain why the company is persuaded?

A. We are puzzled, for instance, in being told that in remote - I call them remote areas - away from industrialized or heavy populated areas, for example, some swamplands in Arkansas, are reported to contain polychlorinated biphenyls. We can't explain from our knowledge of the applications of polychlorinated biphenyls why the material would be there. We are puzzled by the presence of polychlorinated biphenyls found in the Antarctic. We can't understand why it is there. It just doesn't make sense to us. So we have to then conclude right or wrong that there must be another source of some type.

215 Q. Have there been any reports of polychlorinated biphenyls in the ocean?

A. Yes.

216 Q. What, if any, particular investigation has Monsanto done to pin down the authenticity of reports such as the Arkansas swamp, the Antarctic or the oceans?

A. Nothing specific.

217 Q. Is there in lay terms again some relationship between PCB's and pesticides like DDT?

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A. The relationship is a chemical one and it is primarily one specifically with reference to DDT, in that both of these chemicals contain what is known among chemists as two benzene rings. A benzene ring in chemistry is a configuration of carbon in which six carbon elements are very closely related to each other and they form a unit and both DDT and polychlorinated biphenyls have two of these. They are connected to each other differently. That is the only similarity. I retract that. The other similarity that both of these chemicals have in addition to these two benzene rings, they also contain chlorine in varying amounts.

218 Q. Has Monsanto found any catalyst that will convert DDT into PCB's or vice versa?

A. No, sir.

219 Q. Do you know of any process by which one can be converted to the other?

A. I have read of this work that I referred to earlier where DDT is claimed to form polychlorinated biphenyls and as I understand this report, it refers to the degradation or the decomposition of DDT in the presence of light, both sunlight and artificial light.

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220 Q. Is there any reasonable likelihood that a competent scientist trying to evaluate one or the other would confuse PCB's and DDT?

A. At what point in time, sir?

221 Q. Well, in making a chemical analysis, say, of an unknown subject?

A. Today?

222 Q. Yes, today.

A. Today a competent scientist should not make that mistake.

223 Q. When did we reach the point in time wherein your judgement a competent scientist should not make such a mistake?

A. Late '68.

224 Q. Is the PCB a subject that breaks down or deteriorates over the course of time?

A. Yes.

225 Q. How long does it take?

A. It varies from type of PCB to type. As you know, there are 210 types of polychlorinated biphenyls. There is evidence that they do break down. Those containing the least amount of chlorine appear to break down in a

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matter of hours under the right conditions out in the environment. Those that contain a higher chlorine content seem to be more resistant. We have not been able to determine how long it will take.

226 Q. I have heard reference from time to time to so-called half life - does that have any significance in the content - - -

A. It is my understanding that this expression half life has significance when dealing with a single chemical entity, but when applied to a mixture in which the components of the mixture each have varying half lives, it becomes rather meaningless.

227 Q. So you couldn't put a half life on PCB's?

A. We have tried, but haven't been able to come up with anything significant.

228 Q. The PCB's which I understand that contain more chlorine have the longer life generally?

A. Generally.

229 Q. At the upper end of the various 210, what can you give us as an indication as the length of life of those containing the most chlorine?

A. I don't have any. I haven't been able to determine it.

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230 Q. You have indicated those with less of a life have perhaps a few hours?

A. Yes, sir.

231 Q. What is the maximum life of which Monsanto is aware?

A. I don't know. We don't have a number, at least I have never heard of a number.

232 Q. I guess what I am driving at, if you can say that there are some indications that some only last for a few hours - - -

A. Yes, sir.

233 Q. As far as Monsanto knows, what is the outside limit of longevity?

A. I think maybe I can make it clearer in describing the tests we have done that led us to this few hours understanding.

234 Q. All right.

A. In our laboratories, we have conducted studies in which we exposed the various kinds of polychlorinated biphenyl mixtures to three different kinds of systems that simulate nature. One of them is a miniature municipal treatment plant in which we put a culture that we have taken from a nearby community and bubble

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air through it simulating the sewerage plant and we take samples and determine the polychlorinated biphenyls. There we found that the lower types of chlorinated biphenyls are gone within a 24-hour period or a 12-hour period that we sampled. And that is the information that leads us to think that in hours some of them vanish. They disappear. There are others that after three months under these conditions are still there. Now, we have not run the tests on and on and on, so we don't know beyond that three-month period what will happen.

235 Q. What is the likelihood that PCB's manufactured as early as 1929 may still be kicking around?

A. I don't know.

236 Q. You don't know?

A. Let me clarify that. There are transformers still in use today that were filled back in 1929, 1930, containing that fluid, so in that instance I can tell you they are still there. I cannot tell you anything about what happened to material that might have leaked from a unit built at that time out into the soil and into the river, I can't, no one knows.

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237 Q. While you were plant manager at Anniston, did you receive any complaints with respect to unexpected results from PCB's?

A. No, sir.

238 Q. Did you receive any complaints of the effect of PCB's on the environment while you were plant manager at Anniston?

A. No, sir.

239 Q. I am not inquiring now if they were valid complaints, but just complaints?

A. Just a complaint issued to the plant, no, sir.

240 Q. Did you receive any complaints of the effect of PCB's on animal life during that time?

A. No, sir.

241 Q. Any complaints with respect to the effects on human life?

A. No, sir.

242 Q. Now, from the time you finished at Anniston until around mid-1971, you indicated that you were concerned only with PCB's?

A. Correct.

243 Q. Will you describe what your concern was with PCB's

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during that time?

A. Perhaps the word concern is a poor one.

244 Q. Feel free to change it, I am just using that as a point of reference.

A. My assignment was to become as knowledgeable as I could about polychlorinated biphenyls in terms of how they were being used, who was finding them in the environment, did we have appropriate analytical methods, what universities were active, what government agencies were thinking, what foreign governments - not only the USA, but foreign governments - what they were thinking. That was my general assignment and to feed this back into Monsanto along with any recommendations that I might have arrived at from analyzing this information.

245 Q. When you were plant manager in Anniston, to whom were you responsible for purposes of environment?

A. I was responsible to an individual who had the title of Director of Manufacturing.

246 Q. Now, was that Director holding some job in the predecessor of the functional products group? Let me strike that out, it is going to confuse the whole thing. Am I correct in assuming that the functional

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products group is now directly responsible for the operations in Sauget, Illinois?

A. No, sir, the functional products group; more specifically the specialty products group within the functional products group, is responsible for the technology, the marketing, the profitability of these products. The operation of the manufacturing unit lies - is the responsibility of the group which I referred to earlier as the Rubber and Process Chemicals Group.

247 Q. Do you function now in your present job as quality control?

MR. PETERS: Of what?

THE WITNESS: I don't know what you mean there.

248 Q. (By Mr. Spellman) Is there anyone working within the company having titles like or similar to quality control which are different from yours?

A. There is no one that I am aware of that in his title has the words quality control.

MR. PETERS: I think he has answered that in the interrogatory, but you can go ahead.

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MR. SPELLMAN: That may be, but I just haven't had a chance to read them.

249 Q. See if I can relate back a minute to get myself straightened out. Sauget does its manufacturing now as part of what group in the chain?

A. I think - let me see if I can help clarify this picture. The Sauget, Illinois, operation is a large complex of chemical manufacturing units. Predominantly the products manufactured in these mini-units scattered throughout this hundred-acre location come under the responsibility of the Rubber Process and Chemicals Group. As a result of this predominance of products, they are given total responsibility for the plant so that the people in the plant who are assigned the job, if you will, of manufacturing polychlorinated biphenyls report to the Rubber Process and Chemicals administratively.

The specialty products group, on the other hand, which market the polychlorinated biphenyls, put in the technology input and concerns itself with budgeting costs and what it costs to make the product and is it a profitable kind of operation.

250 Q. And that is the same group concerned with whether or

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not the product being manufactured meets the specifications prescribed by the group?

A. Now at the plant there is a chief chemist. He is an individual that has the title chief chemist who administers the analytical laboratory which, in turn, looks at appropriate samples of the materials either in process or finally shipped to see that they meet prearranged or preconceived specifications. He is the man, then, who is responsible that the material being shipped meets these specifications.

251 Q. And does he have some responsibility to the functional products group?

A. Not directly, no, sir. He is presumably an impartial individual who sees the results of the analysis and prepares it to the specification sheet. If the specifications are met, the material is approved for shipment. If they are not met, he disapproves it and the material must be either reworked or destroyed.

252 Q. And are any reports of that situation presented to the functional products group?

A. No, sir, the reports are in the records of the laboratory and they are available to this group.

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253 Q. How do you know in your present function what is going on at Sauget?

MR. PETERS: On PCB's?

MR. SPELLMAN: Yes.

THE WITNESS: I only know by exception - - -

MR. PETERS: Is that a-c-c or e-x-c?

