A Yes, sir.

Q Now when you married James he had the one child, James, that is here now?

A Yes, sir.

Q When you married Mr. Greenhill in 1975, James lived with his mother, your acquaintance, Sandra Watkins, didn't he?

A Yes, sir.

Q Now Mr. Louevering, your second husband, did Jim work for him?

A No, sir.

Q When Jim worked for Sky Freight when he worked for Mr. Louevering was that someone of your second husband's family?

A No, he worked for me. He didn't work for Mr. Louevering.

Q So, when you met him he was working for you at Sky Freight?

A No, sir.

Q You and James made a decision when you first got married not to have any children, is that correct?

A We made a decision not to have children, but it wasn't when we first got married, no.

Q But James -- you made a choice before James got sick to have a vasectomy and not have anymore children?

A Yes, sir.

Q Did Mr. Greenhill smoke, to your recollection?

A Not while he was with me, no.

Q But did he smoke at one time?

A Yes, sir.

Q And did he occasionally drink beer?

A Occasionally.

Q Now the wood stove, that was the only heating source that you had in Oregon?

A Yes, sir.

Q And did you burn the wood -- and he burned wood for that heating source, correct?

A Yes.

Q And was that the same in Arkansas as well?

A Yes, sir.

Q When you had these cookouts did you grill the meat, grilled meat and barbecues and things?

A Yes, we cooked out.

Q And did you have a family dentist when you were married?

A Yes, we did.

Q Do you recall who that dentist was?

A Dr. Serviews (pho).

Q Now, Mrs. Greenhill, when Mr. Greenhill went to Dr. Teeter in 1978 he went because of severe back pain, didn't he?

A He went to Dr. Teeter as a result of the accident from the Forest Service with his back, yes.

Q But he had severe back pain prior to going to Dr. Teeter in 1978?

A No. No, he only had the back pain after he had the accident.

Q Is it your recollection, ma'am, that he never had any back pain until he had the accident in 1978?

A That's correct.

Q Are you sure he didn't have any severe back pains prior to going to Dr. Teeter, ma'am?

A Not that I remember.

Q Mrs. Greenhill, do you remember that I came up to Arkansas in your home -- in your home town -- and took your deposition? Do you recall that?

A Yes, I do.

Q Okay. And do you recall me asking you these questions and you giving these answers?

MR. BALDWIN, JR.: What is your page number, Counsel?

MR. ORTEGO: Sure, I am sorry. Page 52, Line 21 to 25:

(Mr. Ortego continuing:)

Q "How long did he complain about his back pains before he went to see Dr. Teeter?

"I don't remember how long. It seemed like quite a while." "But it was bad before and it was getting worse?" 'Oh, yes, definitely."

Now, his back pain was pretty bad before he even went to Dr. Teeter in 1978, wasn't it?

A From the accident, yes, sir.

Q But before he even went in 1978 he had severe back pain, as you stated in your deposition, didn't he?

A What I meant in that deposition was from the accident, sir.

Q But when I asked --

A That was what we were talking about at the time.

Q When I asked you the question, ma'am -- let's see if I'll ask the question again, maybe we will see again. It says --

A Obviously he had back pain before he went to Dr. Teeter, because that is why the Forest Service sent him to Dr. Teeter because of his back pain. But he didn't have back pain relating to anything else but the accident.

Q Isn't it, ma'am, isn't it fair to say that the Forest Service didn't send him to Dr. Teeter? He went on his own. You found Dr. Teeter in a phone book and that's why you went, because he had severe back pain way before the Forest Service accident?

A No, sir.

Q Let me ask you -- I remember asking you this question: "What doctor did he go see?" This is Page 52. "The first doctor, yes, was Dr. Teeter," was your answer.

"How did he go to Dr. Teeter? How did he find him?"

"In the phone book."

"And how long did he complain about back pains before he went to see Dr. Teeter?"

"I don't remember how long. It seemed like quite a while."

"But it was bad before and it was getting worse?"

"Oh yeah, definitely."

I'll move on. When is the first time that your husband found out that he had Hodgkin's disease?

A After the biopsy.

Q And that was when Dr. Cole said that he had Hodgkin's disease?

A I don't remember which doctor it was, but it was in St. Mary's.

Q Now Mr. Greenhill you say was very healthy before he started working in the Forest Service. He didn't go for regular physicals, did he?

A Not that I know of.

Q As a matter of fact, he rarely saw doctors or rarely had tests before the back pain in 1978, isn't that correct?

A He didn't have any need to see doctors.

Q So up until the time where he started getting severe back pains in 1978 he really didn't see any doctors, did he?

A I don't know.

Q Do you remember him seeing any doctors as you sit here now?

A Not that I remember.

Q Now, ma'am, you said that he joined the Forest Service even though it was less money because he loved the outdoors, was that your testimony?

A Yes, sir.

Q Isn't it fair to say that he joined the Forest Service because it was for more money than he was making, and that at his other job he really wasn't getting paid?

A Not that I know of.

Q Ma'am, do you remember being asked these questions on Page 32, ma'am?

"When you got married, why did he leave the other job when you got married?"

"More money."

"Was that the other job, the United States Forest Service?"

"Yes."

Wasn't it a fact, ma'am, that he was making more money at the Forest Service than he was at his other job and that's

the reason why he took the job?

A No, sir.

Q Now you say you recall today as you sit here, ma'am, that he made how much an hour?

A Six dollars and some cents per hour.

Q When did you remember that he made six dollars an hour?

A I don't know.

Q When I took your deposition and I asked you how much he made an hour, you didn't remember. And that was this year, as a matter of fact, isn't that correct?

A That's correct.

Q But now you remember how much he made an hour?

A Yes, sir.

Q But at the time of the deposition when I asked you you said you knew nothing about his wages, isn't that correct?

A At the time of the deposition I didn't know what I was going to be asked, so I didn't check into dates or monitarial things at all.

Q Well, did you check into how much money he made in 1976 and 1977?

A No, sir.

Q So is it fair to say that you are just estimating how much he made an hour?

A No, sir.

Q Well, how many hours a week did he work at the Forest Service in 1976?

A Total?

Q Well, a week, and how many weeks did he work there?

A He worked nine months out of the year, five days a week eight hours a day.

Q So he worked forty hours a week?

A Yes, sir.

Q For about thirty-six weeks?

A Approximately.

Q And you say at six dollars an hour, is that fair to say?

A That's fair to say.

Q But isn't it also fair to say that according to his W-2 in 1976 he only made $3,000 with the United States Forest Service, ma'am?

A I don't know.

Q Well, if I showed you his 1976 Wage & Tax Statement from 1976, would that change your mind?

MR. ORTEGO: If I may approach, Your Honor?

THE COURT: Yes.

Q It says from the U.S. Department of Agriculture Office of Management and Finance, National Finance Center. What does it say your husband made in 1976, ma'am?

A Three thousand --

Q Oh, I'm sorry.

A Three thousand one hundred, looks like, sixty-three. I am not sure about that.

Q Thank you, ma'am. So, ma'am, would it be fair to say that you might have been mistaken this morning when you told us how many hours a week and how much he made per week, and how many months he worked in 1976 at the Forest Service?

A I don't believe so.

Q Now is it also fair, ma'am, that for 1977 the whole year your husband made less than six thousand dollars a year that year?

A I don't believe so. I don't know for sure.

Q Ma'am, when he worked at the Forest Service he was a seasonal worker, that he only worked part of the year, is that correct?

A Yes, sir.

Q And he worked part of the year of 1976 in Oregon for the Forest Service and part of the year of 1977 in Oregon for the Forest Service, isn't that correct?

A Yes, he did.

Q And in the off-season --

MR. BALDWIN, SR.: I believe the evidence is also he worked part of the year of '78.

MR. ORTEGO: I will get to that, Mr. Baldwin. I

won't leave that out.

(Mr. Ortego continuing:)

A Yes, sir.

Q And in the off-season when he didn't work for the Forest Service he didn't have any other job, but he was self-employed cutting wood?

A That's correct.

Q And you assisted him in cutting wood?

A Yes, I did.

Q Now in '78 he worked for the Forest Service in the Ozark National Forest, did he not, ma'am?

A After the Oregon Forest Service, yes, sir.

Q So he left the Oregon Forest in '77 and his work was in 1978 in the Ozark National Forest?

A No, sir. He left the Forest Service in Oregon in 1978.

Q How many months did he work for the Forest Service in Oregon in 1978?

A I believe the season started June -- June the 2nd of each year. I am not positive on that date, though.

Q When did the season end, ma'am?

A March. The end of March.

Q Now you talked about what he did as a hack and squirter, and I hope these questions aren't offensive to you, but you never saw him on the job, did you?

A No, sir.

Q And you don't know what chemicals he used except what you might have been told by the lawyers in this case, or maybe James, isn't that correct?

A I know what I was told, yes, sir.

Q And what you tell us today is what you're told, not what you actually know from your own personal information, isn't that fair, ma'am?

A That's what Jim told me.

Q Now, how many months of the year, ma'am, do you think Jim did hack and squirt work in 1976?

A 1976?

Q Yes, ma'am.

A I'd say close to three months.

Q And how about in 1977?

A The same. It was three to four months each season, hack and squirting.

Q Well, when you say it's three to four months hack and squirting, you are really estimating, aren't you, because --

A That -- sorry.

Q -- jobs changed, didn't they, from week to week, depending on where people were needed at?

A I'm not sure I know what you mean.

Q Well, ma'am, do you know for a fact that he did three -- are you sure as you sit here now that he did three months of hack and squirt in 1976?

A I couldn't say exactly to the day, but approximately three to four months each season was hack and squirt time.

Q So are you saying that more than half of his job was hack and squirt?

A No, sir, three to four months. It was nine months for the job.

Q In the Ozark National Forest is it your testimony that he did hack and squirt there too?

A No, sir.

Q Did he do hack and squirt in 1978 at the Ozark National Forest?

A No, sir.

Q So he only did it in Oregon, isn't that correct?

A That's correct.

Q When did you move, again, to Arkansas, ma'am?

A March of 1978, the end.

Q Now, ma'am, you talked about coming home with his pants soaking wet.

A Yes, sir.

Q And did he come home like that all the time?

A When he was doing hack and squirting, every day.

Q Soaking wet?

A Soaking wet.

Q Did he complain to you?

A Yes, he complained.

Q Did he complain to you very regularly that he didn't like it?

A No.

Q But he complained to you?

A Occasionally.

Q Isn't it fair to say, ma'am, that as you sit here now when I took your deposition you never recalled his pants being wet, and as a matter of fact, you said he never complained, he loved his job at the Forest Service?

A He did love his job at the Forest Service.

Q And he never complained, did he, really?

A Maybe not about the Forest Service individually, no.

Q But he never complained anything about his job to you?

A Yes, sir, he did occasionally.

Q Remember me asking you these questions? I know it's difficult at your deposition. Do you remember him telling you he didn't --

THE COURT: What is the page?

