

WATER PCB-00054468

WILLIAM B. PAPAGEORGE,
called as a witness herein, having been previously
duly sworn, was examined and testified further as
follows:

DIRECT EXAMINATION (Resumed)

BY MR. POPE:

Q Mr. Papageorge, I don't mean to go over
again the subject we have covered before the lunch
break, but I want to make sure I have gotten clear
your testimony as to Monsanto's knowledge as of 1970
in the area of known possible effects in humans of the
breathing of PCBs.

Was it one of the reasons that the
warnings we have discussed frequently on the labels
were prior to 1970 advising workers against inhalation
and PCB vapors, was one of the reasons because of the
earlier studies that Monsanto was aware of that indi-
cated there was possible liver damage in humans?

MR. SCHINK: I object, no foundation that this
witness knows or was involved in the decision as to
what to put on the label prior to 1970.

MR. POPE: I presume he didn't know anything about
prior to 1970. At that time he wasn't involved in that
enterprise, but I am talking about what kind of knowledge

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he has acquired since.

BY MR. POPE:

Q Do you understand my question?

A Yes. Based on my understanding, the answer to your question is no.

Q Have you changed your conclusion with respect to that answer in recent years?

A No.

Q In the trial in New Hampshire, the United States District Court for New Hampshire on October 22, 1974, when you gave testimony, were these questions asked of you and did you give these answers:

"Question: The document which we have been discussing, the red pamphlet which has been identified as 10-14B, Page 15, right-hand column, the last full paragraph indicates that vapors emitted by Aroclor 1248 which had been heated would be injurious to people and people should not breathe them for any prolonged period, is that correct?

"Answer: That is correct.

"Question: Would you tell us why that is so. What would it do to us if we breathed them for a prolonged period?

"Answer: Well, you know, some of the

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studies listed earlier indicated that by breathing the vapors of PCBs, human beings could exhibit what is known as a skin syndrome known as chloracne and there was some indication, you know, from earlier studies there is possible liver damage to humans and these resulted in the kind of cautionary words about breathing and exposure that is how that information came about."

Did you give those answers?

A I probably did. I don't remember.

MR. HYNES: Would you give us the page number?

MR. SCHINK: 163.

BY MR. POPE:

Q Did any of the people outside Monsanto that we were just talking about before lunch, the people you contacted for information in the preliminary stages, Dr. Stalling, Potomac Laboratories, people at WARF Laboratory, people at FDA, the Department of Agriculture, did those people ask you for information regarding production figures, and we are talking about production figures of PCB products?

A I don't remember them asking me that.

Q I take it if they did ask, you told them it was company policy not to produce?

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A Yes.

Q Having acquired the preliminary information that we have been discussing virtually all morning, what was the next thing that you undertook as part of your job following January 1970?

I realize there may have been more than one thing going on at a time.

A Yes. We were to extend this information gathering, information sharing activity. We started arranging for a trip to Europe to talk to the representatives of laboratories that were reported to have been working on PCBs, to talk to the producers of PCBs in Europe and to also talk to some representatives of the U.K. Government equivalent to our agencies.

Q Was there already an overall plan in place to deal with the PCB problem in addition to the minutes that we have talked about from November of 1969?

MR. SCHINK: As of when?

MR. POPE: As of this January 1970 period.

BY THE WITNESS:

A No, no.

BY MR. POPE:

Q Was it your function as you understood it to formulate a plan for the company to deal with this

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problem?

A To recommend a plan, yes, along with members of the task force. It was a joint effort.

Q Did you begin work right away on the formulation of such a plan?

A Not immediately. We were still in the information gathering stage, in my perception. As to what else we did in that period of time, a specific item, we modified the wording, we added the wording on the product labels.

Q Is this for all PCB-bearing products?

A Yes.

Q Who formulated that label?

A The paragraph that was composed, I am the one that put it on paper and the thoughts really are a condensation of the consensus of the task force.

Q Let us mark this 2-page document as Papageorge Deposition Exhibit No. 22 for identification. The first page appears to be a memorandum from Mr. Papageorge dated April 13, 1970 with the numbers 0001516 at the bottom.

Attached thereto is a label for Aroclor 1260.

I show you that memorandum, Mr. Papageorge,

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and ask you if that is the copy of a memorandum you sent on or about the date it bears?

(Papageorge-OMC Deposition

Exhibit No. 22 marked for

identification, 8/28/81, TLU.)

BY THE WITNESS:

A That was one of our earlier drafts.

BY MR. POPE:

Q Of the change in label?

A Yes.

Q And what is attached as Page 2 of that exhibit is the label you had prior thereto, is that it?

A Yes.

Q With some minor changes, with this basically Page 2 of this exhibit, the label for all of the PCB-bearing products as you were familiar with as of 1970?

A Yes. I don't know that I would call it minor changes. They are pretty critical to the content in terms of description of the contents.

Q Where?

A Aroclor is different from a Pydraul and so on and so this is a change.

Q I don't mean to say they were minor differences, but as to the warning, there were very little --

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A The warning itself, right.

Q No change?

A Yes, right.

Q How long had that been the case, did you research that?

A How long had the language been the same?

MR. SCHINK: You are including the chemical description of the product, "Contains chlorinated hydrocarbons"?

You are containing that in your question, Mr. Pope?

BY MR. POPE:

Q How long had the warning been basically the same?

MR. SCHINK: Would you clarify for me, perhaps with reference to the second page of that exhibit, what you are referring to, Mr. Pope, by your description?

MR. POPE: I refer to warning as avoid prolonged breathing of vapors or mists, avoid contact with eyes or prolonged contact with skin --

MR. SCHINK: You are not talking about the information, "Contains chlorinated hydrocarbons," the chemical composition?

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MR. POPE: No, I would not characterize that as a warning.

MR. SCHINK: You understand what he is just now referring to, the language underneath the chemical composition of the product, the four sentences?

THE WITNESS: I understand.

BY THE WITNESS:

A Those four sentences, the best of my recollection, were on the labels back in the '50s.

BY MR. POPE:

Q And continuously through the 1970s, is that right?

A Through the '70s, yes.

Q Then there was additional language that you came up with for this label in 1970, is that right?

A That is right.

Q How about the words, "Caution, contains chlorinated hydrocarbons." How long had these been on the labels?

A A long time, a decade or more. I don't remember the specific year in which it was introduced.

Q Did you investigate that?

A Yes.

Q Where did you go to investigate that?

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A I went to the library of the group that is responsible for label design in Monsanto.

Q Which group was that?

A I don't recall its official title, but it is a part of our corporate Distribution Department. I just refer to it as the Label Department. I don't know that that is accurate.

Q Is it your recollection that this basic label was adopted with the exception of the words -- "extreme care" was implied in the label?

MR. SCHINK: You are referring now to the language in the second paragraph on the first page of Exhibit No. 22?

MR. POPE: I am sorry, yes, right.

BY THE WITNESS:

A My answer is yes.

BY MR. POPE:

Q Do you know when that became effective in terms of products actually leaving Monsanto's premises with such warnings?

A Sometime in May of 1970.

Q Thereafter all products containing PCBs that left the plant, the premises, for sale contained such a label, is that true?

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A The material in packaging that contained labels, yes.

Q That is true as to those?

A Yes.

Q What other materials were there that were not in packages?

A Tank car full. That does not get a label like a steel drum does.

Q What steps were taken if any to advising customers receiving tank cars that your basic label had changed after May of 1970?

A That message there really is a confirmation of information relayed to the Marketing Department, the field salespeople to convey on to the customers and the customers who purchase material in large quantities, in tank car quantities, would have known this information via that discussion with the Monsanto representatives.

Q Did your task force take any steps to ensure that that discussion in fact took place?

A Yes. The representatives of the Marketing Department who were members of that task force, when it came their turn to report on the status of their part of any program would among other things talk about

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what was communicated to customers. These kinds of things were being relayed to the best of their knowledge.

Q Was it done with specificity as to what specifically was told to each customer?