THE WITNESS: E-x-c-e-p-t-i-o-n, and I use that word hesitantly because this just doesn't happen for this line of products because the quality required in the electrical industry is so critical that they cannot ship out material that doesn't meet all of the specifications, so I really don't hear anything because the material that leaves the plant must meet that specification.

254 Q. (By Mr. Spellman) In terms with your responsibilities, do you have to be a self-starter sort of to inquire into the plant?

A. Yes.

255 Q. All right; now, if you will, let's go back to Anniston when you were plant manager. Who was then responsible

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to see that the product met specifications of whichever group then prescribed what the specifications were to be?

A. The ultimate responsibility is the plant manager's.

256 Q. Did you have a chief chemist?

A. I had a chief chemist, yes, sir.

257 Q. At that time, what group prescribed the specifications for your PCB's?

A. It is the same group that prescribes it today.

258 Q. Was there anyone at that time while you were at Anniston concerned in any way with the kind of function which you now serve in respect to PCB's?

A. No, sir.

259 Q. Was there anyone in the company to whom you were responsible as plant manager concerned with the environment and the effects of products being manufactured in Anniston?

A. This responsibility is really shared by - - - The responsibility for the environment and the effect of our product on the environment is shared along with all other responsibilities in the organization of the company. There wasn't at that time any one individual

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who was assigned this responsibility exclusive of all other individuals.

260 Q. So there were a multitude of people generally responsible?

A. Just as there are for safety and housekeeping and product quality, costs and so on, yes.

261 Q. Am I correct in assuming that there was no one person anywhere within the company who was responsible to oversee the products manufactured at Anniston and the effects that they might have on the environment?

A. No one person, that is correct.

262 Q. Now, can you tell me what it was that prompted your transfer from the task of managing the Anniston plant to the task of learning everything that you could about PCB's?

A. I don't know that there is any one specific incident or one specific problem. As I understood it, the polychlorinated biphenyls became of greater and greater interest to government regulatory people, to academic individuals. It became a situation really where there was so much going on that no one individual in our company could devote enough time to gather it all

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together to make some sense out of what really was going on and it was decided at that time that it might be of some help if one individual who knew something about the product at least as to how it was manufactured be assigned this responsibility and I was asked to take it on.

263 Q. I take it when - did you have a title in that job?

A. At that time I carried the title of Manager-Environmental Control.

MR. PETERS: That was January, 1970?

THE WITNESS: 1970, correct.

MR. PLAUT: Manager-Environmental Control?

THE WITNESS: Correct.

264 Q. (By Mr. Spellman) Now, you indicated that you went from Anniston into this PCB job in 1969, I take it from what you just said that there was no title attached initially?

A. I am sorry, in 1969, December to be more specific, I was approached to take this assignment. I accepted and reported on the job right after the first of the year and at that time the title Manager-Environmental Control

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was selected for lack of anything better. We had to call it something.

265 Q. Was that the first occasion of which you were aware that anyone within the company was assigned a job with a title of that nature?

A. That is right.

266 Q. Now, when you took on the assignment as Manager of Environmental Control, were there any other persons in any other branches or divisions of the company having the same title or a similar title?

A. No, sir.

(Whereupon, the luncheon recess was taken.)

267 Q. (By Mr. Spellman) Mr. Papageorge, before we broke for lunch we were talking about the environmental title that you took on about January of 1970.

A. Yes.

268 Q. And as I understood, there was no other person in the company having the same or a similar title, is that correct?

A. That is correct, to my knowledge.

269 Q. Is it correct also that from early January, 1970 until

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you acquired your present title, your only concern was with PCB's?

A. No, sir.

270 Q. For how long after January, '70, was your only concern PCB's?

A. For about a year and a half, until about mid-1971.

271 Q. Maybe I lost track of the date, isn't that coincident with your taking on the title of Manager of Product Acceptability?

A. No, sir, I believe I mentioned previously that somewhere around about May, 1971, I was given responsibilities for additional products to be familiar with.

272 Q. That is right. Were these additional products in any way related to PCB's?

A. No, sir.

273 Q. Were they in the Hydrocarbon field?

A. Some of them.

274 Q. Were any of the concerns for which you were examining these other products similar to the concerns which you had in respect to PCB's?

A. Similar in that governmental agencies could have been involved. Similar in that laboratories at universities

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could have been involved. In that sense, similar, but not in chemical and physical properties.

275 Q. Was it in relation to the environment that you took on these additional products?

A. Yes, sir.

276 Q. Who is Desmond Hosmer?

A. Desmond Hosmer is a Monsanto employee and I believe his title is Director of Environmental Control and Utilities. Now I am not positive of that.

277 Q. Is he employed by one of the operating companies?

A. No, sir. Yes, I am sorry, he is employed by the operating company.

278 Q. Which one?

A. Monsanto Industrial Chemicals Company.

279 Q. How does his work relate to yours?

A. Mr. Hosmer is the supervisor of a group of employees whose concern is related to our plants and their affluence environmentally speaking.

280 Q. Are you two on different levels of the hierarchy of the company?

A. I think we are about the same level, sir.

281 Q. Now, relate your work objectives between the two of

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you?

A. We compare notes in areas of mutual interests so that we are aware of any new developments that each of us might have heard of or read about.

282 Q. Has he conducted any studies with respect to the presence of PCB's in the affluence of the Monsanto plants?

A. He personally has not, but he is aware of these studies and should coordinate any activities or any programs related to these studies, yes.

283 Q. Would he make reports to you or supply you with the reports resulting from the study of Monsanto's affluent?

A. On occasion, he may.

284 Q. But it is not a matter of practice?

A. That is correct.

285 Q. Who is Mr. Throdahl?

A. Mr. Throdahl is a Vice President of Monsanto Company and, as I understand it, his areas of responsibility involve the technical activities of Monsanto.

286 Q. What do you include within the technical activities?

A. Such things as our central research activities. Primarily our central research organization, our

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medical department, our new enterprises division and he has also been assigned the responsibility to oversee the environmental concerns for Monsanto.

287 Q. In terms of the Monsanto Company of which he is a Vice President, is there a separate administration at the top of all the division structures?

A. Yes, sir.

288 Q. And I take it that Mr. Throdahl is a part of that top administrative group?

A. That is right.

289 Q. Does he in consequence of that have general oversight of all environmental problems throughout the company?

A. That is correct.

290 Q. Do you report to him?

A. Not directly.

291 Q. To whom do you report?

A. I report to Mr. Winthrop Corey.

292 Q. And who is he?

A. He is the General Manager of the Functional Products Group. I am sorry, it is not General Manager, it is Group Director of the Functional Products Group.

293 Q. Does Mr. Corey report directly to the Monsanto Company?

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A. No, sir.

294 Q. Does he report to any individual at the top structure of the Monsanto Company?

A. No, sir.

295 Q. Does he report to new enterprises?

A. No, sir.

296 Q. To whom does he report?

A. He reports to Mr. Harold Bible.

297 Q. Who is he?

A. Managing Director, Monsanto Chemicals Company.

298 Q. And to whom does he report?

A. He reports to the President of Monsanto.

MR. PLAUT: May I interrupt just a second; is Industrial Chemicals Company, is that a separate division of Monsanto Company?

THE WITNESS: Yes.

MR. PLAUT: Or is that a separate corporation?

THE WITNESS: No, it is an operating division within the corporation.

MR. PLAUT: Thank you.

299 Q. (By Mr. Spellman) There is no one to whom you report,

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I take it, in between your level and the level on which Mr. Throdahl works? In other words, no one to whom you report to directly?

A. No, sir.

300 Q. Sometime earlier, Mr. Papageorge, you indicated, as I remember, 210 different ways of structuring the thing and still have a PCB?

A. Yes, sir.

301 Q. How many of those ways of structuring are utilized by Monsanto in manufacturing its product?

A. I don't know that we have identified all of them, but as I recall, about 80 or so are involved in any one mixture.

302 Q. In other words, say you were going to manufacture a batch of Aroclor; in any given batch of Aroclor, there may be more than one of the possible combinations to produce PCB's?

A. There is always more.

303 Q. There are several products other than Aroclor which are manufactured which include PCB's, are there not?

A. There are other trade marks used to identify mixtures of these polychlorinated biphenyls.

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304 Q. Does the name Aroclor signify a specific mixture?

A. No.

305 Q. What does the name Aroclor imply?

A. The Aroclor is a Monsanto trade mark to describe - at one time it described two families, if you will, of mixtures of chemicals.

306 Q. Chemicals in addition to PCB's?

A. One of those families are properly classified as polychlorinated biphenyls, the other group is the polychlorinated terphenyl.

307 Q. And what is the basic difference between them?

A. It is a chemical difference in which there is an additional benzene ring in the terphenyl group as compared to the biphenyl group.