MR. ORTEGO: Oh, I am sorry, Judge. 47, Lines 1 through 11.

(Mr. Ortego continuing:)

Q "Do you remember him telling you he didn't like his job at the Forest Service?"

A No, sir.

Q "Uh-huh." I am giving your answers. "No."

A Oh, I'm sorry.

Q "So he never -- did he ever complain about it while he was in Arkansas or in Oregon?" "No." "So he was happy working in the Forest Service in the outdoors? He enjoyed it?" "Yes." "No complaints that you know of?" "Not that I know of."

Do you recall giving those questions and those answers, ma'am?

A Yes, I do, sir.

MR. ORTEGO: I have no other questions at this time, Your Honor.

MR. BALDWIN, SR.: A couple, Your Honor.

MR. ORTEGO: Let me get out of your way, Mr. Baldwin.

REDIRECT EXAMINATION

BY MR. BALDWIN, SR.:

Q Mrs. Greenhill, who are Mr. Greenhill's parents?

A James Greenhill, Sr. and Betty Hicks, H-i-c-k-s. Betty Hicks.

Q Are they living?

A His father lives in Florence, Alabama, and his mother lives in Flippin, Arkansas.

MR. ORTEGO: Judge, I am going to object that this is beyond the scope of direct or cross. It is a new area.

THE COURT: I will overrule the objection.

(Mr. Baldwin, Sr. continuing:)

Q Mrs. Greenhill, did he stay in touch with his parents?

A Yes, I do.

Q Now you testified about his earnings being $6.12 an hour this morning?

A Yes, sir.

Q Is that a result of you having checked your records when you got back after your deposition?

A Yes, sir.

Q And you testified in Arkansas he made a high of $8,366, and a low of $7,930 a year?

A Yes, sir.

Q Is that a result also of you checking the records?

A Yes, sir.

Q Now do you recall the question Mr. Ortego asked you when he said the doctor told you it was Hodgkin's disease?

A Yes, sir.

Q Can you tell us what the doctor told you was the cause of his problem?

A The doctor told me the cause of --

MR. ORTEGO: I am going to object, Your Honor, as to hearsay, what the doctor told him.

MR. BALDWIN, SR.: Your Honor, he has opened the door.

MR. ORTEGO: I can't open the door to hearsay, Mr.

Baldwin.

THE COURT: I am going to overrule the objection in view of the answer to the question that was asked on cross-examination. Go ahead.

(Mr. Baldwin, Sr. continuing:)

Q What did the doctor tell you was the cause of this man's problem?

A The doctor told me that the death of my husband was caused by cancer which was in direct con -- which resulted from handling the chemicals.

MR. ORTEGO: Judge, I am going to object and ask that it be striken. There is nowhere in the record of that, and it's hearsay of a medical opinion that doesn't even exist in the medical records. I ask that this answer be striken.

THE COURT: Take the Jury out.

(Jury out at 1:39 p.m.; open court continues:)

THE COURT: I understand, Mr. Ortego, you say that that does not appear in the medical records that that conversation took place between the doctor and --

MR. ORTEGO: It does not, Your Honor.

THE COURT: -- and the Plaintiff?

MR. ORTEGO: It's Dr. Fecher, and nowhere in his records does it indicate that his Hodgkin's disease was caused by exposure to our product.

MR. BALDWIN, SR.: He has never deposed Dr. Fecher.

MR. ORTEGO: I am looking at his records. I have never deposed Dr. Fecher, but it's not in the medical records as the treating physician. And having a lay person, Mr. Baldwin, render an opinion on the ultimate issue of fact that's not supported, I think it's terrible hearsay.

MR. BALDWIN, SR.: Well, Your Honor, may I just say this? He asked her the question.

MR. ORTEGO: Well, no, I asked her the question if he had Hodgkin's disease because you asked her about the cancer. I didn't ask what caused it, and I think it is highly prejudicial, especially when the man is not going to testify --

MR. BALDWIN, SR.: May I finish?

MR. ORTEGO: -- and he signed an Affidavit in other litigations and never gave or rendered a causation opinion. He said "the man had Hodgkin's disease."

THE COURT: I am not going to allow the testimony of what this doctor told this Plaintiff. I think it would be hearsay, and I don't think it's in the record at this point on that one issue. Now, some questions were asked today about Hodgkin's disease earlier, but I don't believe there is any testimony that would allow -- anything that would allow the testimony of a treating physician to state --

or for this woman to testify, this lady to testify, as to what a physician told her was the cause of her husband's injuries. And I am going to sustain the objection and instruct the Jury not to consider that for any purpose.

MR. BALDWIN, SR.: Your Honor, let me just make this observation. Ordinarily, I would not offer that, although I think it's admissible as an exception to the Hearsay Rule.

MR. ORTEGO: What is the exception?

MR. BALDWIN, SR.: Mr. Ortego, may --

THE COURT: Let him finish, Mr. Ortego.

MR. BALDWIN, SR.: -- I make an objection without you interrupting me?

MR. ORTEGO: I apologize.

THE COURT: Let Mr. Baldwin finish.

MR. BALDWIN, SR.: On cross-examination he asked this witness if it isn't true that the doctor told you that your husband had Hodgkin's disease? And I wrote it down and it's in this record, and we can go back and find it, if it's necessary. And there is nothing clearer in the law than that if a part of a transaction is opened up, then the other side is entitled to show the entire transaction.

Now, he opened the door by asking that question, and the only question I had to her is "What did the doctor tell you was the cause of this man's death?"

MR. ORTEGO: I think --

MR. BALDWIN, SR.: And I think that in view of the fact that he has opened up the door to that, now it leaves me looking -- the Jury only getting part of the transaction.

MR. ORTEGO: Well --

MR. BALDWIN, SR.: And it makes the Jury believe that he died of Hodgkin's disease, which is a hotly contested issue in this case. And I think it would be unfair not to let us show the rest of what took place.

MR. ORTEGO: I think the whole conversation is hearsay, Your Honor. The problem I have is Dr. Fecher signed an Affidavit, which Mr. Baldwin submitted to the Court, in which Dr. Fecher said he had Hodgkin's disease.

MR. BALDWIN, SR.: Well, if you want to offer that, he can offer it.

MR. ORTEGO: I can't offer an Affidavit because it's hearsay.

MR. BALDWIN, SR.: That goes to the weight.

MR. ORTEGO: I think at this time Mr. Baldwin asking an ultimate issue of fact, the ultimate thing -- one single issue in this case: what caused the guy's cancer? And hearsay from a layperson witness is outrageous, and I ask that it be striken. And you won't look bad in front of the Jury because it's hearsay.

THE COURT: I am not going to allow that question.

MR. BALDWIN, SR.: Well, then may I -- I would move that you instruct the Jury not to consider the question he asked her about the doctor telling her he died of Hodgkin's disease, also.

THE COURT: I don't have in my -- I am not saying that that's not in the record. But I don't have down here, and I try to keep pretty good notes, I don't have down here that that question was asked.

MR. BALDWIN, SR.: Well, I know it was asked because I would not have asked this question had it not been, and I made a record of it. And Mr. Ortego knows it was asked.

MR. ORTEGO: I think the question I asked --

MR. BALDWIN, SR.: Now we can ask the witness if the question was asked.

MR. ORTEGO: I will go through my notes.

MR. BALDWIN, SR.: And I can't believe he'd sit here now and represent to the Court that he didn't ask that question.

MR. ORGEGO: Then why didn't you object? But that's not the issue. I don't think I asked the question the way you phrased it.

MR. BALDWIN, SR.: I don't have to object. I think I have the choice --

MR. ORTEGO: Yes, you do.

THE COURT: Well, just a minute. Let's just --

MR. BALDWIN, SR.: I think I should have the choice of either objecting or going into the entire transaction, and I chose that choice.

THE COURT: I want to hear the testimony that Mr. Ortego asked this witness, before we go any further, on this one issue, the question that was asked of the Plaintiff by Mr. Ortego as to what the doctor told her about her husband's death, and whether or not he died of Hodgkin's disease.

We are going to stand in recess until this is located.

(Recess at 1:39 p.m., until 1:43 p.m.; open court, jury not present)

THE COURT: Now what was the question you asked, Mr. Baldwin?

MR. BALDWIN, SR.: My question was that -- I asked the witness to tell the Jury what the doctor said was the cause of this man's problem.

THE COURT: All right. (to reporter) Play back what is on the testimony this morning, please. Go back two or three questions before it, and pick it up in context.

(At this time the following proceedings were played back, excerpted from cross-examination by Mr. Ortego:)

"Q But before he even went in 1978 he had severe back pain, as you stated in your deposition, didn't he?

"A What I meant in that deposition was from the accident, sir.

"Q But when I asked --

"A That was what we were talking about at the time.

"Q When I asked you the question, ma'am -- let's see if I'll ask the question again, maybe we will see again. It says --

"A Obviously he had back pain before he went to Dr. Teeter, because that is why the Forest Service sent him to Dr. Teeter because of his back pain. But he didn't have back pain relating to anything else but the accident.

"Q Isn't it, ma'am, isn't it fair to say that the Forest Service didn't send him to Dr. Teeter? He went on his own. You found Dr. Teeter in a phone book and that's why you went, because he had severe back pain way before the Forest Service accident?

"A No, sir.

"Q Let me ask you -- I remember asking you this question: "'What doctor did he go see?'" This is Page 52. "'The first doctor, yes, was Dr. Teeter,'" was your answer. "'How did he go to Dr. Teeter? How did he find him?'" "'In the phone book.'" "'And how long did he complain about back pains before he went to see Dr. Teeter?'"

"'I don't remember how long. It seemed like quite a while.'" "'But it was bad before and it was getting worse?'" "'Oh, yeah, definitely.'" I'll move on. When is the first time that your husband found out that he had Hodgkin's disease?

"A After the biopsy.

"Q And that was when Dr. Cole said that he had Hodgkin's disease?

"A I don't remember which doctor it was, but it was in St. Mary's.

"Q Now Mr. Greenhill you say was very healthy before he started working in the Forest Service. He didn't go for regular physicals, did he?

"A Not that I know of.

"Q As a matter of fact, he rarely saw doctors or rarely had tests before the back pain in 1978, isn't that correct?

"A He didn't have any need to see doctors.

"Q So up until the time where he started getting severe back pains in 1978 he really didn't see any doctors, did he?

"A I don't know.

"Q Do you remember him seeing any doctors as you sit here now?

"A Not that I remember.

"Q Now, ma'am, you said that he joined the Forest Service even though it was less money because he loved the outdoors,

was that your testimony?

"A Yes, sir."

(Playback of testimony concluded.)

THE COURT: I will overrule the objection. Bring the Jury back in.

MR. ORTEGO: Judge, just for the record, it's -- the ultimate -- I still think it's hearsay to allow a question from a layperson on the ultimate cause of the injury. If you want to strike any testimony or any hearsay, I have no problem with that. But when you let a layperson give hearsay on the ultimate --

THE COURT: I am allowing it because you opened it up on your examination.