A You mean back to the members of the task force?

Q Yes.

A No, not specifically, no.

Q So what was told each customer varied, is that right?

MR. SCHINK: You are talking about the exact words, Mr. Pope?

MR. POPE: Yes.

MR. SCHINK: Or the two thoughts contained in that label?

MR. POPE: I am talking about the exact words.

BY MR. POPE:

Q They varied from customer to customer, is that right?

A Yes.

Q What steps did the task force take or anyone else within Monsanto to ensure that the two thoughts were effectively communicated to those customers?

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A It is the normal steps taken by any supervisor to ensure himself that the members of his team are performing adequately. This is by discussions between the supervisor and subordinate or accompanying the subordinate on some of these trips.

On occasion, there might be a report made on a trip. Those are examples of the kinds of things that take place.

Q Was there written direction that went out from the home office to the Marketing people telling them what to advise customers about with respect to the labeling change?

A I don't recall seeing -- let me think a bit.

I believe I recall a document that covered this subject. There was a document used by the Marketing Department called a sales bulletin which as needed would be published conveying some appropriate information to the field people.

Q Was the form of a sales bulletin used for advising the field of such a matter involving labeling, such as a label change of a product?

A Yes, yes. And I have a recollection of seeing something here that I can't -- it's been too

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ago. I don't remember the specifics.

Q The sales bulletin, I take it, would be in-house Monsanto, it would go to the salesmen in the field?

A Yes, yes.

Q What is your recollection as to what the sales bulletin said on the subject matter referred to in the label?

A It informed the field salesmen that the labels were being modified and the message was also printed on the sales bulletin. It described, not described, but reviewed that this applied to packaged products that were sold. I don't remember the details. I would have to see the bulletin.

Q This was around May of 1970?

A I believe so, yes, May, June; somewhere in there.

Q By that time what had the Monsanto salesmen been told of the overall PCB problem?

A Virtually everything we discussed yesterday and today regarding presence in the environment, studies to develop analytical methodology, keep it out of the environment, don't let spills get away from you, dispose properly, the status of the animal studies. That's all

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I can think of at the moment.

Q In what form was this information conveyed to the sales people?

A Each of the Marketing groups handled it somewhat differently, although the primary method was to convey it orally, either personally over a telephone through the system starting with the managers in St. Louis on out to the regional and district managers and eventually to the individual sales representatives.

Q Was it Monsanto's corporate policy to see that information involving PCBs should be conveyed orally to the Marketing people as opposed to being put in writing?

A No.

Q Was any of this information conveyed to the Marketing people or salesmen in writing as of about May of 1970?

MR. SCHINK: You are talking in addition to the sales bulletin he has already testified about?

MR. POPE: Right.

BY THE WITNESS:

A Some of the groups were sending out memoranda, but I do not recall at what point in time and whether any of these went out early in 1970. I don't recall.

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BY MR. POPE:

Q Which groups are these?

A The Marketing groups.

Q Which Marketing groups are you talking about, if you remember?

A I don't remember.

Q How about the Functional Fluids Group? Was that a group that was conveying this information to the Marketing people in writing or orally?

A No. When I mentioned groups, I should have been more specific. The Sub-Groups, the Hydraulic Fluids Group, the Heat Transfer Group, the Dielectric Group and the Plasticizers Group, each one handled it slightly differently based on the nature of the product, the number of customers, the size of the organization that marketed the material. The bigger the group, the more complex communication gets.

And it has to be handled differently, but the main intent was to get the message out and it was left up to the managers to use their normal ways of communicating, whatever that happened to be.

There is no fixed way to communicate.

Q Are you aware at any time during 1970 of a direction to salesmen of Monsanto not to make any

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statements to customers in writing with respect to PCBs?

A I am not aware of such an order.

Q Would that have been consistent with or contrary to company policy as you understood it?

A That would be contrary to my understanding of Monsanto's intention.

Q With respect to the Hydraulic Fluids Group, did they convey, to the best of your knowledge, this information to salesmen regarding current status of your test results and the presence of PCBs in the environment, whatever information that was, did they convey that orally to their salesmen or in writing?

A I don't know.

MR. SCHINK: Was the question --

BY MR. POPE:

Q Not the customers, the salesmen.

A I don't know how.

Q How about the Heat Transfer Group? Do you know that?

A I don't know.

Q With respect to any of these groups that conveyed this information to their salesmen in writing, did they seek your assistance in drafting such a

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document or submit it to you to look at for your reviews?

A On occasion, not all occasions.

Q Was there a regular series of communications to Monsanto salesmen in this period of early 1970 with respect to new findings or further information that was held in the home office of PCBs in the environment or any similar such information?

A I don't understand what you mean by regular, but if by regular you mean definite schedule when a publication or a meeting would be held, no.

If on the other hand you mean as soon as the data became available and useful was it conveyed, the answer is yes.

Q We are talking about conveyed to a salesman, right?

A Right, yes.

Q Monsanto employees?

A Yes.

Q Who would make that determination whether the data was useful and should be conveyed?

A The task force by consensus after discussion would on occasion make a decision. On the other hand, in some issues the manager sitting in on the task force may decide that for his purpose he ought to communicate

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to his people, so both took place. Individuals made the decision and the group made the decision.

Q If I have asked you this question yesterday, I apologize.

What was the company policy with respect to what salesmen should do when they received inquiry from customers and potential inquiries with respect to PCBs?

MR. SCHINK: As Mr. Papageorge assumed his position and thereafter?

MR. POPE: Yes, say the first five, six months of 1970.

BY THE WITNESS:

A The policy was that if the Monsanto individual had sufficient input, felt competent to answer the inquiry, he should go ahead and respond.

If on the other hand the inquiry was in an area of expertise that was not his, he should convey that inquiry back to me and I would get the right help, or if I wasn't available, don't let that delay him, go on to the proper department. If it is a research question, medical question, and what have you, they could go to the right department head and get help immediately rather than wait for me to get back to the

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office.

BY MR. POPE:

Q So it was left to the individual salesmen in the field to determine whether they felt competent to answer questions, is that right?

A Yes, that's right.

Q Was that the policy throughout 1970?

A Yes, that is the policy today on all our products.

Q Was that one of the reasons why the task force wanted to get this information it had acquired with respect to PCBs, the presence in the environment, their effect on animals and what-not, get that information to the salesmen as quickly as possible so they could answer those kinds of questions?

A Yes.

Q Was it ever conveyed to the salesmen that you were operating a PCB hotline or some similar terminology to respond to questions, a special telephone number?

A I don't know about that. It was not a special telephone number. It was my telephone and they were encouraged to seek my help if they felt I could be of some help.

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Q Was that fact conveyed to the salesmen in the field?

A The managers passed it on to their teams.

Q As of the time you took over this job in January of 1970, there was already in place, was there not, a number of projects to attempt to replace various PCB products with non-PCB products, is that correct?

A Well, the use of the word projects bothers me a little bit.

Q Wasn't the Research Department instructed to begin work immediately on replacement products, fluids and what-not?

A Yes, yes. In some cases they may have had studies already under way.

Q That decision was made before you got there?

A Yes.

Q Was that fact conveyed to the salesmen, to your knowledge, that there were research engineers already attempting to replace these PCB-bearing products?

A Yes.

MR. SCHINK: Now you have jumped -- I object to the form of the question. Your earlier question was were they looking for replacement of some products. Now you have jumped to all PCB products.

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MR. POPE: Why don't we ask the witness.

MR. SCHINK: I object to the form of the question.

BY MR. POPE:

Q Was that work under way when you took over this job, the research work with respect to replacement of all PCB-bearing products, feasibility studies and the like?

A Well, irrespective of the PCB problem, it is normal in any product line to always look for an alternate, whether there is a problem or not. But one of the responsibilities of a research group is to constantly look for alternatives that give better properties, lower cost, on and on, to get benefits that the current lines may not be able to give.