308 Q. I take it, then, that there are other trade names than Aroclor manufactured by Monsanto?

A. Yes.

309 Q. And do those other trade names include something in addition to PCB's?

A. Yes, some of them.

310 Q. All right; are they distinguishable by the additional element or by the amount of PCB percentage-wise?

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A. You can distinguish them in either regard. You can denote them by amount of PCB present or amount of other material present.

311 Q. Can you tell me the range of percentage of PCB in Aroclor?

A. 100 per cent in Aroclor. Let me retract that, it is 100 per cent in Aroclor's identified by the digit 1200 something.

312 Q. In other words, if you said Aroclor 1248 - - -

A. That is 100 per cent polychlorinated biphenyl.

313 Q. Does the number 12 in that number have any significance?

A. The number 12 denotes chlorinated biphenyl.

314 Q. What does the 48 mean?

A. 48 per cent by weight of that material is chlorine.

315 Q. But the product still is regarded as being 100 per cent PCB?

A. Correct.

316 Q. And anything in the 1200 series, I take it, would be a chlorinated phenyl?

A. Not phenyl, biphenyl.

317 Q. What is the range of Aroclor with respect to percentage of chlorine?

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A. This depends on the mixture.

318 Q. I guess what I am asking is what mixtures do you put out? The minimum percentage and maximum percentage and still go under the label Aroclor.

A. At what point in time?

319 Q. Try to take it for now.

A. Today we produce mixtures of polychlorinated biphenyl with 21 per cent, 42 per cent, 54 per cent chlorine.

320 Q. There are three Aroclors or Aroclors with three different percentages of chlorine now being produced?

A. That is correct.

321 Q. Can you tell me when you began producing only those three?

A. Late '71, early '72. This was coincident with the period when we restricted our sales to the electrical industry.

322 Q. When was the last prior change in the varieties available, based on percentage of chlorine?

A. I don't know that I know that date. I have never heard it.

323 Q. Can you tell me as of the time in January of 1970 when you became concerned only with PCB's, what different

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percentages were available in Aroclor?

A. At that time, we had 21 per cent, 32 per cent, 42 per cent, 48 per cent, 62 per cent, 60 per cent and 68 per cent, and for a very brief period at one time I am told they manufactured a 72 per cent.

324 Q. I take it that was before 1970?

A. Yes, sir.

325 Q. Other than the 72 per cent at some time prior to 1970, were there any differences in the percentages available?

A. Not that I am aware of.

326 Q. Did the availability continue from January of '72; that is, the percentages you just described, until late '71 when it was reduced to three?

A. The 32 per cent material was not available about mid-1970. The 48 per cent material was phased out gradually about the middle or third quarter of '71. The 62 and 68 per cent material was not available as of the August 30, 1970, date.

327 Q. As I understand, there were PCB's in products other than Aroclor; that is, by trade name?

A. Correct.

328 Q. Were the other trade name products concerned with

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100 per cent Aroclor, or was there some other mixture, some other element in it?

A. Some of each.

329 Q. Some of each of what?

A. Some were 100 per cent polychlorinated biphenyl and some were mixtures.

330 Q. I think somewhere in the interrogatories you have listed the products, have you not?

A. Yes.

331 Q. Referring to Interrogatory No. 4 - incidentally, for the record, has the original been signed?

MR. PETERS: Yes.

THE WITNESS: Yes.

332 Q. (By Mr. Spellman) Those are all of the trade names, I take it, plus the one Pyranol which was given to us this morning under which Monsanto has sold PCB's?

A. No, sir, these are the trade names that we are aware of. Some of them are Monsanto products and some of them are materials produced by others.

333 Q. All right; would you tell me from the list in answer to Interrogatory No. 4 which are Monsanto products?

A. Those that are marked with an asterisk.

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334 Q. What is the difference between Therminol and Aroclor?

A. I find that difficult to answer primarily because the word Therminol is used for mixtures of polychlorinated biphenyls and it is used for other chemical mixtures that are not polychlorinated biphenyls. Therminols are used for mixtures of polychlorinated biphenyls and also used for mixtures describing polychlorinated terphenyls.

335 Q. Let me try it this way. Is Therminol 100 per cent PCB?

A. Not always.

336 Q. Aroclor is always 100 per cent PCB?

A. No, sir, it could be a chlorinated terphenyl.

337 Q. How can you tell by designation which is which?

A. Of which?

338 Q. Let's say I have Aroclor 1248.

A. That is 100 per cent polychlorinated biphenyl.

339 Q. How would you designate terphenyl?

A. By the 5400 designation.

340 Q. So it would come out like 5432 or something like that?

A. 5432, yes.

341 Q. Have you had any complaints or made any studies in respect to terphenyls equivalent to complaints and studies you have made with respect to biphenyls?

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A. Yes and no. I don't know quite how to answer that. We have had no complaints on the chlorinated terphenyls. We had made some studies with chlorinated terphenyls that were similar to some studies that we made with chlorinated biphenyls.

342 Q. Now, let's see if we can get back to the Therminol. Is Therminol sold for different uses than Aroclor, or is it sometimes sold for the same uses?

A. Therminol is sold for heat transfer purposes.

343 Q. Aroclor is not?

A. Monsanto does not sell Aroclor for heat transfer purposes and did not in the past. This does not mean that someone could have bought it and put it in a heat transfer system.

344 Q. Over how long a period has Monsanto manufactured and sold something under the trade name Aroclor?

A. I don't know the exact date, but it is sometime in the '30's, as best I recall, that the Aroclor trade mark was used.

345 Q. For what uses did Monsanto sell it? In other words, what did Monsanto expect it to be used for?

A. At what time?

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346 Q. Starting in the '30's.

A. In the '30's, the initial use was as a dielectric material in fluid in electrical equipment.

347 Q. That is the only use for it now?

A. That is the use for which it is sold today.

348 Q. Prior to the limitation for dielectric use, what other uses was it sold for?

A. There were, I think you will find in the interrogatories, a general classification of this. Such things as the heat transfer application we spoke of, as an ingredient in fire resistant industrial hydraulic fluids, as an ingredient in waxes, in some coatings, surface coatings, in this carbonless reproduction paper application, as an ingredient in caulking material, as a plasticisor in chlorinated rubber such as that used in industrial gasket material. I can't remember any more.

349 Q. I am not trying to tie you down, I am just trying to get some idea. You said that is more fully answered in the interrogatories?

A. As I remember, there is a question on that.

350 Q. In a related area this morning I asked about the use of PCB's in what I thought I said were plastic bags;

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and I am told I didn't use the word plastic. Are PCB's used in the manufacture of plastic bags?

A. Not to my knowledge.

351 Q. When did you begin to sell Therminol for use as a heat transfer agent or fluid?

A. From reading reports, I am led to believe that the Aroclors were sold as heat transfer fluids and the trade mark Therminol was applied to these sometime in the '50's at which time we made a concerted effort to make a business out of this.

352 Q. Is this the difference, then, between Therminol and Aroclor, basically a trade name difference?

A. That is correct.

353 Q. So that the chemical ingredients are essentially the same?

A. For those Therminols that contain polychlorinated biphenyls.

354 Q. What did the Therminols contain other than polychlorinated biphenyls?

A. There were some Therminols that contained Hydrocarbons that are not in any way related to the chlorinated biphenyls. They are a different chemical structure.

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355 Q. Now, what is Santotherm?

A. Santotherm is the trade mark which was used outside of the U.S. for the same material that was sold as Therminol within the U.S.

356 Q. So, again, the only difference between those two is the difference in the name for some business purpose?

A. Correct.

357 Q. What is Pydraul?

A. Pydraul is Monsanto's trade mark for fluid mixtures that are fire resistant and they are used in industrial hydraulic systems.

358 Q. What is the difference between Pydraul and Aroclor?

A. Aroclor is 100 per cent polychlorinated biphenyl, Pydraul contains as one ingredient of several one of the Aroclors. I should be more correct in saying contained, past tense.

359 Q. I take it that is not being manufactured now?

A. We manufacture Pydrauls without polychlorinated biphenyls.

360 Q. When did you start using the trade name Pydraul?

A. I don't know.

361 Q. Tell me within a frame reference of five years, say?

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A. '50's, 1950's.