MR. ORTEGO: Judge, I don't mind as to the Hodgkin's question, but Your Honor is going to let the part in the doctor told her it was caused by the Tordon? That's going to stay in? That's the part that I am concerned about. We can play that part. Her next response is: "the doctor told me it was caused by the Tordon 101." And that's what I want striken, nothing else. If she wants to say the doctor told her to was cancer or whatever, but the Tordon 101, that's the part that hasn't been played and I think --

THE COURT: I am going to let her testify as to what the doctor told her about her husband's condition.

MR. BALDWIN, SR.: May I, because of the confusion, may I ask that question again, Your Honor?

THE COURT: Yes. Bring the Jury in, please.

(Jury in at 2:03 p.m.; open court, all parties present)

MR. BALDWIN, SR.: Shall I proceed?

THE COURT: You may proceed.

REDIRECT EXAMINATION CONTINUES

BY MR. BALDWIN, SR.:

Q Mrs. Greenhill, would you tell us what the doctor told you about your husband's condition?

A When they found out he had cancer?

Q Yes.

A Dr. Kolb told Jim that he had cancer, and it was caused from the use of Tordon 101.

Q Now, did Mr. Greenhill keep a diary?

A Yes, sir.

Q And I hand you Plaintiff's Exhibit -- see if you can read it --

A 33.

Q -- 33 and ask you if you would examine that? Do you recognize the handwriting on that document?

A Yes, sir.

Q Is that the handwriting of Mr. Greenhill?

A Yes, sir.

Q Your husband?

A Yes, sir.

Q What is that?

A It's a day-to-day diary on how he felt from the time November the 19th, 1979 when he started treatments.

Q And did he keep it from day to day?

A Yes, sir.

Q And make the entries at or near the time that were shown there on the document?

A Yes, sir.

Q Is that something you found just very recently?

A Just shortly, yes.

MR. BALDWIN, SR.: Your Honor, we offer that into evidence.

MR. ORTEGO: Judge, I am going to object. This is the first time I have ever seen this document. It wasn't produced at Mr. Greenhill's deposition; it was not produced in response to my discovery requests. I asked Mrs. Greenhill if she had any such documents at her deposition she would produce it to me. And, secondly, it is just duplicative, and it talks about his pain and suffering in his diary. This is the first time I have ever seen it. I have been asking if any such documents exist, and I think it is duplicative.

THE COURT: I sustain the objection.

MR. BALDWIN, SR.: Just for the record --

THE COURT: Was this exhibit made a part of the Pre-Trial Order?

MR. BALDWIN, SR.: No, it wasn't, Your Honor, because it wasn't found until very recently, this week, as a matter of fact. I gave Mr. Ortego a copy of it.

THE COURT: I am going to sustain the objection.

MR. BADLWIN, SR.: That's all we have. Judge, may we offer that for purposes of appeal?

THE COURT: Yes.

RECROSS EXAMINATION

BY MR. ORTEGO:

Q Just two quick questions. Mrs. Greenhill, you mentioned what the doctor told you. Were you with Mr. -- your husband at all his sessions when he went to the doctor?

A Most of them, yes, sir.

Q You are aware also that Dr. Kolb never in his medical records said our product caused it? And are you also aware that Affidavits were signed and he never put in those Affidavits that our product caused your husband's illness? Are you aware of that, ma'am?

A I haven't seen any affidavits to say that.

THE COURT: Anything else?

MR. ORTEGO: No, Your Honor.

THE COURT: You may be seated.

THE WITNESS: Thank you.

THE COURT: Call your next witness.

MR. BALDWIN, SR.: Your Honor, may I approach the bench?

THE COURT: Yes.

(At the bench, off the record discussion, out of the hearing presence of the jury, with Mr. Ortego and Mr. Baldwin, Sr.)

(Open court)

MR. BALDWIN, SR.: May we proceed?

THE COURT: Yes, I am ready whenever you are.

MR. BALDWIN, SR.: Your Honor, before we begin, may we explain to the Jury what this is?

THE COURT: Yes.

MR. BALDWIN, SR.: This is the deposition of Mr. Greenhill which was taken pursuant to the rules of the court, both sides being present with the opportunity to ask questions, and it was taken of Mr. Greenhill under oath during his lifetime.

MR. ORTEGO: Your Honor, just for the record, the direct examination was conducted by Mr. Miller, an attorney in Mr. Baldwin's office, not by us.

MR. BALDWIN, SR.: That's correct.

(Videotaped deposition of James E. Greenhill; jury and all parties viewing:)

JAMES E. GREENHILL (BY VIDEOTAPE DEPOSITION)

DIRECT EXAMINATION

"Q Mr. Greenhill, would you please state your name for the record?

"A James E. Greenhill.

"Q All right, Mr. Greenhill, you are the same James E. Greenhill who is a plaintiff in a suit that has been filed in Federal District Court in the Eastern District of Texas, Marshall Division, which has been styled: Allen Peteet vs. Dow Chemical Company?

"A Yes, I am.

"Q Tell the jury where you live, Mr. Greenhill.

"A I live in Ozark, Arkansas.

"Q For those of us who are not too familiar with Arkansas geography, where is that?

"A It's about 60 miles east of Fort Smith.

"Q That's in the northern part of the state?

"A Yes, sir.

"Q All right. How old a man are you, Mr. Greenhill?

"A I'm thirty-seven.

"Q And where were you born?

"A I was born in Cleveland, Ohio.

"Q Where did you grow up, so to speak?

"A I grew up between California and Ohio. I was in Ohio until I was about seven or eight, and then I moved to

California.

"Q Did you have a healthy childhood?

"A Yes, normal childhood.

"Q Nothing outside of mumps or measles, other than I think you mentioned you had pneumonia back when you were five or six?

"A Yes, sir.

"Q Did you recover from that fully?

"A Yes, I did.

"Q Has it ever given you any trouble?

"A No, sir.

"Q Are you a married man, sir?

"A Yes, I am.

"Q What is your current wife's name?

"A Ann Irene Greenhill.

"Q Is that your only marriage?

"A I was married previously.

"Q All right, what was your first wife's name?

"A My first wife was Sandra Patricia Greenhill.

"Q All right, and were you divorced from your first wife?

"A Yes, I was.

"Q When was that, roughly?

"A In the early '70s.

"Q Do you have any children?

"A Yes, I do.

"Q All right, tell us about your children. I guess starting from the oldest to the youngest giving their ages.

"A The oldest is my stepdaughter, Michelle. She is nineteen.

"Q Does she live at home with you and your wife?

"A No, she doesn't. She lives in Clarksville, Arkansas.

"Q Is she married?

"A No, she is not.

"Q Did she grow up in your home?

"A Yes, she did.

"Q Even though she is your stepdaughter, do you consider her your daughter?

"A Very much so.

"Q Go ahead. What is the next child?

"A The next child would be my son, Jimmy, and he is my son from my first marriage. He is seventeen now; he will be eighteen next month.

"Q I guess he still lives at home?

"A He lives at home, yes.

"Q What is the final child?

"A The final one is Soren Christian Louvring. He is my stepson; he is thirteen years old, and he has lived with me since he was three.

"Q Okay. And he, I take it, is the oldest girl's brother?

"A Yes, he is.

"Q And do you likewise consider him to be your son?

"A Yes, I do.

"Q Are all of your children healthy for their age?

"A All of my children are in good health.

"Q What about brothers and sisters? Do you have any brothers and sisters?

"A I have two sisters, and they are both in good health.

"Q What about your parents? Are they still living?

"A My parents are still living, and have no health problems.

"Q How old are they?

"A In their 50s.

"Q And you say they have no health problems out of the ordinary for someone that age?

"A Not that I am aware of, no.

"Q What about your educational background, Mr. Greenhill? How far did you go in school?

"A I completed 9th grade.

"Q Okay. Without going into too much detail, just tell us why it was that you left school.

"A My parents were having family problems and they had split up. My father had some problems dealing with it, and he was drinking, and he moved and left the state. I had no choice but to go to work.

"Q What was the first job you held after you quit school?

"A The first job was in an upholstery -- furniture manufacturer.

"Q Okay. By this time were you in California?

"A I was in California at that time.

"Q Where in California?

"A I was living in Covina, California.

"Q I am no more familiar with --

"A It's in the Los Angeles area.

"Q Okay. You say it was an upholstering shop for a furniture maker?

"A It was a furniture manufacturer, and I was an upholsterer.

"Q Just give us a shorthand sketch of what your job duties were there.

"Q I put upholstery on the inside and backs of chairs and couches.

"Q If you can recall, what did you make at that job?

"A Around $1.25 an hour.

"Q How about your next job? What was it?

"A The next job was for a discount department store called Zodie's, a chain operation.

"Q Was this also in California?

"A This was in Covina, California. And again, it was around minimum wage. Probably about $1.35 an hour.

"Q What did you do for them? Just a sales clerk?

"A I began as a clerk, and later I worked as a cashier, and later I managed the snack bar.

"Q How long did your employment there with -- Zodie's, was that the name of it?

"A Zodie's was the name of it. It was probably a year, approximately.

"Q Where did you go after that job?

"A After that job I moved to Alabama and got married, and I went to work for a short period -- about two weeks -- pumping diesel at a truck stop.

"Q May I ask, why did you move to Alabama?

"A I moved to Alabama to be closer to my family core. My father was now in Alabama, and all my relatives were there.

"MS. MINTZER: Could I get a time frame on this, please?

"MR. MILLER: As to how long this will last?

"MR. MINTZER: No, no, where we are in time.

"Q Mr. Greenhill, Ms. Mintzer pointed out that it may become important as to what year this was?

"A It was the early 60s, probably mid-sixties, when I moved to Alabama.

"Q All right. Can you get it any closer for us than that?

"A Uh, '66, I would guess.

"Q All right. I understand that that has been a long time, and that is just your best estimate.

"A Yes.

"Q When you moved to Alabama what kind of line of work did you follow?

"A I worked for approximately two weeks pumping gas, or diesel, and then I went to work for K-Mart stores.

"Q I take it the diesel pumping job was just a job until you found a better one?

"A Yes, indeed.

"MS. MINTZER: Objection.

"Q At any rate, what did you do after you pumped gas?

"A After I pumped gas I went to work for K-Mart as a sales clerk. And within about six months I was managing the camera department.

"Q And that was in Alabama again?

"A This was in Florence, Alabama.

"Q How long did you stay with K-Mart there in Florence?

"A I was with K-Mart a year and a half to two years, and then I transferred to a K-Mart in California.

"Q Okay, you remained employed by the K-Mart people?

"A Yes.

"Q Why was it that you were transferred?

"A If you transfer with the company you automatically got a raise, and it was also considered in your best interest

because it showed that you were interested in advancing with the company.