When the PCB issue arose, the instructions were really to accelerate the search for alternates, recognizing that resources are limited; therefore, you concentrate on those applications which currently were of Aroclor 1254 and 1260, tackle those first and eventually we would get to the others as resources permit and as alternates do become available.

Q Was that because it was the feeling at Monsanto that Aroclor 1260 and 1254 were more toxic than the other Aroclors?

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A No.

Q What was the reason for that?

A The decision was made on the reported presence of these two Aroclors in samples analyzed by the few laboratories in existence then.

Q Wasn't it a fact that if you replaced these fluids with lower chlorine Aroclors such as 1248 and 1242 and then they were found in the environment, the next step would be to replace those fluids? Is that what the rationale was?

A That was a possibility, yes.

Q With respect to the Functional Fluids Group, was Dr. Richard in charge of that research project to find replacement fluids?

A Yes.

Q Let us deal with Mr. Schink's concern. At least at the beginning of the project, was it designed to study the possibility of the replacement fluids for all PCB-bearing products?

A It is my understanding at the beginning it was to replace the higher chlorinated mixtures.

Q Which uses would those have been?

MR. SCHINK: We went over that yesterday. He went over the uses of each one of the Aroclors, Mr.

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Pope.

MR. POPE: I am talking now about the decision that was made as a first priority to attempt to locate, formulate, invent replacement fluids for these higher Aroclors.

MR. SCHINK: And he explained to you yesterday with respect, at great length, with respect to each of the Aroclors, what it was used for.

You might ask him if it was still used for the same thing in 1970, but it is already a matter of record. I don't know that there is any purpose served by just repeating ad nauseam his testimony.

MR. POPE: I regret this may be nauseating to you, Mr. Schink.

BY MR. POPE:

Q Did this replacement of 1260 and 1254 run across your whole product line?

A I believe it did, yes.

Q Was the Plasticizer Research Group doing the same research that Dr. Richard was?

A They were doing research, not the same. It was a different application altogether.

Q Was each of the Marketing Groups equally affected by the attempted replacement of 1260 and 1254?

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MR. SCHINK: Would you clarify what you mean by affected?

MR. POPE: In terms of number of customers, amounts of sales.

BY THE WITNESS:

A No, each Marketing Group is different unto itself in every respect.

BY MR. POPE:

Q What were the largest uses of 1260 and 1254 as of 1970, 1969?

A I don't know that I can recall all of them, but obviously the application in the electrical transformers was a large use.

Q Any others?

A Plasticizers use in themselves, each one by itself is a small use. The composite could be a respectable amount, so if we think of that plasticizer use as a group, 1254 and 1260 were important, but to any one use such as a hot melt adhesive, it was too small and the heat transfer application was fairly large.

Q Those would have been the first priorities, 1254 and 1260, is that right, for the research studies?

A That is my understanding, yes.

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Q At the same time, was Dr. Richard requested to come up with replacement fluids for other uses such as hydraulic fluids or was that held off in point of time until he had had a chance to begin his work on 1260 and 1254?

MR. SCHINK: I object to the form of the question.

BY MR. POPE:

Q Mr. Papageorge, does that make sense to you?

A I believe I understand your question.

Dr. Richard did not withhold work on the remainder of his research as long as the individuals that were addressing the dielectric problem, for example, the heat transfer problem could proceed without any help from others in the department. The remaining individuals were put on studies for all other alternatives.

Again, it is a matter of priorities. That does not mean the work was totally suspended.

Q Depending on the amount of resources devoted to one area over another, not one being before the other in point of time?

A And resources are not necessarily transferable from one application to another.

Q Who would make a decision when a salesmen

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would be advised that work was proceeding for the replacement of a particular product with a non-PCB-bearing nature?

A The Marketing Managers.

Q Would Dr. Richard make reports at your task force meetings of his results?

A Yes.

Q Did he?

A Yes.

Q Was he set deadlines for when he was expected to come up with results?

A Not in early 1970 just yet, no. A clarification on informing the field people on when results started, there is nothing to prevent a researcher from talking to the field salesperson and informing him that he was working on the project.

Q Of a chance encounter?

A Not really because many times the researcher wants the field salesman to take a sample to the customer and will say, "I have a pint bottle I am sending you, I want you to test it out for us."

That happens very frequently, very often.

(Papageorge-OMC Deposition

Exhibit No. 23 marked for

identification, 8/28/81, TLU.)

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BY MR. POPE:

Q Mr. Papageorge, I hand you what has been marked by the reporter as Papageorge Deposition Exhibit 23 for identification, being a one-page document dated January 23, 1970, bearing the numbers at the bottom 0010076.

I ask you to take a look at that exhibit and tell me if that is a copy of a document you received from Mr. Davis on or about the date it bears.

A Yes.

Q That memorandum refers to somebody who claimed to have a practical low-cost method for reducing Aroclors, is that right?

A Yes.

Q Did you conduct any investigation on that matter?

A This is for reducing Aroclor in the effluent streams.

As best I recall, this was assigned to Bill Richard's group. Let me think -- yes, this would be a research assignment for Research to pursue.

Q Who is Mr. Davis?

A Mr. Davis was in the Marketing organization, if I recall correctly. He was associated with the

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heat transfer applications of PCB-containing fluids.

Q Is that your writing at the bottom of that document?

A No.

Q Is that his?

A No, I believe this is Don R. Pogue's.

Q Can you read what that says?

A Out loud?

Q Yes.

A "Samples of A-200, 312 and 1242 sent to Kemp for evaluation week of 1/19/70."

Q Do you know whether anything ever came of that inquiry?

A I do not know.

Q Did your task force group prepare monthly reports or minutes of meetings?

A We did not. I don't recall preparing minutes. Everyone took his own notes.

We issued a monthly report for a period of time, but it was discontinued when the level of activity and the need to publish appeared appropriate no longer.

Q What became of your notes?

A I don't know. I passed them on to my

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successor.

MR. POPE: Have they been produced?

MR. SCHINK: If they were in the files and they have been reviewed and they were relevant, they have been produced. I do not have a recollection of any of his notes, however, being produced, but there were a lot of documents.

MR. POPE: Mr. Schink, I think a decision was made by your firm that they were not relevant. Do you --

MR. SCHINK: We took the discovery requests and we responded to them in the manner that was appropriate under the circumstances.

MR. POPE: So you say.

BY MR. POPE:

Q I show you a document, Mr. Papageorge, that I'm going to ask the reporter to mark as Papageorge Deposition Exhibit No. 24 for identification, being a 2-page exhibit bearing the number on the first page of 0001387 entitled Monthly Summary, January and February, 1970 for Functional Fluids.

(Papageorge-OMC Deposition

Exhibit No. 24 marked for

identification, 8/28/81, TLU.)

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BY MR. POPE:

Q Before we get into that exhibit, Mr. Papageorge, who was your successor that you passed your file on to?

A J. C. Weber, W-e-b-e-r.

Q Have you seen that document before, Exhibit No. 24?

A Yes, I recall parts of it.

Q Can you tell me what it is?

A This is a copy of a monthly summary issued from Dr. Keller's laboratory.

Q Summary of what?

A Oh, you mean the contents?

Q First, I mean in general. It is a summary that was issued on somewhat of a regular basis, is that right?

A Yes, by the laboratory describing formally, describing the activities of that laboratory, the status of the studies for that period of time.

Q This was issued by Dr. Keller's laboratory, is that right?

A Correct.

Q Is it a fact that in January and February, he was devoting himself exclusively to the analytical

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methods for detection of PCBs?

A Not exclusively.

Q What else was he doing?

MR. SCHINK: Are you asking him to read the document or are you asking --

MR. POPE: No, sir. Put the document aside and tell me.

I thought this morning you testified that is what he was doing exclusively during the period of time. What else was he doing?

MR. SCHINK: You are now asking about his laboratory as a whole, not Dr. Keller personally, is that right?

MR. POPE: Let us go back and talk about what that is supposed to be a summary of.

BY MR. POPE:

Q Dr. Keller was in the practice in early 1970 of issuing a summary of activities of his laboratory, is that correct?