362 Q. And previous to the sale of products under the trade name Pydraul, was Aroclor sold for the same purpose?

A. No, sir.

363 Q. What does the trade name Santovac mean?

A. That is the trade name applied to Monsanto's fluids that are used in vacuum pumps.

364 Q. How is that distinguished from Aroclor?

A. Some of the Santovacs are identical to some of the Aroclors.

365 Q. How long has that trade name been in use?

A. I do not personally know.

366 Q. Around the '50's somewhere?

A. Maybe the '60's, it is more recent.

367 Q. Now, is the additional Pyranol this morning, is that a Monsanto product?

A. I don't know what you mean by a Monsanto product. We manufacture it.

368 Q. Is that a trade name?

A. It is a trade name, but not Monsanto's.

369 Q. You manufacture it for somebody else?

A. Yes, sir. I have to be careful here, we manufacture

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a material which is sold under the name Pyranol which is a trade mark that belongs to one corporation, but the material is sold to anyone who qualifies under today's restrictions as an approved polychlorinated biphenyl customer.

370 Q. Who does the trade name belong to?

A. General Electric Corporation.

371 Q. What is Pyranol?

A. Pyranol is the trade name applied to several mixtures of fluids used in the electrical equipment industry and these mixtures contain polychlorinated biphenyl as an ingredient.

372 Q. Can you tell me how long Monsanto has been manufacturing the product known as Pyranol?

A. I suspect almost from the very beginning of the polychlorinated biphenyl manufacture, close to 40 years.

373 Q. Is that - does that tend to be limited to dielectric use?

A. Yes, sir.

MR. PLAUT: Off the record.

(Discussion off the record.)

374 Q. (By Mr. Spellman) Would you just for clarity, Mr. Papa-

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george, explain the terminology dielectric use?

A. The dielectric fluid is a fluid that is used in the manufacture of electrical transformers and capacitors in which this fluid acts as an insulator. I don't know how quite to say it, to keep the electricity where it belongs - I don't know how else to describe it. I don't think that helps you, really, does it? I do not claim to be an expert on transformers, but I have seen them being built and I will pass on to you my understanding of what I saw.

The transformer is a device that involves two coils of wire normally made of copper, wound around a steel core. And the copper coils and the steel core are supported on insulating blocks made of wood and plastic kind of material. Not conducting material. These combinations of core and coils are encased in a steel box. In this steel box which is hermetically sealed, they introduce a liquid, a fluid, which is primarily there to act as a coolant to dissipate the heat which results from the introduction of electricity to these coils.

At the same time, this fluid

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cannot be a conducting fluid. It must not conduct electricity so that electricity doesn't flow into the wrong portion of this combination of coil and steel. That is basically what a transformer looks like internally.

Now, the capacitors are made by tightly winding alternate layers of craft paper and aluminum foil in a very tight bundle and from different portions of this continuous aluminum foil there are tabs exposed. This entire tightly wound coil is immersed into a canister. Now, the paper is not a perfect insulator, it has flaws in it, it has air space and moisture and what have you.

Now, in order to make this paper a better insulator to keep these layers of aluminum insulated from each other, they introduce a fluid. It impregnates the paper making it a better insulating layer. That is the purpose of a dielectric fluid.

375 Q. We have one on the list called Montar; what is that?

A. Montar was the name, trade mark, applied to the residual material that resulted from the manufacture of polychlorinated biphenyls.

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376 Q. What is its use?

A. At one time it was used in some of these applications I mentioned earlier, in coating applications, in some of these caulking materials, this kind of thing. In essence, it is a crude polychlorinated biphenyl, unrefined.

377 Q. Is that the principal difference between Montar and Aroclor, that it is more or less unrefined?

A. That is correct; it is what is left when we distill off the high quality material.

378 Q. With respect to each of the products on the list in response to Interrogatory No. 4, are they graded or identified by numbers similar to the 1200 series or the 5400 series with respect to Aroclor?

A. Is your question directed at all of these?

379 Q. No, just the ones we have been discussing here.

A. Yes, sir, there is usually - let me think here a minute - there is always a number or a combination of letters and numbers that is used along with the names listed to identify the particular polychlorinated biphenyl mixture or particular formula which includes polychlorinated biphenyls as an ingredient.

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380 Q. With respect to all of them, is the last two digits of the number indicative of the percentage of PCB's?

A. No, sir, that applies only to the 1200 series of Aroclors.

381 Q. And that would indicate only the percentage of chlorine?

A. Yes, sir.

382 Q. How can we tell from examining a number attached to one of these other products what the percentage of PCB's is or the percentage of chlorine, as the case may be?

A. You cannot tell.

383 Q. To clear one thing, only the ones as I understand marked by the asterisk in answer to Interrogatory No. 4 are the products manufactured and sold by Monsanto?

A. More correctly, those are Monsanto's trade marks that have been used to describe products that contain poly-chlorinated biphenyl.

384 Q. The additional Pyranol is something manufactured by Monsanto, but really belongs to GE?

A. The trade mark belongs to GE, yes, sir.

385 Q. Now, a question has been raised about the FR series

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in Therminol.

A. The designation FR when used along with Therminol describes a heat transfer fluid which contains 100 per cent polychlorinated biphenyl.

386 Q. Is there any way you can describe for us to determine once we know what the product is of this group listed in answer to Interrogatory No. 4 how much of the polychlorinated biphenyl there is in the product?

A. The only way that one who is not familiar with these products could determine it would be to conduct analytical analyses.

387 Q. The Aroclor 1200 series is 100 per cent PCB?

A. Correct.

388 Q. The Therminol FR series is 100 per cent PCB?

A. Correct.

389 Q. What other series are there for Therminol?

A. There are the number series 44, 55, 66, 77, 88, there is a string of them.

390 Q. Now, are those the last two digits or the first two you are giving me in this series?

A. Just two alone.

391 Q. Do they contain differing amounts of PCB?

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A. They contain no polychlorinated biphenyl.

392 Q. Are the FR series the only ones that contain any percentage of PCB's?

A. That is correct.

393 Q. How about the Santotherms?

A. Santotherms are designated identically as the Therminols.

394 Q. So there are an FR series of Santotherms and that would be 100 per cent PCB?

A. That is correct.

395 Q. And if there is not an FR, there is no PCB?

A. That is correct.

396 Q. How about the Pydraul, or was Pydraul the one that you said doesn't contain PCB's anyway?

A. Well, they do not contain PCB's today.

397 Q. But they did initially?

A. Yes, sir.

398 Q. And that stopped a year or a year and a half or two years ago?

A. The Pydrauls were modified beginning in June, 1970, in June, 1970, the Pydrauls were reformulated and finally the last of the series was reformulated to remove polychlorinated biphenyls by April, 1971.

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399 Q. Prior to that reformulation, did you have a Pydraul series which contained 100 per cent PCB's?

A. No, sir.

400 Q. How did you identify these series of Pydrauls if there were more than one?

A. They were identified by a series of numbers and letters which had no particular significance.

401 Q. So you couldn't tell from the trade name Pydraul or the number attached to it how much of PCB there was in it?

A. That is correct.

402 Q. I take it that back at the plant some place they would know?

A. Yes, sir.

403 Q. When a customer orders one of the Monsanto trade names and they want a particular percentage of PCB's or no PCB's, do they tell you what they want?

A. This depends on what they are ordering, sir. Are we still talking about Pydrauls now?

404 Q. Yes.

A. On the order of their Pydrauls, they know from experience that Pydraul of a certain type is the fluid

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used in their machine and that is the type they order by that designation.

405 Q. Is that something they learn by trial and error or is that a recommendation which Monsanto makes to a customer for certain kinds of equipment?

A. I suspect it is a combination of both. Not only Monsanto's recommendation, but the manufacturer of the machine would recommend to the user what fluids to put into the machine.

406 Q. How many different series were there in any point of time, the maximum number?

A. Pydrauls?

407 Q. Yes.

A. I have never counted them. This was a very dynamic situation with new Pydrauls being developed quite frequently. At any point in time there were - and this is a guess on my part - as many as a dozen different Pydrauls undergoing revision and changes with new numbers being issued every so many months. No particular pattern, it was a result of a continual research program.

408 Q. Was there more change in the Pydrauls than in some of

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the other brand names or trade names?

A. More of a change compared to what, to the rest of these trade marks, you mean?

409 Q. Yes.

A. Yes.

410 Q. And is that the reason why you can't just take a series of numbers and know from the number how much content of, say, PCB's there were?

A. I just expect that is one of the reasons that the numbers lost their significance after continual change, yes.

411 Q. How about the Santovac, can you tell by reference to any number or numbering series what the percentage of PCB's is?

A. Yes, the Santovac Roman Numeral I and Roman Numeral II were 100 per cent polychlorinated biphenyl.

412 Q. And did those, other than Roman Numeral numbers I and II have no polychlorinated biphenyl?

A. That is correct.

413 Q. And how about in respect to the Montar?

A. Montar, there was as many Montars as there were Aroclors numbered 1 through 9 as best I can remember. I have

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never counted all the Aroclors personally. Now they would have a high concentration of polychlorinated biphenyl, but being residues, they contained materials that were never analyzed. It is just a complex mixture.