"Q Had you intended to go ahead and advance with that company?

"A Yes, I did.

"Q You moved from Alabama to where, again?

"A Santa Ana, California was the first store that I transferred to.

"Q From your last answer I gather you transferred more than once?

"A I transferred a number of times. From Santa Ana I went to Montclair, California, with K-Mart again, with the camera department. From there I went to Thousand Oaks, California and managed the jewelry department, and later the camera department. And from there I moved to Medford, Oregon to that K-Mart store and managed the camera and jewelry departments. And that was in the early 70s -- '71, '72.

"Q And was that your last assignment with K-Mart?

"A That was my last assignment with K-Mart.

"Q Let me just ask you this, without going into a great deal of detail, what work did you do at each of those jobs?

"A Primarily I merchandised camera and jewelry department -- sold and merchandised the departments.

"Q And you were the manager of those departments?

"A Yes, I was.

"Q How much were you making, if you can recall, during this period with K-Mart?

"A At the end I was making approximately $800.00 a month.

"Q And so we will have this in time frame, as best you can recall, what period of years was it that you were moving up in the K-Mart organization?

"A Probably until 1973, from the mid-sixties when I started in Florence.

"Q I believe earlier you mentioned that Medford, Oregon was your final stop there?

"A Yes.

"Q I take it you and K-Mart parted company?

"A Yeah. I left K-Mart in Medford, Oregon because the only chance that I had with the company of furthering myself was to become a district manager. This position I did not want at the time because it would take me away from my family all but a couple of days a month.

"Q All right, you mentioned your family. You mentioned that you were married when you first went with K-Mart?

"A Yes.

"Q Had your son been born by this time?

"A Yes, he was.

"Q Roughly, how old was he, if you can recall?

"A He was about five years old.

"Q You didn't want to be away from home a month during this time period?

"A That is correct.

"Q Where did you go after the K-Mart job?

"A After K-Mart I went to work for the laborers union, also out of Medford, Oregon.

"Q How long did that last?

"A There were a number of different jobs that I went out on with the laborers' union, and it was probably under a year's time that I worked there.

"Q What -- and I don't want you to go into each job you had, even if you can remember them, but what type of jobs were these?

"A Mainly labor jobs -- going to get items for carpenters and the professional tradesmen.

"Q I believe you stated that you stayed there roughly a year?

"A Approximately.

"Q Where did you go after that?

"A I took a construction job just as something that was lucrative. I later found a job in approximately a year. I went to work for a company called Buy-Mart, again, a discount department store chain.

"Q Back in the previous line of work that you followed?

"A Yes, it was. I was in camera-jewelry.

"Q Is that what you did for Buy-Mart?

"A Yes, I did -- camera, jewelry, records management.

"Q How long did you stay at work with Buy-Mart, is it?

"A Buy-Mart. I worked there for two to three years.

"Q And what location was this?

"A That was in Ashland, Oregon.

"Q At the end of that three years what was your next job? It's been a long time -- just tell us as best you can recall.

"A From Buy-Mart -- yes, I went to work for Al-Bea-Co Paint Company.

"Q Okay.

"A I was a route salesman. My job primarily consisted of servicing customers. I went out, I sold hardware and paint items and delivered them.

"Q You had a certain route or territory, I take it?

"A Yes, I did.

"Q What were you making at that job?

"A Five hundred a month, plus commission.

"Q What was your commission?

"A I never made a commission while I worked for the company.

"Q How long did you work for them?

"A Not long. Five months, I believe.

"Q Where did you go after that?

"A After that I went to a lumber company as a salesman, called Copeland Lumber, in Medford, Oregon.

"Q How long were you at that job?

"A Several months; under a year. I'm not sure.

"Q What was your next job?

"A My next job was with the Forest Service.

"Q Let me just stop there and ask a question, encompassing all of the jobs that you had had up to this date, I guess, all the way back from the upholstery shop on to the -- was it a lumber company there at the end?

"A Yes, sir.

"Q During the course of any of these jobs did you work with herbicides of any kind?

"A Except for the Forest Service, no.

"Q Well, I am talking about up until the Forest Service job?

"A No, I did not.

"Q What about pesticides?

"A No, I did not. No, I have never used any chemicals.

"Q Do you know of anything that you did at any of those jobs, or anything that you might have been exposed to, which would endanger your health?

"MS. MINTZER: Objection.

"MR. MILLER: What is your objection?

"MS. MINTZER: He is not competent to know that.

"Q Anything that you know of that endangered your health?

"A Nothing that I am aware of.

"Q I believe you stated that the next job you went to was the U. S. Forest Service?

"A Yes, sir.

"Q Why did you make that change?

"A I've always been an outdoors' person and into back-packing, hiking and what-not. I was involved in conservation efforts, and the Forest Service seemed to be a likely place for me to find a job that was suitable. It also was about a block from my house.

"Q When you were hired by the Forest Service what kind of work did they have you doing?

"A I went to work with the Forest Service as a fire fighter during fire season, at which time I was on a tanker, a water tanker truck, shuttling water, basically, to fires. During the off-season I would work in any number of different types of jobs, including timber stand improvement, which would be either planting trees or defoliating trees with poison.

"MS. MINTZER: Objection to the characterization.

"Q Let me back up. You mentioned the fire fighting and the fire season. What is the fire season?

"A The fire season in Oregon was a period with less than

normal rainfall, where the fire was at a higher than normal risk.

"Q I take it that the other jobs took a back seat to that -- were done when they could be done?

"A Right. Exactly.

"Q Was this, by the way, a full-time job you had with the Forest Service?

"A I was on a temporary appointment. I could work nine months out of the year. My appointment started June 2 and ran until I used up nine months.

"Q All right, and then you would take how long off?

"A Three months.

"Q Then what would you do after that?

"A I'd be called back.

"Q For how long?

"A For nine months.

"Q For the record, where was this? Somewhere in Oregon, I believe you said, but could you be more specific?

"A Yes, it was outside of Medford. Medford, Oregon was the main office I worked out of, but I worked in the Applegate District, a forest just outside of Jacksonville, Oregon.

"Q Does that forest have a name?

"A Yes, it is the Rogue River National Forest.

"Q The Applegate Division?

"A Yes.

"Q Go ahead.

"A I'm sorry. It was called the Star Ranger District.

"Q If we wanted to talk to somebody with the Forest Service, that's how they would know it?

"A They would know it by either of those.

"Q Okay. What time frame was this, also? When was it that you went to work for the fire service, Forest Service, as best you can recall?

"A I went to work for the Forest Service in about -- I think it was about '76, as near as I can remember.

"Q During the period that you were there in Oregon, how long were you there, total?

"Ms. MINTZER: I'm sorry, I --

"Q How long were you there in Oregon with the Forest Service?

"A To the best of my recollection, it was two or three years.

"Q When you say a year, I take it you mean nine months on and three months off?

"A Yes, seasons.

"Q During the course of your employment there in the Rogue River National Forest, Star Ranger or Applegate Division, whatever it is known by, did you have occasion to apply herbicides to plants?

"A Yes, I did.

"Q What do you understand a herbicide to be, just for the benefit of the jurors who may not be familiar with that term?

"A A herbicide is a chemical defoliate that kills the tree.

"Q Okay.

"MS. MINTZER: Objection.

"Q I normally don't think of the Forest Service as killing trees. Why were they killing trees?

"A In Oregon hardwood tress don't grow as rapidly as Douglas fir trees. And the Douglas fir tree is the primary product that the U. S. Forest Service puts out in Oregon, and therefore we kill most deciduous trees in favor of the Douglas fir so that they could take a stronger hold.

"Q What is a deciduous tree?

"A A leaf-bearing tree.

"Q As opposed to an evergreen or pine type tree?

"A Yes.

"Q How was this accomplished?

"A We would take a hand ax and chop around the tree approximately an inch and a half or two inches apart, and squirt in the herbicide into the gashes that we made in the tree.

"Q Did you all have a shorthand way of referring to this

operation?

"A Yes, it was referred to as "hack and squirt."

"Q Okay. I realize that this has been some time ago, but as best you can recall, how long a period of time did you do this?

"A Approximately three to four months, to the best of my recollection.

"Q Was that during one year, or spread out over several years?

"A I did it for approximately three or four months in one year. There were other times that I may have used chemicals on an occasional basis.

"Q But you did it fairly steadily for that three or four month period?

"A Yes.

"Q Tell us the facts about it.

"A For approximately three or four months I used herbicides on a daily basis.

"Q When you say "daily," is that five days a week?

"A It was five days a week, unless I was called to a fire.

"Q Whose decision was it that a certain area would be treated with this hack and squirt treatment?

"A That would have been up to the forester.

"Q Somebody above you, at any rate?

"A Yes.

"Q Okay. Once that decision was made and word got passed to your level, what would be the procedure, say, when you reported to work in the morning?

"A When we reported to work in the morning, the crew boss would take us down to the warehouse. We would load up the herbicides.

"Q Okay, let me stop you there and ask you a few questions about that.

"A Yes.

"Q Describe the warehouse for us.

"Q The warehouse was a garage-like building with a sliding door on it, cement floors, with herbicides stored inside in barrels.

"Q Do you know by any kind of name or description of the type of herbicide you used?

"A Yes. Tordon 101 I used approximately 98 or 99 percent of the time.

"Q What kind of containers did this Tordon -- and for the benefit of the court reporter, would you spell that for us? If you know how.

"A I will make an attempt at it. It was T-o-r-r-e-d-o-n 101.

"Q Tordon? (correct spelling)

"A Tordon.

"Q Okay. What kind of container did the Tordon 101 come

in?

"A Large barrels, 50 gallon barrels.

"Q Just a barrel, a metal barrel?

"A Yes, sir.

"Q Would you have occasion to put it into a smaller container at any time?

"A Yes. We would put it into a five-gallon container, and most often load one or two of those, along with our other equipment, into the vehicle.

"Q Let me back up to that barrel. Could you physically describe the barrel beyond just being a metal barrel? Did it have anything written on it?

"A To the best of my recollection, it was white 55 gallon drum with "Tordon 101" on the label, "Dow Chemical Company" towards the top.

"Q Did you see any warnings of any kind on this barrel?

"A Not to my recollection, other than possibly a skull and crossbones.

"Q Did you see anything that was designed to call your attention as to how it should be used, or caution you not to use it in a certain way?

"A No.

"Q I believe I interrupted you when you stated that it was common practice to load the chemical from these barrels into a five gallon container?

"MS. MINTZER: Objection.

"Q What would you do with it when you got it out of the barrel?

"A It would normally be put into small containers and loaded into the back of a stationwagon type vehicle that we drove out to the job site.

"Q How many of you would ride out there in that vehicle?

"A Oh, five or six.

"Q Let me ask you a little bit about that vehilce. You described it as a stationwagon type vehicle?

"A Yes. I believe it was called a carry-all. It was about a nine passenger stationwagon, similar to a Bronco.