A Yes.

Q His laboratory, is that different from Dr. Richard's laboratory?

A Yes.

Q What was Dr. Keller doing besides refining the

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techniques on the abilities and the methodology for detection of PCBs during the early part of 1970?

A He was providing the analytical laboratory support for all of the research activity conducted for the Organic Chemicals Division, so it is a research analytical group supporting a research effort over in one corner, figuratively speaking. There is a PCB activity where Dr. Tucker was spending all of his time. Keller was spending some of his time on PCBs as well as many other things that go through his laboratory.

Q And his publication of which that is a type was designed to alert other people within the company of a summary of what his laboratory was accomplishing during that period of time?

A Yes.

Q Is there a rationale for the mailing list that you can detect as to who those people were?

A Yes. This particular copy refers to Functional Fluids. There are other copies referring to the different Sub-Groups within the Organic Chemicals Division.

Q So he would send out multiple summaries, one for each area?

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A To an audience of specific interest, so the distribution to list includes the individuals in the Research Group headed by Dr. Richard who are interested in the support that Dr. Keller's group gives them.

The second list of individuals' names are the researchers in Dr. Keller's group or organization who did the work.

Q Prepared the report?

A Prepared the report.

The third list of individuals includes Dr. Patrick, who was Dr. Keller's supervisor, Dr. Bergen, who is the Functional Fluids Business Director, and I am included because of the PCB portion, and then there must be a miscellaneous group of others in Dr. Keller's group.

Q With respect to the monthly summary for Functional Fluids, would this be a multi-page report?

A It normally is.

Q Do you recall receiving this report in early March?

A Yes, I remember. I remember the contents.

Q At that stage in time, were there still people within the Monsanto group referring to this general subject matter as Aroclor Defense as we have

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seen in some of the earlier memos, only if that refers to PCBs as a substance in the environment and the whole problem that you have been focusing on, is that right?

MR. SCHINK: Are you asking what Dr. Keller meant when you used the term in this memo?

MR. POPE: I am asking what Monsanto meant in Aroclor Defense.

MR. SCHINK: I don't think this gentleman can tell you what every single person said.

MR. POPE: I don't have to have him tell me everybody, just what his basic understanding of what Aroclor Defense meant.

MR. SCHINK: Was there a basic understanding of what that meant?

THE WITNESS: No, not to my knowledge.

BY MR. POPE:

Q What did Mr. Keller mean when he put Aroclor Defense --

A I can't speak to Mr. Keller.

Q Did you see anybody else at Monsanto writing memos saying Aroclor Defense in them?

A Yes, I believe Dr. Richard is the one that used that expression and he and Dr. Keller work very

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closely, so they ended up using the same expression to define that program, that research program.

Q Was that research program focusing on the same kinds of questions from a research point of view as you were focusing on in your job, to the best of your knowledge?

A To a degree, to a considerable degree, yes.

Q There is reference in Paragraph 3 and 4 to biodegradation studies.

Were those the same studies you referred to earlier that Dr. Tucker was performing in-house on biodegradation?

A Yes.

Q Did there later come a point in time when you went to an outside agency to conduct biodegradation studies?

A I don't recall Monsanto ever asking an outside laboratory to do that kind of work.

Q Do you recall what conclusions Dr. Tucker ultimately reached with regard to his biodegradation studies?

A Ultimately -- there was evidence that the lower chlorinated biphenyls degraded in a situation like the one described there.

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Q Referring to what?

A Referring to what is referred to as a semi-continuous activated sludge which simulates a municipal treatment system with bacteria and air.

Q Referring to the fourth paragraph, the second page of Exhibit 24?

MR. SCHINK: Are you referring to the method described there or is he referring to the results, Mr. Pope?

You asked him, I thought, what the ultimate conclusion was, not what was --

MR. POPE: You're absolutely right, Mr. Schink.

BY THE WITNESS:

A Was my answer referred to the ultimate?

BY MR. POPE:

Q Put under the conditions you were referring to in Paragraph 4.

A Yes.

Q When you say lower Aroclors, what are you referring to?

A Less than 5 chlorines per biphenyl group.

Q How does that translate into the Aroclors and the numbering system Monsanto used?

A That takes us up through most of PCBs found

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in the mixtures including up through 1248.

Q Through and including 1248?

A Yes. Now, even Aroclor 1254 contains a lower chlorinated, less than 5.

Q His study actually showed 1254 degraded under those conditions?

A The fingerprint of Aroclor 1254 which shows the peaks and valleys that represent the lower chlorinating isomers of PCB, showed a reduction under those conditions.

Q When was that final report delivered?

A I believe the final report was available in 1970 and it was presented to the Interagency Task Force, the Federal Interagency Task Force in 1971.

I believe those are the dates.

Q Exhibit 24, is that Mr. Bergen's writing on the front sheet?

A That looks like his writing, yes.

Q Is this the same reference we saw before of direction to his secretary to put it in the Aroclor toxicity file?

A Yes.

Q Can you tell me what that says on the right-hand side of that exhibit?

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A I can read it for you.

Q Please.

A One says, "A lot of work here!" The next statement, "Let's be sure it's all worthwhile."

Q All is underlined?

A Yes.

Q Did Mr. Bergen have a discussion with you where he asked whether all of the work being done by Dr. Keller's staff in early 1970 was all worthwhile and when did that discussion take place?

A That is many times. That's a routine question that a good manager always asks. He not only asks it of me but of all the people on that list.

Q And was the answer always yes, so far as you know?

MR. SCHINK: Are you now limiting yourself with respect to PCBs?

MR. POPE: How could I possibly do that? You haven't given me any more than that in the document.

MR. SCHINK: You are not using the document. You are asking a general question as I understood it.

MR. POPE: All right.

BY THE WITNESS:

A I can't speak for the others. I can only

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Speak for myself.

BY MR. POPE:

Q All right.

A In my experience with Mr. Bergen, I was able to assure him that we were using our resources wisely and were doing the right things.

Q Did the task force in early 1970 discuss the question of whether the Marketing people should continue to sell PCB products as opposed to restricting their sale in any way in the early part of 1970?

A There were discussions started, at least when I arrived. It was being reviewed regarding the uses of PCBs, some discussion on how it might be getting out in the environment and, yes, they zeroed in on some of the products which used PCBs and there was some serious discussion about whether we should be more selective about which end uses we should market to.

This was the beginning of a discussion that eventually ended up with withdrawal from uses.

Q At that beginning series of discussions, did you have available to you what the company's plan was with respect to number or volume of sales in the upcoming sales period?

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A Oh, it was available to me, but this did not enter into the discussions, so I didn't have to refer to it.

Q Did anyone at these meetings suggest that maybe the company ought to increase sales before the product was taken off the market?

A Not in my presence.

Q Did anyone tell you that the Marketing plan called for an increased amount of sales of PCBs grow over the prior year?

A No.

Q As a point in fact, did PCB sales for Monsanto grow in 1970 over what they had been in 1969?

A I don't remember.

Q The Interdepartmental Task Force report was published in May of 1979?

MR. SCHINK: Not '79.

MR. POPE: 1972. Have we marked it?

MR. SCHINK: No.

(Papageorge-OMC Deposition

Exhibit No. 25 marked for

identification, 8/28/81, TLU.)

BY MR. POPE:

Q Calling your attention to the document which

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has been marked as Exhibit No. 25, Mr. Papageorge, are you familiar with that document?

A Yes.

Q Would you describe what it is, please?

A This is a report issued by the Federal Interdepartmental Task Force on PCBs in May of 1972 entitled Polychlorinated Biphenyls and the Environment.

Q Did you have some input into that report?

A Yes.

Q Did that report include some figures from Monsanto sales of PCBs in relevant years?

A Yes.

Q Would you turn to that portion of the report, I feel it is early in the report.

Is it true, Mr. Papageorge, that the sales of hydraulic fluids containing PCBs by Monsanto rose from some 5 million pounds in 1968 to some 8 million pounds in 1969?