414 Q. And all of the products going out under the trade name Montar had this high concentration of PCB's plus this other material?

A. Yes, sir.

415 Q. Is Pyranol classified in any similar fashion?

A. You are talking now again about numbers and digits to designate the difference in Pyranol, yes.

416 Q. How was that classified?

A. This has changed through the years and has changed by the owner of the trade mark. I have never personally tried to memorize these numbers, but they are combinations of digits and letters which refer to the General Electric recipe that is used to make the mixture.

417 Q. Are some designations identifiable as containing 100 per cent PCB's and others none?

A. I don't know of any Pyranol that is 100 per cent polychlorinated biphenyl.

418 Q. Are they all a mixture of various proportions of PCB

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and something else?

A. Correct.

MR. MUIRHEAD: Off the record.

(Discussion off the record.)

419 Q. (By Mr. Spellman) Mr. Papageorge, to see if we can clarify the record a little bit in light of what occurred off of it; will you explain again on the record what the relationship is between so-called pure PCB's and those products which have other things added and the relationship of percentages of chlorine?

A. I will try.

420 Q. All right.

A. As commercially produced, polychlorinated biphenyls always end up at mixtures of the many possible isomers. And in any commercial mixture, there may be 50 to 70 different isomers in this mixture. Monsanto sold these mixtures under the trade mark Aroclor, using the 1200 designation to limit the Aroclors to the polychlorinated biphenyls and the last two digits of the 1200 series describes the per cent by weight of chlorine in that particular commercial mixture.

These same mixtures in turn, were

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sold under another trade mark after they had been refined to remove any impurities that may have been present and sold as Therminols. These Therminols were designated in addition by the letters FR followed by a number. So we have a situation where the expression Therminol FR and the expression Aroclor could be applied to the same commercial mixture.

In addition, some of the Aroclor 1200 series were used as ingredients in the formulation of industrial hydraulic fluids that were sold under the trade mark Pydraul. For example, Aroclor 1242 could be one ingredient of many in the manufacture of a Pydraul let's say XYZ. But further, these Aroclors were ingredients in the production of dielectric fluids sold under trade marks owned by other companies such as Pyranol and Inerteen. Inerteen is the Westinghouse trade mark.

421 Q. When is the first occasion that you personally received any knowledge of a claim against Monsanto for either property damage or some other claimed loss in consequence of PCB's?

MR. PETERS: This is prior to

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April 1, '71?

MR. SPELLMAN: I would assume so.

MR. PETERS: If you know.

THE WITNESS: I don't remember any claim for loss brought to my attention prior to April, 1971.

422 Q. (By Mr. Spellman) I may have misunderstood, Mr. Papageorge, I had this impression just for purposes of context that one of the factors among many which caused you to be assigned to study in and become informed on PCB's beginning in 1970 in January, was that there was some litigation pending?

A. No, sir.

423 Q. Then I misunderstood you. When did you first learn of any litigation against Monsanto in consequence of the use of PCB's?

MR. PETERS: Objection, please. You can answer, if you remember.

THE WITNESS: I cannot keep my years straight. It seems to me about November, '71, or thereabouts, we received claims against Monsanto and related to milk contamination. I think I have my dates

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correct there.

424 Q. (By Mr. Spellman) Aside from claims against Monsanto, when did you first learn - that is you now, individually - that there was some complaint about PCB's affecting either animal life or the environment or something of that nature?

A. I first heard of these early in '70. These were reports that indicated or speculated really that some birds; and as I remember, some seals, were presumed to have been affected by PCB's. I have in mind more specifically the reference to an incident in the North Sea and a reference to birds and seals off the California coast.

425 Q. After, as I remember, you became manager of environmental control, was it?

A. Yes, sir.

426 Q. In January of '70?

A. Correct.

427 Q. And you did not hear of this North Sea incident or things off the California coast until you had assumed that position?

A. That is correct.

428 Q. After assuming that position and in the course of your

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studies, what is the first incident which came to your attention?

MR. PETERS: What do you mean by incident? I don't understand it.

MR. SPELLMAN: Well, I am trying not to put words into his mouth. Strike it out.

429 Q. You are aware now, sir, that claims are being made whether against Monsanto or anybody else that PCB's have had some effect on the animal kingdom and/or some effect on the environment? You are aware of that?

A. Yes.

430 Q. And as I understand, you became aware yourself sometime in early 1970 that some sort of a suggestion, at least, was made with respect to an incident in the North Sea?

A. Yes, sir.

431 Q. And you also learned about that time of an incident involving birds and seals off the California coast?

A. Right.

432 Q. Now, after having assumed that position and studied the matter, when is the first incident of a similar kind that you uncovered in the course of your studies?

MR. PETERS: Do you understand the

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question?

THE WITNESS: Not really, because those incidents in the North Sea and off the California coast were later proven not to be directly related to exposure to polychlorinated biphenyls, so I find it difficult to recall incidents similar in nature.

433 Q. (By Mr. Spellman) Well, on the other side of the coin, have you encountered circumstances of the kind - that claims or assertions or presumptions of damage to the animal kingdom which are related to PCB's?

A. Yes, I have encountered - and this is, of course, by reading many articles - references to some species of wild life being affected by polychlorinated biphenyls. I don't at this moment recall the specific authors or specific times, but there have been occasional references.

434 Q. And what species of wild life, if you recall?

A. There was reference made to the Osprey, which is a fish-eating bird of the falcon family. There are references to, I believe they are called Terns, in the New England area. I am also assuming that by effect you are talking about presence?

435 Q. Pardon me?

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A. When you say effect on wild life, would you mind describing what you had in mind when you say effect?

436 Q. Well, I am trying to keep this as general as I can. Let me try it again in a very general fashion. In this particular case that we are concerned with here today, are you aware that Bethlehem Mink Farm among other mink farmers claim that the presence of PCB's in their mink has cost the loss of progeny and damage to pelts and damage to live mink?

A. I am aware of that claim, yes, sir.

437 Q. Can you accept that generally as an effect, something derogatory to the animal's well being?

A. If it is there, yes; but I didn't associate that with wild life that you mentioned.

438 Q. What I am trying to get between us is a general definition as to what we can use the word effect to mean. Having regard to that very general definition, what effect was there claimed to be in respect to the Osprey and the Tern?

A. The effect on the Osprey was claimed to be one of polychlorinated biphenyls contributing to a situation that led to eggs with soft egg shells or no egg shells,

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which, in turn, affected the ability of the species of bird to reproduce itself. The claim made regarding the - I believe it is the Tern - is that here the chicks that hatched were deformed and that evidence of deformation was attributed to the presence of polychlorinated biphenyls.

439 Q. Did you determine in reviewing those claims that the PCB's did have some input into those problems with the Osprey and the Tern?

MR. MUIRHEAD: Are you asking him whether he, himself, did?

MR. SPELLMAN: First, yes.

THE WITNESS: No, Monsanto did not make studies of wild species.

440 Q. (By Mr. Spellman) So as far as you or Monsanto in your present capacity is concerned, those were claims that were made that PCB's had an effect on these wild things?

A. That is correct.

441 Q. But you never established one way or the other?

A. We never established and no one else has established it.

442 Q. When was the assertion made with respect to the Osprey

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and the Tem?

A. I don't personally know. This is an assertion that was freely made in 1970 and I believe it was made prior to that.

443 Q. Speaking very generally, since you took over environmental controls starting in January, '70, manager, as I recall, what other members of the animal kingdom or birds have you learned of in respect to which it is claimed that they have been adversely affected in some way by PCB's?

A. I had references made to chickens. Of course, I have heard the reference to the mink. I do not recall of any other species other than laboratory testing.

444 Q. Were there any claims or assertions of injury to mink or damage in any way to mink other than the case we are concerned with here?

A. I know of studies made involving mink.

445 Q. Anybody else other than the Bethlehem Mink Farm that you are aware of ever claimed that their mink were injured in some way or suffered losses as a result of PCB ingestion?

MR. PETERS: A claim made against

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Monsanto?

MR. SPELLMAN: Well, I didn't say that, Phil.

MR. PETERS: Well, it is quite important.

THE WITNESS: I have heard rumors that other mink breeders have made these claims, but I personally haven't seen anything in writing. It has not been brought to my attention in that fashion.

446 Q. (By Mr. Spellman) Do I understand you correctly to say, sir, that outside of the wild species which you described to us earlier - - -

A. Right.

447 Q. The only creatures of which you are aware yourself in your studies who it is alleged or which it is alleged have suffered from ingestion of PCB's are chickens and the mink in this particular case?

A. That is right.

448 Q. Any turkeys at all?

A. Let me try to explain my hesitation. I am personally confused with what is meant by adverse effect or words of that nature. If, for instance, PCB's in turkey

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tissue is an adverse effect, I have heard of flocks of turkeys found with PCB's in their tissue. But if we are talking about adverse effects in terms of the ability of the eggs to hatch, the animal's ability to survive or so forth, then I have not heard anything involving turkeys.