"Q Was it enclosed?

"A Yes, it was.

"Q Where would you carry the Tordon 101 in the smaller containers in that vehicle?

"A Directly behind the rear seat.

"Q Well, that could mean in a trunk. Is it a trunk-like enclosure?

"A No, it's not, it's open like a stationwagon.

"Q And where would the people sit?

"A The people would sit in the two seats ahead of it.

"Q Did the Tordon 101 have an odor?

"MS. MINTZER: Objection, Counsel, he has referred to other herbicides, too.

"Q Okay, Mr. Greenhill, how often would you use Tordon 101 as opposed to others?

"A Ninety-eight (98) to 99 percent of the time.

"Q All right. I want you to, for the moment, ignore that other 1 percent for me. The Tordon 101, do you recall if it had an odor?

"A Yes, it did.

"Q Okay. With regard to that odor, describe it for us if you could.

"A It was a rather strong, pervasive odor that couldn't be missed.

"Q Okay. Could you smell it when you went into that warehouse or storage room?

"A I can't recall.

"Q What about when you would load it from the barrels into the smaller containers?

"A Yes. Anytime we were transferring it from containers, it was --

"Q On the subject of transferring it from containers, how was that accomplished from the barrel to the smaller --

"A It was a pump on the top, a hand-operated pump on the top of the large barrel.

"Q After you put it in the enclosed carry-all or Bronco type vehicle you spoke of, could you smell the odor of the Tordon 101?

"MS. MINTZER: Objection.

"Q Go ahead and answer the question. That's for the court.

"A After we loaded the herbicide Tordon 101, we could smell the chemical, the herbicide, in the car.

"MS. MINTZER: Objection again. The witness has testified that he put other chemicals in there, too.

"Q Let me clear that up, Mr. Greenhill. The other chemicals that you from time to time worked with, did they also have an odor?

"A I don't recall any odor, and that's all I can say. I don't really recall any odor of other chemicals.

"Q Do you specifically recall, as you sit here today, what that car would smell like when you had Tordon 101, not any other herbicide, in the back of it?

"MS. MINTZER: Objection. He hasn't testified that he only had one herbicide there, ever.

"Q All right, did you ever have Tordon 101 alone in the back of that vehicle?

"A I never had Tordon 101 in the vehicle with any other chemical.

"Q Okay. Now tell us what that car smelled like.

"A The car smelled like Tordon 101.

"Q How would you characterize the odor?

"A It was pungent and it was strong. You couldn't get

away from it.

"Q What time of year was this, generally?

"A It was in the fall of the year.

"Q Would the windows on the car be rolled up or rolled down?

"A On the way to the sites they would normally be rolled up because the temperatures were falling at that time. And on the return they would be rolled up.

"Q Okay. Where were these locations where you would spray this chemical located in relationship to this warehouse?

"A Oh, anywhere from 12 to 30 miles from the warehouse.

"Q What kind of roads connected the two sites?

"A There was approximately five miles of pavement, and the rest of it were dirt, mountain roads.

"Q How long would it take to get from your storage room to the site where you would apply the herbicide?

"A On the average, 30 to 45 minutes.

"Q Would that odor of the herbicide, and I am only speaking of Tordon 101 at this point, go away at anytime during that trip?

"A No.

"Q Would you smell it the whole way?

"A Yes.

"Q Would you breathe those fumes in?

"MS. MINTZER: Objection.

"A I suppose I would have to breathe the fumes in, being in a closed vehicle, yes.

"Q And after the 30 to 45 minute ride to the site where the herbicide was sprayed, what would happen next in this hack and squirt operation?

"A When we got to the location we would fill one quart spray bottles, the type that you see at gas stations for cleaning windows, etcetera.

"Q Were these glass bottles or plastic?

"A They were plastic bottles, and you unscrewed the sprayer out of the top of them, poured the Tordon in, and put the little top back on.

"Q Something similar to a Windex bottle?

"A Yes.

"Q How would you transfer the chemical, and again I only speak of Tordon 101 at this point, from those five gallon containers into the one quart squirt jugs?

"A Pour it in.

"Q All right. Was this accomplished -- describe it for us.

"A We would pour in the chemical into the bottle.

"Q Would you hold the bottle, or was it sitting on a tray, or what?

"A I think that varied with the individual. Whatever was

easiest to accomplish the task, I suppose. We transferred it from one container to another as simply as possible.

"Q Okay. Did you have a funnel for this operation?

"A Yes.

"Q Did you wear any kind of protective clothing?

"A We wore gloves.

"Q Describe the gloves to the jury.

"A The gloves were similar to surgical gloves, the type you see a physician wear.

"Q I'm not sure if the jury is all going to be familiar with that. Describe them a little more fully for us.

"Q Very, very thin latex type gloves that you could see through.

"Q How high up on your arm would they come? We have video here, why don't you just tell us and gesture at the same time?

"A About three inches above my wrist.

"Q Would this plastic glove keep the Tordon off of your hands?

"A No, it would not.

"Q How could it get through that glove?

"A When you were walking through the forest carrying the container, or when you were using it, often you had your arm in a position that would allow the Tordon to run down

your arm. And when you dropped your arm to your side, the only way it could go was down in the glove.

"Q Okay. I take it from what you just said you used those gloves not only when you were transferring the chemical, but also during the hack and squirt operation itself?

"A At all times during the hack and squirt operation.

"Q Other than the clear, thin surgeon type gloves that you mentioned, did you wear any other protective clothing?

"A Not designed to protect us from the chemical. We did wear hard hats and safety shoes.

"Q Okay, that would be, of course, to protect your head and feet?

"A Certainly.

"Q Did you wear a mask or a respirator of any kind?

"A No.

"Q Did you wear a handkerchief over your face of any kind?

"A No.

"Q Just breathing like you're breathing now?

"A Yes.

"Q Describe -- after you loaded the Tordon 101 into the individual jugs, what would you do?

"A We would fan out across the area that we were going to

defoliate, and begin going through trying to hit every single tree that we wanted dead.

"Q What size were these leafy trees?

"A Anywhere from four inches in diameter to, maybe, ten or twelve inches.

"Q And once you found a tree of the type that you were looking for, what would you do?

"A We would place slashes with the hand ax around the tree at approximately an inch to an inch and a half intervals.

"Q When you say a hand ax, is that similar to what I call a hatchet?

"A A hatchet about this long, with a small head on it, a single bit.

"Q And you would dig down with that hatchet into the tree?

"A We would make a hack into the tree, and roll the hatchet somewhat, and then squirt the herbicide into the cut. One squeeze being the proper amount for each cut.

"Q Okay. Somebody told you that's what they decided they needed for each cut?

"A Yes.

"Q In an average tree, you say you'd make a cut every how often?

"A Approximately every two inches.

"Q It would be three or four cuts to a tree, probably?

"A Depending on its size, yes.

"Q When you would squirt this herbicide from a spray bottle on to the tree, would you get any of the herbicide on you?

"MS. MINTZER: Objection.

"MR. MILLER: Why the objection?

"MS. MINTZER: You are leading the witness.

"Q Okay, tell us what would happen when you applied the herbicide.

"A When using the herbicide, we would make the incision with the hand ax, we would squirt with the bottle. In passing from tree to tree, and sometimes in the squirting it would reflect back on to you. And walking from tree to tree, the squirt bottle, if you are familiar with the use of squirt bottles, they often drip. And it was normally consistent that I would come with my pant leg wet from the knee down, as would the other timber stand improvement personnel, from the dripping bottles.

"Q You say your pant leg. What kind of pants were you wearing?

"A I wore cotton work pants or a Levi, both about similar thickness.

"Q Just plain old work pants?

"A Yeah. It would be wet to the point that you would

be able to tell that it was wet from a distance, and primarily just on the outside of my leg. And it would penetrate to my leg and cause my leg to be wet.

"Q When you say leg, I take it -- or clarify that for us. Is that one leg or both legs?

"A Primarily -- well, entirely. My left leg below the knee.

"Q How would it be on your left leg but not on your right leg?

"A I was right-handed. I used the ax in my right and the squirt bottle in my left hand.

"Q How many hours a day would you all do this hack and squirt procedure?

"A Eight (8) to 12 hours.

"Q It was over a period, I think you said, of three to four months?

"A Yes, sir.

"Q About what time would you get out there in the morning, usually?

"A Well, we'd be out at 8:00 o'clock in the morning.

"Q How long would it take before your pant leg became wet?

"A By 9:00 o'clock in the morning.

"Q How wet would it be?

"A By nine it'd be damp. Before lunch it would be --

not wringing wet, but certainly wet to the touch and to the appearance.

"Q Okay, would it be wet enough that it would be wet on the inside as well as the outside?

"A If you are referring to the inside of the pant leg, yes.

"Q Okay. Yeah, that is what I was referring to. Would it get on your skin?

"A Yes.

"Q Describe for us, as best you can, the extent to which it would get on your skin, paying particular attention to where it would get on your skin.

"A Primarily, it would be on my left lower leg below the knee, and it would be wet.

"Q On the outside or the inside?

"A The outside.

"Q Just the outside, or primarily the outside?

"A Primarily the outside. It would wick around somewhat in the normal action of the material, but it was primarily on the outside.

"Q Would you break for lunch?

"A Yes, we did. We would break for lunch after approximately four hours, at which time they would give us a bar of soap and some water and tell us to wash up. That was about it.

"Q Did you do that before you ate your lunch?

"A We'd do it before we ate lunch, and at the end of each shift.

"Q Okay. When you say shift, does that mean a work day?

"A Yes.

"Q When you would wash your hands with that soap before you ate your lunch, did that get all of the Tordon off of your hands?

"A I don't know whether all of the Tordon was gone, but the smell was still there.

"Q How long a break would you take for lunch?

"A I believe we had 30 minutes.

"Q Okay. And after that you put the gloves back on and go back to work?

"A Yes.

"Q Doing the same thing in the afternoon, I take it?

"A Yes.

"Q What time would you break off then?

"A Generally around 4:00 o'clock. Some days it would be longer; it would depend on the job that we were working on.

"Q What would you do when you were all finished that day?

"A When we finished for the day we would take the chemicals back to the warehouse. We didn't pour them back

in the barrels. We most often just put the chemical that was left back into the building, along with the tools involved, went home, took a bath and got clean clothes on.

"Q And then you came back to the same thing the next day?

"A The next day, yes.

"Q Let me back up a little bit. I meant to ask this earlier. When you are hacking and squirting, if that's the proper way to phrase it, how long would that bottle last you? The quart size individual sprayer.

"A It would be difficult to determine that, because it would depend on the size of the trees that we were defoliating, and the amount of trees that were to be defoliated.

"Q Let me ask you this. During the course of a working day would you have to refill the little bottle?

"A On occasion -- on a number of occasions, depending on the area, again, we would carry quart canteens with the herbicide Tordon 101 inside, and we would refill our bottles in the field.