A Yes.

Q Is it also true that in --

MR. SCHINK: Are you asking him '68, '69 -- your questions before were sales in '69 versus '70. You are now directing him to different figures.

MR. POPE: I am asking whether they increased from

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one year to another year.

MR. SCHINK: But you have been asking a series of questions about whether sales of Monsanto increased from 1969 to 1970.

MR. POPE: Okay, let us talk about 1969 to 1970, Mr. Papageorge.

BY MR. POPE:

Q Is it true that focusing on Aroclor 1242, the sales went --

MR. SCHINK: Now you are jumping from hydraulic fluids. You were asking Aroclor 1242.

BY MR. POPE:

Q 1969, what does it show with respect to sales of Aroclor 1242?

A In 1969?

Q Yes.

A 45,401. I have forgotten the units, what the units are. These are thousands of pounds, so that 45 million pounds --

Q What did it go to in 1970?

A It went to 48,000,588.

Q Was there any impetus within the company or within the task force that you were working on to increase sales of Aroclor 1242 from 1969 to 1970 that

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you are aware of?

MR. SCHINK: I object to the form of the question.
He didn't even join the task force until 1970.

BY MR. POPE:

Q Do you have any explanation for why the sales increased that much during that period?

A No.

Q As far as you know, was there any decision made to push the sale of 1242 which had not yet been found in the environment until 1969?

A Not to my knowledge, no.

Q Do you have any explanation for why the sales of hydraulic fluids and lubricants in the United States as manufactured by Monsanto went from \$5,765,000 to \$8,039,000?

MR. SCHINK: In 1968 to 1969?

MR. POPE: Yes.

BY THE WITNESS:

A You will have to ask the Marketing people for that.

BY MR. POPE:

Q This is Table 1 we have been referring to entitled PCB Manufacturing and Sales Data for Monsanto Industrial Chemicals Company, is that right?

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A Yes.

Q 1957 through 1971?

A Yes.

Q Did you accumulate that data and submit it to the Interdepartmental Task Force?

A It was accumulated at my direction.

Q Did you take steps to ensure that the numbers shown there on that Table 1 are accurate?

A As best I could, yes.

Q Has anything occurred since your department submitted that to the Interdepartmental Task Force that leads you to believe they are not accurate?

A No, no.

Q That is true both as to overall sales as well as to the various breakdowns shown on Table 1?

A Yes.

Q When was the decision made by Monsanto to make that information available?

A Sometime in the period 1971 to early 1972.

Q Who made the decision?

A I just do not remember. I don't remember anymore.

Q Why was the decision made to change the policy?

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A I believe it was decided that we could make an exception for the PCBs as distinguished from all of our other products because we had already by that point in time withdrawn from many of the applications.

If I recall correctly, the only PCB sales made when this was made available was to the dielectric industry.

Q Pursuant to indemnification agreements?

A Yes. There was some sort of an agreement involved, yes, so the PCB product line as of late 1971, early '72, was not typical of our other product lines; very limited, very limited list of customers, so the principle of not divulging this kind of information no longer applied.

I believe that was the rationale that evolved within all of our thinking.

Q By that point in time had you been hit with a number of requests for information such as production figures?

A Yes, the requests were continuing to come in.

Q Until the decision was made with respect to making this information available to the Interdepartmental Task Force, had you made the decision it was not

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available and violated the company policy?

A Yes.

Q Would it be true this information we have just been talking about was made available to this task force in early 1972?

A That is the period my memory says is about right.

Q What other information, if you recall, did you submit directly to the task force for purposes of inclusion in this report or analysis?

A Monsanto representatives made a presentation to the task force in which we reviewed with them biodegradation results and I believe most of that information was eventually incorporated in this report.

Q Was that presentation made in your presence or by you?

A I was present. I just served the role of making opening remarks and closing remarks and then we had Dr. Tucker speak and Dr. Munch. I believe they were the principal spokesmen.

(Papageorge-OMC Deposition

Exhibit No. 26 marked for

identification, 8/28/8, TLU.)

BY MR. POPE:

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Q Mr. Papageorge, I show you a document that we have had the reporter mark as Papageorge Deposition Exhibit No. 26 for identification, being an 8-page document, first page of which bears the number 0001248 from Dr. Tucker to Dr. Keller, dated January 29, 1970.

Would you review that document and tell me if you received a copy on or about the date it bears.

A I recall this report and I did receive a copy.

Q Presumably around the date it was prepared?

A Yes.

Q What was Dr. Tucker doing by way of this kind of monthly summary? This is in addition to the other summary we just got through talking about for Functional Fluids?

A The other summary is a summary, a group of summaries. Each of the members in Dr. Keller's staff prepared a summary. Dr. Keller and his assistants would then prepare a composite report for the whole department.

Q Do I correctly understand that you received a copy of this particular report because it dealt with the issue of degradation of Aroclors?

A Yes.

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Q Is what is attached here copies or pictures of what Dr. Tucker was finding in use of his gas chromatograph/mass spectrometer?

A Yes -- it is difficult to conclude.

MR. SCHINK: The question is was that what he was finding in that equipment?

BY THE WITNESS:

A I have to assume that.

BY MR. POPE:

Q In the exhibit, is it depicted on there what Aroclor looks like as opposed to Lindane or any of these other chemicals?

A I have some difficulty understanding this particular chart which refers to Aroclors 1248, 1254 and then '60, and then lists peaks related to pesticides. I can only assume he had a mixture of these Aroclors and in that mixture he had these pesticides and which is what the total fingerprint looks like.

Q How about these, are these actual fingerprints?

MR. SCHINK: These are the page numbered at the bottom 0001253.

BY THE WITNESS:

A These are the fingerprints of pure Aroclor

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1248, 1254, 1260, '62 and '68, and then the bottom chart is a mixture of '48, '54 and 1260.

BY MR. POPE:

Q That is how the indications come out after the running of a gas chromatograph/mass spectrometer?

A Yes.

Q The mass spectrometer doesn't show anything like that?

A The mass spectrometer has a different display than this.

Q What is this on the 1252 page?

A The 1252 page includes the Aroclor 1221, 1232, 1242. That completes the family.

Q The project that Dr. Tucker is summarizing here on Exhibit 26 is, I take it, the same project that was referred to and we discussed a moment ago in terms of monthly summaries, Exhibit 24, is that right?

A Are you referring to the biodegradation study?

Q Yes.

A Yes.

Q With respect to volume of production of PCBs, do I understand correctly that you did not discuss with anyone at Monsanto making that information available prior to going up to the Duluth meeting, is that

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correct?

A That is correct.

MR. SCHINK: He has answered that question three times, Mr. Pope.

MR. POPE: I think he said that that was correct. Is that your recollection, Mr. Schink?

BY THE WITNESS:

A That is correct.

BY MR. POPE:

Q Was it a surprise to you when that question was asked at the meeting?

A No.

Q Had it been asked of you or of other representatives of Monsanto in the past?

A I don't know.

Q Why wasn't it a surprise? Was it a standard question?

A Yes, it is a very natural kind of question. It is always asked.

Q And as a matter of fact, Mr. Wheeler had told you in the memorandum that that was going to be one of the subjects that was going to be under inquiry at that meeting, hadn't he?

A I don't remember that.

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MR. POPE: I would ask the reporter to mark as Papageorge Deposition Exhibit No. 27 for identification, a memorandum from Mr. Wheeler to Mr. Papageorge, dated February 23, 1970, with a 2-page attachment, basically being Dr. Mount's letter to Monsanto.

(Papageorge-OMC Deposition
Exhibit No. 27 marked for
identification, 8/28/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, I show you the document we have marked as Exhibit 27 and ask you if you received the original of it on or about the date that it bears.

A Yes, I recall this memorandum now, yes.

Q So Mr. Wheeler did tell you ahead of time that one of the subjects under discussion at the Duluth meeting was going to be the volume of PCBs produced in the United States, is that right?