449 Q. Let's try another approach. To date, has Monsanto been sued by anybody for the presence of PCB's?

A. Yes.

450 Q. Can you tell me what the suits are?

MR. PETERS: Note my objection, please, on the record.

THE WITNESS: We have suits involving claims that - - -

MR. PETERS: Well, I am going to instruct the witness not to answer in view of the prior answer that he made that no claims or law suits have been brought against Monsanto prior to April 1, 1971.

MR. SPELLMAN: Well, do you want to go to Puerto Rico or should we just suspend?

MR. PETERS: Well, you have an

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interrogatory and a listing of all the cases on prior interrogatories.

MR. SPELLMAN: I understand that and if you want me to tie it to the list, I will be glad to.

MR. PETERS: Well, I don't see how it is relevant in proving negligence or warranty or strict liability against Monsanto on anything after April, 1971.

MR. MUIRHEAD: I never knew that relevance is the test on warranty.

MR. SPELLMAN: I never did either in strict liability.

MR. PETERS: Sure it is.

MR. SPELLMAN: Does anybody have that set of answers he is referring to? I don't have mine.

MR. PLAUT: Off the record.

(Discussion off the record.)

451 Q. (By Mr. Spellman) Mr. Papageorge, sometime ago interrogatories were filed in this case and answered over the signature of C. B. Holleran; are you familiar

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with those answers to interrogatories?

A. No, sir, that is the first that I have seen of them.

MR. PETERS: I am withdrawing my instruction of the witness not to answer, but I am not withdrawing my objection.

THE WITNESS: I am not familiar with the document at all.

452 Q. (By Mr. Spellman) Who is Mr. Holleran?

A. He is a Monsanto employee and a member of our legal department.

453 Q. Now is the legal department a part of the Functional Products Group or is their responsibility directly to the top echelon?

A. It is not a part of the Functional Products Group and it is a department in the corporate structure and that is all I know about the relationship with the top echelon.

454 Q. Does your work as manager of product acceptability require you to know about all claims against Monsanto arising out of PCB's?

A. No, sir.

MR. PETERS: For the record, the

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answer is to the interrogatories which list the law suits or claims involved were prepared at my request as a result of a court order.

455 Q. (By Mr. Spellman) In answer to Question No. 16, sub-paragraph A, a case is listed involving Franklin and Marilyn Humphrey; do you have any knowledge of that case?

A. I am aware of that case.

456 Q. What kind of animal or bird or other thing is involved in that case?

A. In that case, dairy cattle are involved.

MR. PLAUT: That is the Humphrey case?

MR. SPELLMAN: Yes.

457 Q. Can you tell me the nature of the claim made by Humphrey?

A. The claim was made - - -

MR. PETERS: I would like my continuing objection on all the law suits or claims prior to April, 1971.

THE WITNESS: The claim was made that polychlorinated biphenyls were used in the formula-

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tion of the coating applied to the interior of the silo - - -

MR. PETERS: Excuse me for a minute, I should have said after April 1, 1971, not prior to April 1, 1971. My alert partner here picked that up.

THE WITNESS: I believe I said that the polychlorinated biphenyls were one of the ingredients used in the coating applied to the interior of the silo and this polychlorinated biphenyl was present in the silage that was fed to the dairy cattle. The milk being produced by the cattle was found to contain polychlorinated biphenyl and they were prevented by the state from selling it on the market place and Mr. and Mrs. Humphrey then claimed financial loss by the presence of polychlorinated biphenyls.

458 Q. (By Mr. Spellman) Now, that was a suit against Monsanto and the constructor of the silo, Michigan Silo Company?

A. That is correct.

459 Q. When was that suit brought?

A. Sometime in '71, I don't remember the exact time.

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460 Q. When is it alleged that the events occurred giving rise to the claim?

A. During 1970.

461 Q. Early, mid, late?

A. The summer of 1970 is the earliest I can recall.

462 Q. And what is the reason alleged that the authorities would not permit the milk to be sold?

MR. PETERS: If you know.

THE WITNESS: I only know what I have been told. I am led to believe that the reason that it was withheld is because polychlorinated biphenyls were considered an adulterant and should not be present in milk and, therefore, the milk was condemned.

MR. PETERS: I move to have the answer stricken.

463 Q. (By Mr. Spellman) Were there any indications prior to the summer of 1970 that ingestion of PCB's was in any way dangerous for human beings?

A. Would you repeat the first part of that?

THE WITNESS: Would you read it, please?

(Whereupon, the previous question

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was read back by the Reporter.)

MR. PETERS: Note my objection, please, but you may answer as best you can.

THE WITNESS: Prior to the summer of 1970, I have no personal knowledge that the ingestion of PCB's would cause human effects or effects on humans.

464 Q. (By Mr. Spellman) Was there anything - - -

MR. PLAUT: Just a minute. I'd like to have the question read again and let the witness have another opportunity to answer it. I don't think the answer is responsive to the question.

(Whereupon, the previous question was read back by the Reporter.)

MR. PETERS: Will you read the answer back, please?

(Whereupon, the previous answer was read back by the Reporter.)

THE WITNESS: All right; the question related to effects of PCB's, whatever the type of exposure, do I understand that correctly?

MR. SPELLMAN: Ingestion was the term.

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THE WITNESS: I thought I used it in my answer, but I didn't know the question had it. The question had ingestion?

MR. PETERS: Yes.

THE WITNESS: Indications that ingestion would cause harm without mentioning levels, I'd say no indication, no, sir.

465 Q. (By Mr. Spellman) Did the work which you have done collating information on PCB's produce any suggestion that there was knowledge prior to the summer of 1970 that the ingestion of PCB's at any level might be dangerous to human beings?

A. Are we talking about firm evidence or rumor and accusation and this kind of indication?

466 Q. Well, I suppose an assertion is an indication, let's put it that way.

MR. PETERS: An assertion or a claim?

MR. SPELLMAN: Yes. Or if there is hard evidence, I'd just as soon hear that.

THE WITNESS: I believe I have an idea of what you are referring to. I might as well

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bring it out. There were rumors as far as from our point of view, rumors, that an incident had occurred in Japan in which human beings were claimed to have been exposed to polychlorinated biphenyls and adverse effects were noted. In 1970, the early part of 1970, the information was completely garbled, difficult to obtain, and not of the type that anyone could place any credence to.

467 Q. (By Mr. Spellman) Did Monsanto investigate any of those claims on its own or through Mitsubishi?

A. We asked our Monsanto representative located in Tokyo to get information for us and he was completely frustrated in his attempt. We could not get from the Japanese authorities any reports as to exactly what happened regarding that reported incident.

468 Q. In consequence of the report and the difficulty in obtaining information in respect to it, did Monsanto undertake to do any separate research to see if there might be an adverse effect on a human being from the ingestion of PCB's at any level?

MR. PETERS: Objection, please; you may answer.

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THE WITNESS: At that time we already had studies under way to determine the effect of PCB's on test animals which is the normal way to evaluate chemicals. And the tests that we had undertaken were the type normally used to register a product for food use. Those studies at that point in time were about a year old and still under way.

MR. PLAUT: This is early 1970?

THE WITNESS: Early '70, yes, sir.

469 Q. (By Mr. Spellman) Well, the studies having occurred a year ahead of time, began in '69, I take it?

A. Yes, sir.

470 Q. That was some 40 years after PCB's got onto the market commercially?

A. That is correct.

471 Q. What prompted the studies in 1969?

A. Well, with all the reports we were getting of the many investigators finding polychlorinated biphenyls throughout the world, we decided that there was something unique about these materials and perhaps we should conduct some more studies to see if they were in any way affecting the environment. We attempted to

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get guidance from government regulatory authorities as to the type of tests that would be appropriate. No one was either able or willing to help us, so we decided to treat these commercial chemicals as though they were materials that we would petition the Food and Drug Administration for permission to use them in food applications with the idea that this would be the most severe test known at the time.

So we instituted two-year feeding studies with two species of animals. This was the dog and rat study. At the same time, we wanted to determine what effect these materials would really have on egg shells which we kept hearing so much about. We attempted to get laboratories to conduct studies using mallard ducks and quail and found that eggs for these species of birds were difficult to obtain and rather than lose some more time, we chose to go ahead with some leghorn chicken studies as an alternative for the quail and mallard duck.

MR. PLAUT: What were the dates of those studies, please?

THE WITNESS: These studies were

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done all in early '69 in terms of the preliminary work that always precedes these studies and about in mid-'69 the prolonged study was started.