"Q Okay, so you wouldn't have to go back to the truck?

"A Yes.

"Q When you say canteen, what kind of --

"A It was a plastic container inside of a canvass bag

that we attached to our belt.

"Q Just like a canteen that you might drink out of?

"A Yes.

"Q All right. Now, let's get back in the sequence of where we were. I believe we had just come to the end of the work day, so to speak, and you would put the chemicals back in the truck?

"A Yes.

"Q All right, then I take it you would go where?

"A Back to the warehouse, and we would unload same and put them inside.

"Q Okay, and I guess if it takes 30 minutes to 45 minutes to get out there, it takes about the same to get back?

"A Yes.

"Q And once again, would this be in the same type Bronco?

"A It would be in the same vehicle, yes.

"Q Would the windows be up or down?

"A Normally they would be up, because of the temperatures.

"Q And once again, could you smell the Tordon 101 on the way back?

MS. MINTZER: Objection.

"A At anytime that I was in the vehicle on the way to

or from the job I could smell the herbicide Tordon 101.

"Q Did you breathe it in?

"MS. MINTZER: Objection.

"A Anytime that you were in the vehicle you had to breathe, and when you breathed you breathed in the Tordon 101.

"Q Was it a mild aroma, or was it a stronger?

"A It was pungent. It was strong and you couldn't get away from it. If you were prone to nausea at all it would nauseate some people at times.

"Q Once again -- I think this has been on the record, but how long did you do this hack and squirt on a regular, five-day a week basis?

"A Three to four months.

"Q And other than that, how often would you do it?

"A Just very occasionally.

"Q Which is?

"A Just as the need arised. Usually when there wasn't other work they might give you something like that.

"Q Now you mentioned that you believe you used Tordon 101 98 to 99 percent of the time. Correct me if I'm wrong about that.

"A Yes.

"Q What other chemicals do you have a memory of using, as you sit there today?

"A I believe that I used Silvex. But I didn't see Silvex written, I just heard the name mentioned.

"Q Do you remember how often you ever used it?

"A Very few times. I'd say under five.

"Q When you would come home in the afternoon, after doing the hack and squirt operation, what would you do?

"A When I returned to my home?

"Q Right.

"A When I returned to my home I would come in and take a bath and change clothes and have dinner.

"Q By the time you left the job site and driven back to the warehouse and driven home and got ready to change clothes and take your bath, would that left pants leg still be wet?

"A Oh, yes.

"MS. MINTZER: Objection.

"Q All right. I'm sorry, your answer my have been cut out by her objection. I was asking you about the status of your left pants leg when you got home and changed clothes, for the record.

"A When I got home from the job my pants leg was still wet, wet to the touch and to the appearance.

"Q Would you wear the same pair of trousers on more than one day?

"A No, not while we were doing hack and squirt.

"Q Who washed your pants?

"A My wife.

"Q What other type of work did you do while you were with the Forest Service there at the Rogue River National Forest?

"A I was primarily a fire fighter, with my duties being self-explanatory. I fought forest fires, although I would do other forestry work at times. General labor work, I suppose.

"Q I take it from what you said that fighting forest is a big concern of the Forest Service?

"A Yes, it is.

"Q Did you ever get hurt in the course of working there at the Rogue River National Park? Any kind of an on-the-job injury?

"A Yes, I did.

"Q Tell me a little bit about that.

"A I was injured at the Forest Service during my second season, and I was -- what we referred to as "busting weeds."

"Q I don't know what that is, and I would imagine that the folks on the jury may not know. Tell us about that.

"A Okay, busting weeds consisted of taking a long tool with a blade on the bottom and slashing it back and forth in order to cut down the weeds.

"Q Okay.

"A While I was doing that I pulled a muscle in my left shoulder, and I went to a doctor in Medford, Oregon, who diagnosed it as a strained muscle, and they gave me ultrasound treatments.

"Q How much time did you miss from your job as a result of this injury?

"A I don't believe I actually missed any full days of work, except to attend a physician.

"Q Just a trip to the doctor here and there?

"A Yes.

"Q Let me ask you that -- while I mentioned that on-the-job injury. Have you had any other significant on-the-job injuries in any other job that you have had up to this point?

"A No, I haven't.

"Q Was your health such that you were able to work regularly?

"A Yes, it was.

"Q And you say that this muscle pulled in your left shoulder?

"A Left shoulder, yes.

"Q That really didn't keep you from working other than a trip or two to the doctor?

"A Yes.

"Q Did you fill out an accident report with regard to that shoulder injury?

"A I filled out an accident report, but the accident report is contrary to what I just told you.

"Q All right.

"A The reason for this is that the ranger, and those higher up than myself, decided that it didn't look good for somebody to have a back injury on a government job while they were cutting down weeds, when their primary job was a fire fighter. So, it was decided by someone higher than me that my injury actually took place while making a diversionary channel in the river for fire fighting purposes.

"Q What got put down on the official accident report as --

"MS. MINTZER: I am going to object to that.

"Q What was put down on the form as the official cause of the accident?

"A The official cause was put down that I was lifting rocks in an effort to make the diversionary channel and injured my shoulder.

"Q Did you want to do this?

"A No, I didn't. I was told that -- my first objection was that it made me look like I didn't know how to lift weights. And they said no, that actually all I had to worry about was not rocking the boat, because people that

rocked the boat often fell in.

"Q All right. I am going to hand you what will be marked as Plaintiff's Exhibit No. 1, as soon as we get a break. I am going to ask you to look at that and see if you recognize that?

"A Yes, I do.

"Q Tell us what it is.

"A This is the accident report that I filled out on the day of the accident.

"Q Okay, is that in your handwriting?

"A Yes, it is.

"Q Mr. Greenhill, we have just taken a break for everybody to get up and stretch their legs. And now that we are all back, let me backtrack just a wee bit so I can make sure we've got all of this on the record. I will hand you what the court reporter has now marked as Plaintiff's Deposition Exhibit No. 1. Do you recognize that?

"A Yes, I do.

"Q Tell us what it is.

"A It is my -- it's the paper that I filled out when I was injured at the Forest Service.

"Q Up there in Oregon?

"A Up there in Oregon.

"Q And that's when you hurt your shoulder?

"A My left shoulder.

"Q Swinging a thing to cut the weeds?

"A A weed buster, yes.

"Q Under that there is a column -- let's see what number it is. I think it's No. 13, says, "The cause of injury." I believe you have described for us already the circumstances as to why that shows what it does?

"A Yes.

"Q Have you reviewed that document at my request earlier today?

"A Yes, I have.

"Q Is everything else in there true to form, so to speak?

"A Yes.

"Q Thank you, sir. Let me hand that back to the court reporter. Mr. Greenhill, I believe you described for us your work background up there at the Rogue River National Forest. Did you develop any other injuries or conditions that you attribute to your working there? Other than, of course, your underlying problem which we are going to get to here in a minute?

"A Yes, I did.

"Q Tell us about that.

"A My lower left leg developed a rash. A doctor looked at it and prescribed cortisone cream and said that it was eczema.

"Q All right. Let me back up and get you to be a little more specific. You mentioned your lower left leg. When you say "lower leg" I take it you mean below the knee, or so?

"A Below the knee and to the ankle.

"Q Okay, was it that whole part of your leg?

"A The outside portion of my left leg.

"Q Is that the same area that the Tordon or the herbicide got on your pants leg?

"MS. MINTZER: Objection.

"A The area that I am speaking of is the area that the Tordon soaked daily.

"Q Okay, what happened to that rash? You say the doctor prescribed cortisone treatment?

"A Yeah, and he said that it would probably clear up in a few weeks. It never cleared up, not while I was in Oregon.

"Q What kind of symptoms did you have with this rash?

"A It was an itching, flaking rash. And it was sort of -- I'd lost some of the feeling under the rash, because I would wake up with blood on my leg, often from scratching it in the night. The itch never went away.

"Q You say the sensation was diminished?

"A The sensation was diminished in my leg. When I would scratch I could not really feel the intensity of my scratching. When I was awake, I was able to keep from bloodying my leg, but when I was asleep I would often scratch

it in the night and wake up with blood on my sheets and my leg.

"Q How long did this rash persist?

"A Two, maybe three years.

"Q Would it clear up and go away, and then maybe reappear?

"A It would never completely clear up; it would diminish somewhat in the amount that it itched. But it always itched and it never did clear up at any point.

"Q What would you do in the three-month period that you were not working for the Forest Service up there in Oregon?

"A The only time that I was unemployed with the Forest Service I cut firewood, both for my own use and for sale. This firewood that I cut was purchased on a timber sale contract from the Forest Service.

"Q So it would be wood that was in the national forest?

"A Yes, it was. And it was defoliated.

"MS. MINTZER: Objection.

"Q When you say it was wood in the national forest, let me back up, and I will explain to you by way of clarification, that you are only allowed to answer the question I ask, as opposed to relating the story in a narrative form.

"A I see.

"Q What kind of wood were you allowed to cut? Just anything?

"A Only dead wood. Only wood that had been killed with herbicide.

"MS. MINTZER: Objection.

"Q How do you know that the wood had been killed with herbicide?

"A Because that's how it was sold to me. It was deadened wood, deadened by herbicide. This is what the contract said.

"MS. MINTZER: Objection.

"A This is what the contract said.

"Q Okay. Could you tell from looking at a tree why it might have died?

"A In some instances. If it was killed by the hack and squirt method you could see the hacks. If it was aerial sprayed we weren't able to see anything except that all the leaf-bearing trees were dead.

"Q You say you could see the evidence of the hack and squirt. What would that look like?

"A There would be gashes around the tree in a perfect circle.

"Q Other than that, how would the tree differ from a plain old living tree?

"A It would just be dead and very dry; no leaves on it.

"Q And these were the only type of trees that you were allowed to cut was the dead trees?

"A Yes, it was, standing dead timber.

"Q You mentioned aerial spraying. Were you ever involved in aerial spray, by the way?

"A The only time that I was ever involved with aerial spraying I was with a man named Jeff Lever, and he was flagging in the helicopter to do the spraying.

"Q Were you an official part of that operation, or did you just happen to be in the same area?

"A I was a part of his crew that day.

"Q What was your task?

"A To do whatever I was asked. We were defoliating timber, and we were just pulled in to guide the helicopter into an area.

"Q So I take it there was a certain area they wanted sprayed, and they couldn't tell that as readily from the air as from the ground?

"A Yes. We were supposed to be protecting creeks.

"Q Do you know what they were spraying on that occasion?

"A No. I heard rumors, but I don't know personally.

"Q Okay, you can't -- as you sit here today, tell us from your own personal knowledge what it was?

"A No, I can't.

"Q Tell us about your proximity to the spraying operation, where you were standing?

"A I was near enough to where when the herbicide was

dropped from the helicopter I could feel a spray or a mist.

"Q Did it have an odor?

"A Yes, it did.

"Q Did you recognize the odor?