A Yes, yes.

Q Did you meet with Mr. Wheeler to decide who should go to the meeting representing Monsanto?

A I believe we did, yes.

Q At that time did you discuss with him or anybody else whether to produce any information for the people at the meeting with respect to the volumes

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of production of PCBs in the United States?

A Very briefly, we just mentioned that this was going to come up and we all knew the company's policy regarding divulging this type of information.

We decided that the answer we would give would be to say that we could not respond to that request.

Q Did you make any preparation of information to give at that meeting, you yourself?

A I myself?

Only to jot some pencil notes, one-word type notes to help me when I made my presentation.

Q Did you use this memorandum in organizing your presentation?

A Yes.

Q No. 5 relates to the types of PCBs that are most toxic.

Did you make any response to that or did you include that subject matter under your presentation?

A That is Mr. Garrett's part of the program, who accompanied me.

Q What did he say about the subject of which types of PCBs were most toxic?

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A I think, as I recall, he reviewed the results we had on the acute toxicity screens and status of the ongoing long-term studies.

Q He did not make any reference to possible liver damage, did he?

A I don't remember the liver damage personally, no.

MR. POPE: I'm going to ask the reporter to mark as Papageorge Exhibit No. 28 for identification, a 24-page group exhibit, first page of which is dated February 16, 1970, from Norman T. Johnson, titled Pollution Letter, with the identification number at the bottom right-hand corner of 0001358.

(Papageorge-OMC Deposition

Exhibit No. 28 marked for

identification, 8/28/81, TLU.)

BY MR. POPE:

Q Mr. Papageorge, I hand you that document and ask you if that is one that you have seen before.

A I have a question when you ask me have I seen it before. At the time it was published or --

Q Ever. If you have seen it in the last week or so, that counts.

A I saw it recently.

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Q In preparation for the deposition?

A Yes, the top, but the attachments I of course say as they were being prepared.

Q A few minutes ago when I asked you whether you had ever heard of a salesman being advised not to put information regarding PCBs in writing to customers, did you have that first paragraph in mind when you answered that question?

A No. I had my understanding of corporate policy. I did not have any specific paragraph in mind. That is the first and only evidence I know.

Q As you read this first paragraph in Exhibit 28, that would violate corporate policy as you understand it, is that correct?

MR. SCHINK: What are you talking about, the entire thing, the answer will be sent from St. Louis?

MR. POPE: "No answers should be given in writing."

MR. SCHINK: If you are going to read a sentence, you should read the whole thing: "If the customer asks a question you can't answer or if he wants an answer in writing, then send his questions to me and we will answer from here."

That is the sentence you are referring to as well, Mr. Pope?

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MR. POPE: Read the question.

(Question read.)

BY THE WITNESS:

A Corporate policy says we will respond to the request and this whole paragraph does adhere to the policy.

BY MR. POPE:

Q I see. As you read that paragraph, Mr. Johnson is not telling his salesmen to put anything in writing, is he?

A What he is saying is that his salesmen, as I read it, may not have all the facts and if the answer is requested in writing, it is best it be conveyed into St. Louis where Mr. Johnson would see to it that the proper answer is prepared.

Q Why would it be important that an answer that is requested in writing come from St. Louis as opposed to from an individual salesman?

A Only because in a fast evolving situation like PCBs, that salesman in the field may not be right up to date on any findings from studies, on new reports and the like.

Q And that would be the case where the situation calls for an oral answer or a written answer, wouldn't

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it, is that right?

A That's true.

Q I detect from your answer you didn't see this letter, the first two pages of Exhibit 28, in February of 1970, is that correct?

A I don't remember seeing it in February of 1970.

Q Based on your understanding of your knowledge of what the practice was, was it the normal practice for Johnson to show you this type of letter, either before it went out or contemporaneously with it going out?

A No, it was at his discretion. He sometimes came to me and sometimes didn't come to me.

Q Was it necessary with a letter like this to screen or check with his boss before he sent out that type of a letter?

A Not necessarily. He is a responsible manager. He can make those decisions.

Q How about the letters that are attached to Exhibit 28? Can you determine who they went to, who it was intended they go to?

A Let me see them.

Q I don't want to misstate. I guess there are

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only two letters attached, is that correct, Mr. Schink, one dated February 9 and one dated February 10, 1970 for both.

A Reading the letter dated February 9 from Mr. Donald A. Olson, signed by Donald Olson, it would seem to me that the letter was intended for customers of Aroclors, customers of Pydraul and customers of Turbinol and Therminol.

Q Do you mean to include within that customers of all the Pydrauls and all the Therminols?

A Yes. Now, the letter dated February 18, 1970, also signed by Donald Olson, primarily because of the last paragraph appears to be aimed at the user of PCBs as a dielectric in electrical equipment.

Q So the intent would be that would go exclusively to those people involved in the dielectric and electrical equipment area, would that be correct?

A That is my understanding.

Q Did you assist in the preparation of those letters, either or both of them?

A I reviewed drafts, earlier drafts.

Q Did you make any comment, do any editing?

A Yes, I don't recall what, but I recall marking up a copy.

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Q How was the draft of that letter of February 9, 1970 conveyed to you?

A There were two different groups preparing similar letters: One of two ways. It was either hand carried, given to me with a request that I review it and quickly comment, which I recall on several occasions.

Then there was also the situation where I received a copy in the mail asking for my comments.

Q With a cover letter or a cover memo?

A With a little notebook slip that said, "Please review and let me know your comments."

Q Who did you get that draft from?

A This came out of Norm Johnson's office, the February 9 letter.

The February 18 letter would come out of Paul Benignus' office.

Q And the February 9 letter, was it drafted originally by Mr. Johnson?

A I don't know.

Q Was it your understanding that the February 9, 1970 letter would be the first letter that would go off to Pydraul customers with respect to the PCB problem generally?

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A No. I did not in any way look on this as the first letter.

Q I don't mean to be confusing in my question.

This was in fact going to be the first letter, is that right? There were not any prior letters, were there?

A To my knowledge, there was not.

Q You mean you did not think of it as a first letter, as a first in a series of letters, is that right?

A Yes.

Q But as far as you know, no letter had yet gone out by February 9, 1970 to Pydraul customers with respect to this general subject matter?

A That is correct.

Q This subject of advising customers of something respecting PCBs was the subject matter of more than one discussion at your Interdepartmental Task Force meetings, was it not?

A Yes.

Q What was the intent of Monsanto, what were they trying to convey in a general way to customers?

MR. SCHINK: Which customers are you referring to now?

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MR. POPE: Since they were different letters in different customer groups and there are several different references in the letter --

MR. SCHINK: This case relates to a Pydraul customer. I would suggest that after a day and a half of waiting around, we are moving up to the point where the inquiry ought to be somewhat narrowed to the relevant product and the relevant customer group.

MR. POPE: Mr. Schink, you may have been waiting around for a day and a half, but Mr. Papageorge and I have been working and we haven't been alone.

BY MR. POPE:

Q My question, Mr. Papageorge, is when these questions came up in these task force meetings, what was it you wanted to convey to the customers in general?

A The thrust of our communications was intended to inform the customer, give him any information that would make him more knowledgeable of what was going on and better equipped to conduct his business in a more responsible fashion.

What this called for is a judgment call on was a little piece of irrelevant or isolated information going to be helpful or confusing. If the customer

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knew about it, what would he do with it and we wanted to make a decision of that nature where we'd wait awhile until we got more information or give it as it developed.

Q Was the fruit of that product, that process, these two letters, the February 9 and the February 18 letters?

A This was the fruit of the product at that point in time, sure. That's all we knew then, pass it on.

Q With respect to the February 9 letter, was this letter intended to go to customers that were currently using products that contained PCBs, and by currently, I mean of course at the date the letter was sent?

A This was not sent to all customers on record on February 9.

Q As of February 9, 1970, was it a fact that Aroclor 1254 had not been found in the environment?

A No, the reverse is true. Aroclor 1254 was being found in the environment.