472 Q. (By Mr. Spellman) Were records made of those studies?

A. Yes.

473 Q. Were those studies included?

A. Yes.

474 Q. Were final reports made?

A. Yes.

475 Q. Were they in that pile that is coming by truck?

A. Yes.

MR. PETERS: That is the pile there.

MR. SPELLMAN: The pile has to be ten inches thick or so.

MR. PETERS: That is right.

476 Q. (By Mr. Spellman) The second case on the answer 16 to interrogatories is George Schwarzwalder vs. Michigan Silo and Monsanto. Is that the same kind of a case?

A. Yes, sir.

MR. PETERS: Note my objection to that, please.

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477 Q. (By Mr. Spellman) The same objection and claims and timing as in the Humphrey case?

A. Yes, sir.

478 Q. The next one, sir, is Loren and William Dillman vs. Monsanto, which is also in Ohio, is that related also to the Humphrey case?

MR. PETERS: Objection, please; go ahead.

THE WITNESS: I am confused by the expression related to the Humphrey case. This is a different silo, but similar type of situation.

479 Q. (By Mr. Spellman) Are the claims made basically the same in the Dillman, Schwarzwalder and Humphrey case?

A. Yes.

480 Q. All having to do with milk?

A. Correct.

481 Q. All occurring at about the same time?

A. Correct.

482 Q. Kenneth Baldwin against the same defendants in Ohio; Dean Speicher and also the same defendants; are those two cases essentially the same as the Humphrey and Schwarzwalder cases?

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MR. PETERS: Note my objection.

THE WITNESS: I recall the Baldwin case, sir, which is essentially the same as the previous ones. I personally do not remember the name Speicher. I do not recall that case.

483 Q. (By Mr. Spellman) The next one on the list is R. N. Patterson vs. Monsanto in Georgia.

A. Yes.

MR. PETERS: Do you have a question on it?

484 Q. (By Mr. Spellman) Yes, what was the claim made in the Patterson case?

MR. PETERS: Objection, please; go ahead.

485 Q. (By Mr. Spellman) And what product or beast was involved, if any?

A. It is similar to the previous cases we have mentioned here. The Humphrey case, Schwarzwalder case.

486 Q. But apparently a different silo company, Concrete Silo Company?

A. Yes, sir.

487 Q. But that was another milk claim?

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A. Yes, sir.

488 Q. Was the time at or about the same as the Humphrey case?

A. About, yes.

489 Q. How about Steve and Mary Skolosh, that also involved a silo company, is that the same?

A. Yes.

490 Q. Next is Holly Farms Poultry Industries, Inc., and a group of defendants. That is in North Carolina.

A. Yes, sir.

491 Q. What was the nature of that claim?

MR. PETERS: Objection; you may answer.

THE WITNESS: What was alleged? It was alleged that polychlorinated biphenyls had been introduced into some fish meal which, in turn, was used as an ingredient in a poultry feed. This poultry feed was fed to poultry and affected the hatchability of the eggs and was present in the tissue of the poultry exposed.

492 Q. (By Mr. Spellman) When approximately was that suit filed?

MR. PETERS: Objection; but you

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may answer.

THE WITNESS: As best I recall, about the latter part of '71, November or so. November of '71.

493 Q. (By Mr. Spellman) As to what time did the complaint refer? When did they ascertain that the damages arose?

MR. PETERS: Objection, again, go ahead.

THE WITNESS: The incident took place sometime in the period between early '71 - the first six months of '71.

494 Q. (By Mr. Spellman) Is that still pending?

A. No, sir.

MR. PETERS: Note my objection, please.

495 Q. (By Mr. Spellman) Incidentally, are the milk cases that we talked about earlier still pending?

MR. PETERS: Objection, please; you can answer to the best of your ability.

THE WITNESS: I know that some of those milk cases have been settled and some are

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still pending.

496 Q. (By Mr. Spellman) Did Monsanto make any tests in connection with the milk cases or the Holly Farms case to find out if there were PCB's in the milk in one case or in the chickens in the other?

MR. PETERS: Objection, please; you may answer, if you know the answer.

THE WITNESS: We made some analytical checks on some samples in both types of cases.

497 Q. (By Mr. Spellman) Were PCB's found in either case in the products tested?

MR. PETERS: Objection; you may answer.

THE WITNESS: It varies with the samples we received. Some samples did contain polychlorinated biphenyls, some did not.

498 Q. (By Mr. Spellman) Did any of the samples contain high levels?

MR. PETERS: Objection, please; you may answer.

THE WITNESS: Well, I don't know

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what is a high level as a relative case situation.

499 Q. (By Mr. Spellman) Does any agency or scientific group establish what are proper levels for different purposes?

A. Since then, yes. Prior to that, there weren't any.

500 Q. In connection with its tests, did Monsanto come to the conclusion that there was some effect on poultry from levels of PCB's there found?

MR. PETERS: Objection.

THE WITNESS: No, sir.

501 Q. (By Mr. Spellman) Did they come to any conclusions with respect to the tests on the milk in the milk cases?

MR. PETERS: Objection.

THE WITNESS: We come to no conclusions, we just report a number.

502 Q. (By Mr. Spellman) Now, Midstate Farms was basically the same as the Holly Farms case, wasn't it?

MR. PETERS: Note my objection.

THE WITNESS: As I understand it, sir, yes.

503 Q. (By Mr. Spellman) And Harrold's Hatchery was basically

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the same?

MR. PETERS: Note my objection.

THE WITNESS: As I understand it, it is similar to the Holly Farms case.

504 Q. (By Mr. Spellman) When I speak of poultry, that is chickens that we are talking about, isn't it?

A. Yes, sir.

505 Q. Were the times likewise similar in the Harrold's Hatchery case?

MR. PETERS: Objection.

THE WITNESS: As I understand it, yes, sir.

506 Q. (By Mr. Spellman) We have the next one, Inter-County Farmers Cooperative Association; an action pending in Sullivan County, New York - - -

MR. PETERS: I object to the question.

507 Q. (By Mr. Spellman) Did that case relate to some product involving Campbell's Soup?

MR. PETERS: If you know.

THE WITNESS: I do not know.

508 Q. (By Mr. Spellman) What kind of animal or bird or

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whatever it was, was involved in that case?

MR. PETERS: Objection.

THE WITNESS: I know very little - well, really, I don't know anything about that case.

509 Q. (By Mr. Spellman) There is another one listed, Charles Camer vs Monsanto, pending in New York; are you familiar with that case?

MR. PETERS: Objection, please.

THE WITNESS: Not at all, no, sir.

510 Q. (By Mr. Spellman) Who would know the details in that case?

MR. PETERS: Objection again; you may answer.

THE WITNESS: I don't know.

MR. PLAUT: Who would know the details in the Inter-County Farms case?

THE WITNESS: I don't know.

511 Q. (By Mr. Spellman) The next listed is B. F. Drakenfeld and Company, Inc., - - -

A. No.

512 Q. I am sorry, I guess that is the name of the defendant. The next item is Chick Haven Food Service, Inc., pending

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in North Carolina.

MR. PETERS: Objection.

513 Q. (By Mr. Spellman) Are you familiar with that one?

A. I have heard of it and that is the extent of my knowledge.

514 Q. Is that different from the Holly Farms case?

MR. PETERS: Objection.

THE WITNESS: I do not know.

515 Q. (By Mr. Spellman) Who would be familiar with that case?

A. I don't know.

516 Q. In how many cases have you testified, sir?

A. Just one.

MR. PETERS: When you say testified, you mean in court or by deposition?

MR. SPELLMAN: By deposition or in court.

THE WITNESS: Deposition, only once, sir.

517 Q. (By Mr. Spellman) And which one was that?

MR. PETERS: Objection, please.

THE WITNESS: Holly Farms.

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518 Q. (By Mr. Spellman) Have you testified in court in other cases?

A. No, sir.

519 Q. The next case listed, sir, is Aetna Insurance Company vs. Wilbur Ellis Company and a variety of others including Monsanto; are you familiar with that?

MR. PETERS: Objection.

THE WITNESS: No.

MR. PETERS: Where is that, Larry?

MR. SPELLMAN: It is in North Carolina.

520 Q. I take it you don't know who would be familiar with that?

A. No, sir.

521 Q. The next case listed is also in North Carolina and is Ralston Purina vs. Wilbur Ellis and others including Monsanto; any familiarity?

MR. PETERS: Objection.

THE WITNESS: I am aware of the case and I understand it was processed along with the Holly Farms case and that is the extent of my knowledge.

522 Q. (By Mr. Spellman) The next is Sunnyside Up, Inc., vs.

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Inter-County Farmers and a variety of others including Monsanto and that is in Sullivan County, New York.

MR. PETERS: Objection.

THE WITNESS: I know nothing about that.

523 Q. (By Mr. Spellman) The next item also is in Sullivan County and is Max M. Brender vs. several defendants including Monsanto.