"A Not actually, no.

"Q How long a process was this? Was it just one load or was it over a period of several weeks? Tell us about it.

"A It was one day for, I believe, two loads, to the best of my recollection.

"Q How much of the day would that have consumed? If you can recall.

"A An hour and a half.

"Q Was that your only direct experience with aerial spray?

"A Yes, it is.

"Q Other than that you simply cut timber in an area that you believe may have been aerially sprayed?

"A Yes.

"Q You stated that the defoliated -- the standing dead wood that you would cut, you would use some of that for your own use?

"A Yes, I burned firewood entirely for my heat.

"Q That was the only kind of heat you had in your house?

"A Yes, sir.

"Q I take it on the basis of what you just said, you didn't do anything like hack and squirt in Arkansas?

"A I didn't do any hack and squirt in Arkansas.

"Q Did you do any kind of chemical deforestation?

"A No, I did not.

"Q Did you use herbicides, insecticides, pesticides or other chemicals in your job duties as a forest service agent?

"A No, I did not.

"Q So is it a fair statement, and correct me if I'm wrong, that the last time you did that was when you were in Oregon?

"A That's true.

"Q Were you exposed in areas where herbicides or other similar chemicals were used while in Arkansas?

"MS. MINTZER: Objection.

"MR. MILLER: On what basis? Leading?

"MS. MINTZER: The question is to his knowledge, wasn't it?

"MR. MILLER: Yes.

"Q If you know, tell us if you were in any of those areas.

"A When I came to the Ozark National Forest they weren't currently storing or using chemicals on my district, or herbicides. I was, however, in and out of a building which had been previously used to store chemicals, and I did come in contact with equipment that was used in the Ozark

National Forest to defoliate timber. I cleaned and maintained some of that equipment during my stay.

"Q Did the room or that equipment have a noticeable odor?

"A No.

"Q I believe you also sustained an on-the-job injury in this hitch with the Forest Service here in Arkansas?

"A Yes, I did.

"Q Tell us about that, if you would.

"A We were working planting trees, and as I went to clear some debris away with my foot, I slipped and fell on my rear end. The ground was snow-covered at the time.

"Q It was snow covered. I take it it was in the winter months?

"A Yes.

"Q When you first fell out there in the forest, what happened?

"A I fell in the forest, and when I tried to get up I experienced a great deal of pain.

"Q Where was that pain?

"A In m y lower right-hand side of my back.

"Q Okay, now where was the injury that you sustained up in Oregon?

"A Just below my left shoulder. I called my shoulder; it was just slightly below it.

"Q We were briefly interrupted there, Mr. Greenhill, if I can try to place us back in the line of questioning, I believe you just told us that the pain with this second injury was in your, and correct me if I'm wrong, lower right back?

"A Yes, sir.

"Q And the other one in Oregon was where?

"A My left shoulder.

"Q Were the two kinds of pain you felt the same type of pain?

"A No, sir.

"Q Describe the difference for us as best you can.

"A The pain in the left shoulder was only when I attempted to use it. And it was, as best I can recall, a rather sharp pain when I would attempt to use it. The pain in my lower right side was there continuously, and it was more on the order of heartbeat type of a sharp pain.

"Q More of a throbbing?

"A Yes.

"Q Let me ask you this. I may not have asked it previously, and if I didn't I intended to. The injury you sustained in Oregon to your -- I believe you said your back, below the left shoulder?

"A Yes, sir.

"Q You stated you went to the doctor and had some

treatment?

"A Yes, sir.

"Q Did that clear up and go away?

"A Yes, it did.

"Q Did it ever bother you again?

"A No, it did not.

"Q Did it ever hamper your ability to earn a living for you and your family?

"A No, it did not.

"Q Let's now concentrate on the second injury here in Arkansas, to the lower right-hand part of your back. Did you continue to work that day?

"A Yes.

"Q When did you first seek medical attention?

"A Excuse me. I did not continue, I stayed on the job because I was the only one on the job besides the boss that had a driver's license for the government vehicle. And I was in charge of the vehicle. At the end of the shift, at the end of that day's work, I wasn't able to drive the vehicle. I had to request one of the others to drive it in.

"Q Okay. When you went to the doctor tell us what happened, what they found.

"A I went to the doctor the following morning in Russellville, Arkansas, Dr. Teeter, and he told me that I was suffering from a badly bruised or strained muscle in my

lower back. I believe he said lumbar region.

"Q Did that clear itself up?

"A No, it didn't. The pain increased.

"Q What kind of treatment did Dr. Teeter give you after it didn't clear up?

"A Dr. Teeter prescribed some muscle relaxers and aspirin, and total rest.

"Q What kind of doctor is Dr. Teeter?

"A Dr. Teeter is a family practice physician.

"Q Was he your family doctor?

"A No, he wasn't. I didn't have a family doctor; we hadn't had any need for one.

"Q How did you come by Dr. Teeter?

"A We just looked in the phone book for a doctor in Russellville.

"Q Did Dr. Teeter continue to treat you with muscle relaxants and aspirin?

"A For a period of time, which I believe was approximately two to three months, at which time he referred me to Dr. Kolb, an orthopedic surgeon.

"Q Where is Dr. Kolb located?

"A Dr. Kolb is also in Russellville, Arkansas.

"Q Okay, what did Dr. Kolb find?

"A Dr. Kolb at first found nothing different than Dr. Teeter, and he concurred with his diagnosis.

When the pain continued beyond the two weeks that he expected it to, he ran additional x-rays at which time he told me I had arthritis in my spine.

"Q This was over a course of how long, from the time of the injury?

"A This was probably about a five months interval.

"Q Were you off work completely? Were you working sometime, or would you intermittently miss work? What was the status of that?

"A My temporary assignment had run out. I missed some work prior to it running out, and I was on light, light duty for some time before.

"Q I believe before I interrupted you, you were still under the care of the orthopedic doctor?

"A Yes.

"Q What was his name again?

"A Dr. Kolb.

"Q Is that C-o-b-b?

"A K-o-l-b.

"Q And you just told us the extra tests that he had run determined that you had some kind of spinal arthritis?

"A Yes, sir.

"Q Okay, did that diagnosis ever change?

"A Yes.

"Q What else did they find, and when did they find it?

"A They put me in the hospital, I believe, June 3, and treated me for the spine condition while they were running tests.

"Q You say June 3. What year was this?

"A I believe that would be '79.

"Q Go ahead. What did they find when they ran those additional tests?

"A When they ran the additional tests, including a bone scan, they said that I had deterioration of the spine, which was a common problem for older people. And that had he looked at my x-rays and not known me as an individual, he would assume that I was about 65 years old and worked hard all my life.

"Q Did they discharge you from the hospital?

"A No. Just as he was telling me this information, I mentioned to him a lump or a swelling on the left side of my neck that had come up during the time that he was treating me.

"Q Okay, did they examine that lump or swelling on the left side of your neck?

"A As soon as he examined the lump he told me that it was a lymph node and that it needed to be biopsied right away.

"Q Did they do that?

"A The next morning I went into surgery and they removed

the lymph node which they determined was malignant lymphoma.

"Q Now this was around I believe it was June, 1979?

"A Yes, sir.

"Q In time could you locate that in contrast to when it was you used the Tordon 101?

"MS. MINTZER: Objection.

"MR. MILLER: What is your objection?

"MS. MINTZER: Sorry.

"Q Answer the question.

"A I would estimate it was about two years.

"Q Two years later that this was diagnosed?

"A Yes.

"Q Other than cancer in your lymph node, did they ever come up with any more concrete or more specific diagnosis?

"A Yes, specifically I was diagnosed as Hodgkin's type lymphoma, Type B, Stage 4.

"Q I'm not going to ask that you go into any detailed description of what that is, because we will be talking to doctors who can, I'm sure, tell us a great deal about it. But generally, what is that, as you understood it?

"A As I understand my condition, I have cancer of the lymphatic system, and at the time of this discovery it had spread to other portions of my body.

"Q What other portions?

"A To my spine, my lower spine.

"Q What course of treatment did you undergo for Hodgkin's disease?

"A Initially, I began a regimen of chemotherapy, which is a chemical injection.

"Q What did that entail?

"A It entailed being injected with chemicals that would destroy cancer cells, and oral medications that I would take for approximately two weeks out of the month.

"Q Okay, and again I am not so much interested in the medical details because we are going to be talking to your doctors concerning that.

"A Yes.

"Q I'm more interested in its effects on you, and what was involved for you. You mentioned injections. How often would you have an injection?

"A The treatment consisted of an initial injection, followed a week later with another injection. During this two-week period I would be taking two or three types of oral medications. That's what the treatment consisted of.

"Q What kind of side effects did it have? And once again, I'm not talking so much in medical terms, just tell me how it affected you.

"A I lost a lot of my hair.

"Q I take it some of that has since grown back?

"A Oh, yes.

"Q It looks like you have a full head of hair as we sit here today.

"A I lost a great deal of my hair at that time, and I was nauseated, vomiting, dry heaves and diarrhea.

"Q How long would this last?

"A For approximately three weeks out of the month. And that would be approximately one week before I began the next month's treatment.

"Q Would the treatment be the same month after month?

"A Yes, sir.

"Q So each time you took this treatment you would be ill for three weeks, and then relatively better for the final week?

"A Yes.

"Q How long did this go on?

"A Approximately five to six months.

"Q During this five to six month period -- (Strike) Prior to this diagnosis of cancer in June of '79 had your wife worked outside the home?

"A Yes, she did.

"Q At some point did she quit working outside the home?

"A Yes, she quit. I was injured early in December, and she quit late in December of that same year.

"Q How often would you have to go to the doctor in

the course of this first five to six months of chemotherapy?

"A During the first five to six months I'd say on the average I went once a week.

"Q Were you able to drive yourself?

"A No. During this time I was confined to bed with pain, on doctor's orders. And the pain would get so intense that I would just have to see the physician to see if there was anything to be done. I was unable to drive because of the severity of the pain, and my wife would drive me to and from.

"Q I take it your wife would help take care of you at the house, also?

"A Yes. I was supposed to stay flat of my back during a portion of this time.

"Q Was your wife supportive throughout this?

"A Yes, she was. I suspect that she left work because of my condition, and possibly other reasons.

"Q All right, you say you suspect. I take it that means you don't know for sure?

"A We've talked about it, and I believe that's it, but I don't know for sure.

"Q We'll talk to her on that, then. Who were your doctors during this period of time?

"A During that period of time I was firstly with Dr. Teeter and then with Dr. Kolb. And I remained with Dr. Kolb

until I began to see Dr. Fecher.

"Q I believe Dr. Kolb was the orthopedist. Dr. Fecher, what kind of doctor is he?

"A Dr. Fecher is an oncologist, a hematologist-oncologist.

"Q As a result of this case I know what an oncologist is, but tell those on the jury what you understand an oncologist to be.