Q Aroclor 1248 and the lower had not been found in the environment?

A Had not been reported as being found in the

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environment, correct.

Q As of February 9, 1970, was Monsanto aware of reports from some investigators indicating that the findings of 1254 in their opinion were in truth 1242, 1248 that degraded?

A Not on February 9.

Q As of February 9, 1970, what basis did Monsanto have for the statement that PCBs with chlorine content less than 54 percent appear to present no potential problem to the environment?

MR. SCHINK: Let's read the complete sentence, Mr. Pope.

MR. POPE: Mr. Schink, there are two different phrases.

MR. SCHINK: It says, "have not been found in the environment and appear to present no potential problem to the environment."

MR. POPE: Of course, but if I ask that question, you would say I am asking a compound question, so I am focusing on the second part of the statement and giving him the context.

BY MR. POPE:

Q With respect to the second part of that statement, Mr. Papageorge, what basis was there as of

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February 9, 1970 for the making of that statement?

A First, there was no report of harm as such and the fact that it wasn't being found in the environment further reinforced the belief that there probably is no problem.

Q There were no reports of harm in where, the medical literature, in the tests that you had done?

A Anywhere. There was no report of fish kill caused by presence of PCBs, no reports of any of the typical kinds of harm, brown vegetation and, you know, name it.

Q Who was responsible for determining whether there were any reports of harm for purposes of that letter?

A I think it was divided as we said earlier between the Medical Department and the Research Department and anyone else.

Q It wasn't Norm Johnson's department to figure that out, was it?

A No, no, but they relied on the Research Department, Medical Department.

Q Did the Research Department and Medical Department sign off on that letter before it was sent?

A Yes.

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Q How did they do that?

A Just the way I did. They were sent drafts and asked to comment.

Q Is there any written response from Dr. Richard or Dr. Kelly?

A I have not seen one, I don't know.

Q Was this one of the areas in which you were the coordinator of flow of information?

A No. The information that was supplied to the authors of this had flowed through the task force prior to the wording.

Q Had drafts of that letter been reviewed at task force meetings, referring to the February 9, 1970 letter?

A I don't remember. The idea of a letter was discussed at a meeting and each Marketing Group was instructed to go back and compose its letter and send it individually for review.

Q How do you know that the Medical Department and the Research Department had reviewed that and given their okay? You didn't seek out Dr. Kelly and Dr. Richard and get an initial or anything, did you?

A No, but subsequent meetings of the task force, when the status of the letter mailing was

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reviewed around the table, as the Research spokesman reviewed he would mention, we reviewed a letter from Mr. Johnson's office, Mr. Benignus' office and the like. So within the room we touched base with each other as to who was involved and who had yet to compose his letter and had not started the mailing and so on.

Q This is after this had gone out?

A After some of these had gone out and others were yet to be issued or were in the process of being mailed also. Sometimes as we met, the secretary would be stuffing envelopes.

Q Between you and Mr. Johnson, whose job was it to get approval of the Medical Department or Research Department?

A Mr. Johnson.

Q As far as you know, he did?

A Yes.

Q The seventh page of this Exhibit No. 28 is a copy of an editorial in Chemical Week, or an article.

A It is an article.

Q Contained in that article, what is this, the standards used by the State at that time?

A This was Chemical Week's summary of the status of water pollution regulations, State by State

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at that point in time.

Q Was it the intent of the task force to send this along with the letter, either of February 9, 1970 or February 18, 1970?

A Yes.

Q Was that done?

A Yes.

Q Was it the intent to send this letter of February 9, 1970 to customers that no longer were using PCB-bearing fluids?

A Not to my knowledge.

Q Was it the intent of the company in compiling and mailing this to differentiate between customers that were using Pydrauls containing Aroclor 1254 from those that contained Aroclor 1242 and the other members, any lower chlorines?

A No, the intent was to send all customers on record purchasing these products, irrespective of whether they contain or did not contain Aroclor 1254 or 1260.

Q When you read the draft of this letter, the February 9, 1970 letter, did you ask yourself what Mr. Olson was referring to by the use of "these products" in the first sentence of the last paragraph?

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A To me that means industrial functional fluids.

Q Did anybody in any of the discussions you had with respect to drafting of that letter suggest to you or suggest to the group, if it was a group, that in the context of the letter the term "these products" could reasonably be seen as referring only to Aroclors 1254 and 1260?

A No, that thought was not raised.

Q That was not discussed in your presence?

A That's right. The word product in the last paragraph is a composite of new products here and mentions products -- it's all products discussed.

Q So it was your intent, at least this statement that:

"We feel that all possible care should be taken in the application, processing and effluent disposal of these products to prevent them from becoming environmental contaminants" included products with the chlorine content of less than 54 percent which have not yet been found in the environment and appear to present no potential problem to the environment, is that correct?

A Yes, yes.

Q Do you know who drafted that first sentence

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in the second paragraph on the second page of the February 9, 1970 letter?

A No, I don't know.

Q Do you know whether it was you or not?

A I know I didn't compose it, but I also know that I made a comment that could have resulted in the final phrase.

Q Was the original draft making some specific reference to application, processing and effluent disposal only to some of the Pydraul fluids?

A No. The original draft abruptly introduced the attachment, as I recall. I raised the point that the reader caught cold with a letter like this probably needs some understanding of why the attachments, so I suggested that we introduce something having to do with effluent, proper effluent disposal and then lead into the attachment.

Q At that point in time did any of the States have any regulations or requirements with specific reference to PCBs?

A No, not PCBs. If you will read in there, you will see some unsightly, deleterious, other wastes objectionable and putrescent; broad connotations.

Q At the balance of this Exhibit No. 28, there

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also appears to be a series of questions and answers on various subjects that might arise with respect to PCBs, is that right?

A Yes.

Q Where did that come from?

A As best I remember, this was put together by Ed John with the assistance of the members of the task force.

Q Ed John was the Public Relations fellow inside Monsanto that was assisting the task force?

A Yes.

Q Was he a member of the task force?

A Yes.

Q At the risk of offending, Mr. Schink, I'm going to have to ask, did we identify who those people were on your task force?

MR. SCHINK: Not in the last two hours.

MR. POPE: Then you have no objection.

MR. SCHINK: It is no more relevant than most of the other inquiries.

Do you want to name them again, quickly?

BY THE WITNESS:

A I thought we did that early this morning.

MR. SCHINK: We did.

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BY THE WITNESS:

A Dr. Richard and Farrar representing Research; of the two Business Groups, Marketing Directors, Mr. Olson and Mr. Schalk, the PR representative, Mr. John -- let me think here.

MR. SCHINK: Mr. Park?

BY THE WITNESS:

A (Continuing.) Mr. Park from the Legal Department, Mr. Wheeler representing the Medical Department, either Mr. Wheeler or Dr. Kelly or both appear; Mr. Bergen and Mr. Springgate were obviously automatic.

BY MR. POPE:

Q Ex officio, right?

A Right. I believe that represents the group that met every time there was a need to and we were joined by others who had specific interest for an item that might appear on the agenda.

Q But that first group was basically the one that attended each of the meetings?

A Yes.

Q Did you call these meetings or were they set on a regular time and place?

A I called them.

Q Did a draft of these questions and answers

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get circulated at the task force?

A I don't recall. If it didn't get circulated, it was sent to members of the task force for comment and contribution.

MR. POPE: I would like to ask the reporter to mark as Papageorge Exhibit No. 29 for identification, a 3-page document being notes, Industrial Contact Report, dated February 23, 1970 from Monsanto Chemicals, Ltd. Research and Development Department, Ruabon.

(Papageorge-OMC Deposition
Exhibit No. 29 marked for
identification, 8/28/81, TLU.)

BY MR. POPE:

Q I hand you Papageorge Exhibit 29 and ask if you have ever seen it before.

A I recall this report, yes.

Q Can you tell me what the report consists of, what it attempts to summarize?

A It is a report of a meeting that two Monsanto representatives had with two individuals. I don't recall at the moment.