MR. PETERS: Objection.

THE WITNESS: I have never heard of that.

524 Q. (By Mr. Spellman) Are you familiar with the case of Wallace Hatchery vs. Crystal Farms and Monsanto?

MR. PETERS: Objection.

THE WITNESS: I have heard reference to Wallace Hatchery and that is the extent of my knowledge.

525 Q. (By Mr. Spellman) Are you familiar with Louis Elliot vs. Central Carolina Farmers Exchange and Monsanto among others?

MR. PETERS: Objection.

THE WITNESS: No, sir.

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526 Q. (By Mr. Spellman) How about James C. Monroe vs. Lanier Sales, Inc., in Georgia?

MR. PETERS: Objection.

THE WITNESS: I am not aware of that one.

527 Q. (By Mr. Spellman) The case of Andrew Floyd vs. Lanier Sales pending in Georgia against Lanier and Monsanto among others?

MR. PETERS: Objection.

THE WITNESS: I don't know anything about it.

528 Q. (By Mr. Spellman) Should I infer that your duties now do not involve coordinating various law suits that may involve Monsanto in connection with PCB's?

A. No, sir.

529 Q. Does anyone tend to be responsible for coordinating various law suits?

A. That I don't know. It is within the law department and that is all I know.

530 Q. Do you have knowledge of the Sullivan County PCB problem, for lack of a better term?

MR. PETERS: Objection, please.

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MR. SPELLMAN: Sullivan County, New York.

THE WITNESS: I have heard of the reference to Sullivan County, but that is not a term that I personally have used and I don't know what is really meant by it.

531 Q. (By Mr. Spellman) What term do you use having regard for claims arising in New York in the general Sullivan County area?

MR. PETERS: Note my objection, please.

THE WITNESS: I can only refer to an incident and in which I was involved over the telephone and I am trying to recall who it was that I was talking to. In my recollection, I refer to it as the Campbell's Soup chicken incident. I don't know if that means anything to anyone else, but that is my only exposure to New York chickens.

532 Q. (By Mr. Spellman) And that is the only exposure, the telephone conversation?

A. Subsequently I have been involved or have been present when F. D. A. officials and U. S. D. A. people would

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talk about the Campbell's Soup incident.

533 Q. Are you aware of any litigation now pending other than the cases I have described from the answer to interrogatories and the case we are involved with here?

MR. PETERS: Objection.

THE WITNESS: No, sir.

534 Q. (By Mr. Spellman) In the previous answer to the same interrogatories, No. 15, various names are given and identifying people who have made claims against Monsanto for damages allegedly arising out of the use of any product manufactured by Monsanto known generally as polychlorinated biphenyls. Would you look at that list of names and tell me if you have any familiarity with any of those names?

MR. PETERS: Objection; you may answer.

THE WITNESS: I am familiar with all of the names that appear on that list in answer to question 15.

535 Q. (By Mr. Spellman) What, as you understand it, is the claim made by Loret Mills?

MR. PETERS: Objection; you may

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answer.

THE WITNESS: I don't remember.

MR. PETERS: Give the address; maybe that will help.

MR. SPELLMAN: Chattanooga, Tennessee.

THE WITNESS: Yes, I remember the location; I remember the company, but I have never been deeply involved with it. I don't know at this point if it has to do with poultry or milk, it is one of the two.

536 Q. (By Mr. Spellman) It is your memory that it is either one or the other?

A. Yes.

537 Q. The next is Bloomfield Silo Company of Bloomfield, Indiana; is that the milk problem we spoke of earlier?

MR. PETERS: Objection.

THE WITNESS: This is related to milk problems. The Bloomfield Silo Company is one of the constructors of silos that has been involved.

538 Q. (By Mr. Spellman) Well, so we can understand what you mean by the word related, what is the claim made in

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substance by Bloomfield Silo?

MR. PETERS: Objection.

THE WITNESS: I don't know all the details, but as I recall, some of Bloomfield Silo's clients or customers have made claims to Bloomfield Silo that their milk was contaminated because of the coating used by Bloomfield Silo and Bloomfield Silo has approached Monsanto with the claim that it was our polychlorinated biphenyl that was involved.

539 Q. (By Mr. Spellman) Next is Monteagoe Silo Company; is that basically the same difficulty?

MR. PETERS: Objection.

THE WITNESS: Basically the same, yes, sir.

540 Q. (By Mr. Spellman) How about Ernest Austin, North Carolina?

MR. PETERS: Objection.

THE WITNESS: Mr. Austin is a dairy farmer whose milk has been found to contain polychlorinated biphenyls and claims that Monsanto's product was present.

541 Q. (By Mr. Spellman) Glenn Dickerhoff - - -

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MR. PETERS: Objection.

THE WITNESS: Same type of situation rather similar to Mr. Austin.

542 Q. (By Mr. Spellman) Haygood Brothers Dairy?

MR. PETERS: Objection.

THE WITNESS: Similar situation.

543 Q. (By Mr. Spellman) D. A. Robinson, Jr.?

MR. PETERS: Objection.

THE WITNESS: Similar situation.

544 Q. (By Mr. Spellman) Robie Harris?

MR. PETERS: Objection.

545 Q. (By Mr. Spellman) Franklin, Kentucky.

A. Similar situation.

546 Q. (By Mr. Spellman) Neil Acock, Tuscumbia, Alabama.

MR. PETERS: Objection.

THE WITNESS: Similar.

547 Q. (By Mr. Spellman) Milk?

A. Yes, sir.

548 Q. Albert Baumgartner.

MR. PETERS: Objection.

THE WITNESS: Same situation.

549 Q. (By Mr. Spellman) Albert Cagle.

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MR. PETERS: Objection.

THE WITNESS: Similar situation.

550 Q. (By Mr. Spellman) Now, are there any claims of which you are aware made against Monsanto by any persons whom I have not listed in going through these answers to interrogatories?

MR. PETERS: Objection.

THE WITNESS: I don't recall any other situations.

551 Q. (By Mr. Spellman) Is there any central place or person in the Monsanto complex of companies that is responsible for keeping track of claims made against the company?

MR. PETERS: Objection. You may answer, if you know.

THE WITNESS: Our legal department.

552 Q. (By Mr. Spellman) Only legal?

A. Yes, sir.

553 Q. So that for anyone to have knowledge of claims presented or for litigation against Monsanto, we would have to have reference to the legal department?

MR. PETERS: Objection.

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THE WITNESS: Yes, sir.

554 Q. (By Mr. Spellman) Do you know who individually would be responsible in the legal department?

MR. PETERS: Objection.

THE WITNESS: No, sir.

555 Q. (By Mr. Spellman) Who is general counsel, if you know?

A. General counsel is Edward Putzell.

556 Q. Wholly apart, Mr. Papageorge, from claims made against Monsanto or litigation brought against Monsanto, is it fair to say that you have some awareness, at least, of claims made about PCB's and some damages suffered by the claimants in connection with milk?

MR. PETERS: Objection.

THE WITNESS: Yes.

557 Q. (By Mr. Spellman) And it is likewise fair to say that you have some knowledge of claims made involving chickens and alleged damages as a consequence of PCB's?

MR. PETERS: Objection.

THE WITNESS: Yes.

558 Q. (By Mr. Spellman) In this case, claims are made in respect to mink and damages suffered by the owner.

A. Yes.

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559 Q. Are there any claims of which you are aware - and by claims I mean allegations, assertions, suggestions or inferences, if you will, of anyone suffering damages as a result, as they claim, of PCB's affecting in some way their animals or the product of their animals or their birds?

MR. PETERS: Objection.

THE WITNESS: None other than those that we have reviewed.

560 Q. (By Mr. Spellman) The turkeys you indicate you heard something about by way of rumor?

A. Yes, sir.

561 Q. And the salmon you heard something about by way of rumor?

A. I am sorry, which salmon are these?

562 Q. On the West Coast.

MR. PETERS: The West Coast?

MR. SPELLMAN: Strike it out.

563 Q. Are you aware of any claims involving salmon?

A. I am aware that PCB's are reported to have been found in Coho salmon out of the Great Lakes.

564 Q. And you have some awareness of the claims, obviously,

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in Japan with respect to people?

MR. PETERS: Objection.

565 Q. (By Mr. Spellman) To conclude this part of it, are there any other claims or assertions or suggestions of damage resulting from PCB's of which you are aware that you have not described so far?

MR. PETERS: Objection.

THE WITNESS: I believe we have covered them all.

(Whereupon, the deposition in the above-entitled matter was continued.)

_____
Deponent

THE STATE OF _____)
) ss.
COUNTY OF _____)

Subscribed and sworn to before me this _____ day of _____ 19_____.

_____
Justice of the Peace and/or
Notary Public

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