The way this reads, one individual was present at the discussion.

MR. SCHINK: He is not asking you to read the

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document. After reading --

MR. POPE: I had a hard time understanding what was going on with that document, so I want to know what your understanding about it is.

BY THE WITNESS:

A It is a report of a laboratory in Holland that was studying PCBs. And this is the first report that I or Monsanto saw or first awareness that PCB mixtures manufactured by different companies showed different toxicity results.

This is the first mention that I personally saw of the material chlorinated dibenzofurans as being in the opinion of Dr. Koeman, potentially highly toxic.

There are some numbers here about Rhine River water and some references to the analytical methodology used by the laboratory.

BY MR. POPE:

Q Were chlorinated dibenzofurans present in any of the PCB products that were sold by Monsanto?

A No.

Q Was it present in other products sold by Monsanto?

A No.

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Q Was that piece of information relative to your work that he was finding, referring to chlorinated dibenzofurans and their high toxicity?

A It is relevant in that that contaminant is not found in Monsanto's material which could explain the difference in toxicity results observed by that laboratory.

Q There is a reference in the third paragraph under No. 1 to some amounts of that material in a Monsanto material, is that correct?

MR. SCHINK: I don't think you properly characterized what it says. It says: "In fact, the figure for Monsanto material is below the sensitivity of the analytical methods used and is based on the toxicity trials."

MR. POPE: There would be no reason for me to read that now, would there, Mr. Schink?

BY MR. POPE:

Q Did you later on determine that there were no chlorinated dibenzofurans in Monsanto products?

A Yes.

Q So this was wrong, you concluded that that was not an accurate statement?

A It's not inaccurate either. Zero is less

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than a tenth.

Q What is Ruabon?

A Ruabon is a city in Wales.

Q Is that a city where Monsanto has its plant in Wales?

A Yes.

Q Did it manufacture PCBs?

A Yes -- no, no. I stand corrected. We did not manufacture in Ruabon. We had a laboratory in Ruabon, research laboratory.

Q Did you manufacture any PCBs in Europe?

A Yes.

Q Where?

A In Newport, Wales.

Q What type of research laboratory did you have at Ruabon?

A Quite similar to the laboratory directed by Dr. Richard but on a smaller scale.

Q Were they equipped with a gas chromatograph?

MR. SCHINK: When?

MR. POPE: Say January 1970.

BY THE WITNESS:

A As I recall, they had an instrument available to them for their other studies, yes.

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BY MR. POPE:

Q How about a mass spectrometer?

A I don't know.

MR. POPE: I would like the reporter to mark as Papageorge Deposition Exhibit 30 for identification, a 2-page document being a monthly summary dated March 1970 for Functional Fluids.

(Papageorge-OMC Deposition
Exhibit No. 30 marked for
identification, 8/28/81, TLU.)

BY MR. POPE:

Q Is that a portion of a document that you received in the ordinary course of business shortly after the end of March 1970?

A Yes.

Q In its original form, how many pages did it contain, approximately?

A Typically, a half a dozen sheets.

Q Was this information in a series of Dr. Keller's summaries for various people within the company of work being done in his laboratory?

A Yes.

Q The first paragraph under Aroclor Environmental Program, you changed the name by March. What does that

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refer to, if you know?

A This refers to all the activity within Dr. Keller's laboratory related to PCBs.

Q The first paragraph?

MR. SCHINK: His snide remark is what got you off. He asked you about this first paragraph.

MR. POPE: The first three words, no. I wouldn't ask about those.

THE WITNESS: This first?

BY MR. POPE:

Q I take it the first paragraph refers basically to an incident involving the WARF Laboratory, is that right?

A Well, it does refer to the WARF Laboratory and it appears that this is a report on some exchange of information that took place between the two laboratories. That's all I can add.

Q Was that a communication to people of Monsanto that PCBs were being detected in fish in Lake Michigan?

A Yes.

Q And the findings had been made at what Aroclor levels?

MR. SCHINK: Now you are asking what his recollection is, or are you asking him to read the document?

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The document speaks for itself. If you put the document down and he has a recollection, I don't have any objection. Whatever the document says, it says, Mr. Pope.

MR. POPE: I have never yet heard a document speak. I have listened and listened for one to speak.

BY MR. POPE:

Q Mr. Papageorge, will you speak for us in lieu of the document speaking?

What Aroclors were found?

MR. SCHINK: If you remember.

BY MR. POPE:

Q If you remember.

Does that refresh your recollection?

MR. SCHINK: Would you like to look at the document and see if that refreshes your recollection to see what Aroclors were found in the fish of Lake Michigan?

Do you now remember?

MR. POPE: Let him read it first, Mr. Schink.

BY THE WITNESS:

A I can read the report, but this doesn't refresh my recall.

BY MR. POPE:

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Q Was that the first indication that Monsanto had that Aroclor 1248 had been detected in fish in Lake Michigan?

MR. SCHINK: That is not what the document says, Mr. Pope. You have mischaracterized it.

MR. POPE: I waited for it to say something and it wouldn't.

MR. SCHINK: Well, it doesn't say that.

BY MR. POPE:

Q You can answer the question, Mr. Papageorge.

A I don't know.

Q When was the first time that you were aware that PCBs had been detected in fish in Lake Michigan?

MR. SCHINK: May I see the document, please, Mr. Pope?

(Document tendered to

Mr. Schink.)

BY THE WITNESS:

A When I visited the WARF Laboratory I was informed that they were detecting PCBs in fish.

BY MR. POPE:

Q Did they tell you what Aroclors they were detecting in those fish?

A They did, but I don't today recall.

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Q Was it 1242?

MR. SCHINK: He said he doesn't recall, Mr. Pope.
Why don't you get on to something else.

MR. POPE: I am asking something. He knows
what the Aroclors are. I think he has testified to
that.

MR. SCHINK: He said he didn't recall.

BY THE WITNESS:

A I just don't remember.

BY MR. POPE:

Q At what point in time was work begun on the
incinerator to dispose of PCB products?

MR. SCHINK: I didn't understand, incinerator
exposed?

MR. POPE: You didn't understand. Let me
rephrase it.

MR. SCHINK: Excuse me.

THE WITNESS: I didn't understand the question.

BY MR. POPE:

Q The last exhibit we looked at, Exhibit No.
29, was that sent to St. Louis shortly after the time
it was prepared for the file, as far as you know?

A Normally they would be. I can't speak for
that particular one.

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Q That would be the indication in the top right-hand corner, is that right?

MR. SCHINK: What would be the indication?

MR. POPE: The document would be sent to multiple people in St. Louis.

BY THE WITNESS:

A Yes.

BY MR. POPE:

Q That would be the regular practice, is that right?

A Yes.

Q Was Ruabon doing any biodegradation tests as well as Dr. Tucker?

A Yes.

Q Was there any reason why that laboratory was selected to do work on biodegradation?

A Our Ruabon Plant had the most sophisticated biodegradation system in the plant, the waste effluent treatment works, so they had some expertise in this area already established for all other kinds of chemicals and we asked them to look at PCBs for us.

Q Then the reference at the bottom of Exhibit No. 30 is to "Seven Laboratory prepared chlorinated diphenyl ethers were sent to Ruabon, U.K. for

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biodegradation studies."

What are chlorinated diphenyl ethers?

A An ether contains oxygen, so I consider the two biphenyl ring with an oxygen and chlorines attached.

Q What was being sent there and why, if you know?

A Well, it says that these were looked at as potential alternatives when you send the material to see if it degrades otherwise.

Q Was that laboratory your most sophisticated, Monsanto's most sophisticated laboratory for purposes of biodegradation studies?

A At that point in time.

MR. POPE: I have no objection to Mr. Papageorge going home for the weekend.

Have a good flight.

THE WITNESS: I appreciate that.

(At 3:30 o'clock p.m., the deposition was adjourned to be resumed on Monday, August 31, 1981, at 9:00 o'clock a.m.)

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