"A An oncologist is a doctor that specializes in the cancers, leukemias.

"Q Treating of cancer?

"A Yes, sir.

"Q You say you took this first chemotherapy regimen for a period of five to six months. What did you do after that?

"A At the end of that period they had to stop my chemotherapy because they suspected it was causing nerve damage, which was causing extreme pain in my legs.

"Q What did they try next?

"A They next put me on 26 radiation therapy treatments.

"Q All right, 26 as a number, as opposed to a name for it?

"A Yes. There was 26 treatments, given one right after the other, on a daily basis.

"Q Was that in the hospital or as an out-patient?

"A It was done as an out-patient at the oncology-radiation portion of Holt-Krock Clinic.

"Q During that month of treatment, 26 days, or whatever it might be, what kind of side effects, if any, did that regimen of treatment have on you?

"A I would begin vomiting, at the outset, approximately 45 minutes after treatment. At the end I would begin vomiting often before I left the office. I continued vomiting the entire time and lost an enormous amount of weight. I would vomit until I cleared my system, and then I would have dry heaves the rest of the time.

"Q When would this vomiting stop?

"A It didn't stop until I quit treatments.

"Q What about your ability to sleep? Was that affected?

"A My ability to sleep was affected due to the nausea, the vomiting, the diarrhea, as well as the fact that I was no longer able to lay flat in bed. From that point to this I am sleeping in a hospital bed, separate from my wife, with the head elevated and the legs and feet elevated.

"Q Why is that?

"A Because of the damage to my spine.

"Q Has the doctor told you this, or is this something that you do for your comfort?

"A This is something that the doctor told me to do. He contacted the Cancer Society and got me a hospital bed.

"Q At the end of this 26 days of the second round of treatment, if you will allow me to call it that, why was that terminated?

"A I completed the regimen at that time.

"Q What did the doctors say about your condition at that time?

"A They really didn't tell me very much about my condition at that time. There were no follow-up x-rays, but they assumed that the cancer was gone, and I was in 100 percent remission.

"Q Does that mean that you are cured for life?

"A No, sir, remission means that they can -- at that point, find no cancer in your body, although they are relatively certain that it still exists.

"Q At this point, after that first two rounds of treatment, how would you describe your mental attitude?

"A At the end of the radiation treatment they gave me one more chemotherapy treatment.

"Q Was this shortly thereafter?

"A Yes, they gave me approximately two or three weeks to recuperate from the prior treatments, and then they put me in, just to make sure, and began another treatment, which required me to spend five days every three weeks in

the hospital.

"Q How long did that go on?

"A One treatment. One three-week period.

"Q Okay, the first week or five days, you say, of being in the hospital?

"A The first five days I was in the hospital taking injections on a daily basis.

"Q Did this have similar side effects?

"A They were worse. They were similar but worse.

"Q Tell us about it.

"A Within about 45 minutes after the injection, I began vomiting and I would vomit almost to the minute, eight hours. During that time, of course, I would clear my system of any food that I might have had in it and dry heaves would result. I also had diarrhea sporadically.

"Q Okay, within that eight-hour period how often would you vomit?

"A Every three to five minutes.

"Q I believe you said this cycle of therapy, where you would vomit every three to five minutes for approximately eight hours, was five days duration?

"A Yes, sir.

"Q What did they do in the remaining period of that three-week period of the regimen?

"A After that period I would go home for a week, at

"Q Would it burn as any normal wood would? Could you tell a difference?

"MS. MINTZER: Objection.

"A The firewood would --

"MR. MILLER: What is your objection?

"MS. MINTZER: You are leading the witness.

"Q Tell us how the wood would burn, and compare it with other wood if you can.

"A I could really tell no difference in how it burned.

"Q How long were you there at the U. S. Forest Service there in Oregon?

"A Two, possibly three seasons.

"Q Where did you go after that?

"A I came to the Ozark National Forest, Pleasant Hill District, in Clarksville, Arkansas.

"Q Okay, what was the reason for that move?

"A I moved to Arkansas to be closer to my family core, which was in Alabama at this time. Although I could have moved to Alabama, this area was more suitable.

"Q What were your duties with the forestry service here in Arkansas?

"A I was a forestry aid, which meant I did a variety, including planting trees, although I never killed any timber in this area other than with a chain saw. A lot of my duties involved thinning timber, surveying.

which time I would come back to Dr. Fecher's office and have an injection as an out-patient, which would again make me nauseated for a period of approximately eight hours. I would usually begin vomiting before I left his office, and I had to make a 60 mile trek to my home, which I had to continually stop, or carry something to vomit in.

"Q After this first three rounds of treatment did they start something else immediately, or was there a break, so to speak?

"A No, I had a break.

"Q Okay, let me stop there and ask why that happened?

"A They assumed that I was in total remission at that point.

"Q How would you describe your mental attitude at the end of that first --

"A At the end of that three-week period, I was depressed and weakened to a point to where I felt that the quality of life was deteriorating at such a pace that I did not wish to continue treatments, and, in fact, had discussed whether suicide would be rational.

"Q Who did you discuss this with?

"A I believe I discussed it with my doctor and my family.

"Q Did you ever reach a resolution as to whether, in your own mind, life at this rate was worth it?

"A Let me say that at that point in time I determined

that it was not. Dr. Fecher felt that probably my cancer was gone, so he stopped treatments.

"Q Did your condition, or your life, improve when that treatment was stopped?

"A When the treatment was stopped I felt as if I had licked it; I thought I had the battle won, and I immediately began trying to get back into a health state. My nausea disappeared to a great extent. I retained some of it, and some other side effects, like dizziness and joint pains.

"Q What about your back pain?

"A The back pain continued and still continues.

"Q How often would you have the back pain? Would it be a once a week, once a month, kind of occurrence, or would it be more often?

"A The back was every day.

"Q Were you prescribed any drugs to help alleviate the effect of that pain?

"A Yes, I was. I was prescribed Percodan. Excuse me, initially it was Tylox, which is a similar drug.

"Q And then it was Percodan?

"A Yes.

"Q How often would you take these pain relievers?

"A They were prescribed every three hours -- two, initially every three hours as needed for pain. At this point in time?

"Q Certainly.

"A I take four to five tablets a day.

"Q Does that make the pain completely vanish?

"A No.

"Q What effect does it have?

"A I am taking Percodan now, and it makes the pain tolerable, and sometimes a little better than that. Sometimes not that well. The Percodan on its own won't get rid of the pain. It is necessary for me to get in a semi-reclining position, which I have described.

"Q You've described for us the first three rounds of your treatment, in a process where -- at the end of that, you stopped having the chemotherapy and the side effects disappeared to a large extent. What was the next medical treatment you received, other than follow-up visits?

"A Approximately three months later the cancer recurred.

"Q Where did it recur?

"A The only place they located it was in my lymph nodes in my neck.

"Q What did they do for you then?

"A After they biopsied the lymph nodes they gave me chemotherapy treatments.

"Q For how long?

"A I believe about three to four months. I really can't pin it down any closer than that.

"Q Did you experience any side effects in this fourth round of treatment?

"A Once again I was nauseated during the majority of the time. I vomited, had dry heaves and diarrhea, loss of sleep, nervousness.

"Q Would that be a once a week kind of occasion?

"A It would last for approximately three weeks.

"Q Every day?

"A Every day.

"Q At the end of this three to four-week treatment regimen what happened?

"A I began having leg pains to a point that they were having to eliminate drugs that were involved in the treatment, which by the time this came about they stopped giving me the chemotherapy because my blood would not recover. The blood count would stay low, and they weren't able to treat me. And he said that he couldn't remove anymore of the drugs that were in the treatment. Otherwise, we would be wasting our time with the treatment, and I would just have to deal with the pain. They were unable to get me out of the pain with my legs.

"Q So I take it they discontinued that treatment?

"A They discontinued the treatment because of my blood problems.

"Q Did they start up another one at that time?

"A At that time I began taking radiation.

"Q Did that cause any side effects?

"A Yes. The radiation I took at that time was in the upper portion of my body to my lower chin, from about here to here. I lost my voice almost entirely; I was not able to swallow solid foods for a period of time during and after the treatment. I had a full beard at this time. I lost all of the hair on my face below my chin; I still had difficulty swallowing; my mouth becomes dry and I have to have liquids to facilitate swallowing.

"Q I take it you had not had that problem before the treatment?

"A No, I had not. I also lost about 40 pounds during this treatment.

"Q Was Dr. Fecher again your doctor?

"A Dr. Broadwater and Dr. Erickson and Dr. Miller were the radiation doctors. Dr. Fecher was still my doctor, but they were the doctors that were in charge of my treatment once it became radiation.

"Q In other words, Dr. Fecher referred you to them?

"A Yes.

"Q Does Dr. Fecher remain your doctor today?

"A Yes, he does.

"Q How many bouts -- rather, how many instances of therapy have you had, total? If you know.

"A If you count the different types, including the radiation, I have had, I believe, five to this point.

"Q At any point during the last six years, five years, that you've been undergoing these treatments, have you ever been what a normal person would consider well?

"A No, I have not.

"Q What problems do you have day in and day out, irrespective of whether you're having a flare-up or recurrence of the cancer?

"A I have daily pain, regardless of what I do. The pain is affected by what I do, of course. It limits my activities, my physical activities, extremely. I used to hunt and fish, hike, backpack. I can't do any of those activities any longer. I'm not able to stand on my legs long enough because of the back pain. I still suffer from nausea somewhat; loss of appetite, loss of sleep. I mentioned that I no longer share the same bed with my wife because of my physical condition.

"Q Let me ask you how this has affected your relationship with your family? How has it affected your relationship with your children? Let's take them one at a time.

"A My youngest son was probably affected stronger than anyone.

"Q How young was he when you were diagnosed?

"A He was about six, maybe seven, when I started.

"Q At each stage of your medical care have you been honest with your children about the seriousness of your problem?

"A We decided from the onset that the best way to deal with it was to be honest with ourselves and everyone involved. And certainly my children were involved. Yes.

"Q How has it affected your relationship with your youngest son?

"A My youngest son is preoccupied with my condition to a great extent. He will very rarely mention it to anyone outside the family, but he continually questions me about how I'm feeling, if I'm hurting. He wants details. He wants to know how bad I'm hurting, and what I can do. And he is also afraid to leave me on my own.

"Q Do you know why he is afraid to leave you?

"A He is afraid that I might die when he is not there.

"Q What about your older son? Your natural son.

"A My natural son was living in Oregon, although he came on regular summer visits and spent the entire summer. The first year that I was taking treatments Jimmy came and stayed for the three-month time, and during which time I was taking treatments.

"Q Once again, were you open with him about the gravity of your condition?

"A Yes, I was. It hurt me. It hurt me emotionally that a condition that I had and that I had no control over

could hurt my family in such a way.

"Q At some point did your son come to live with you full-time?

"A Yes, a little over a year ago he began living with us.

"Q So he has lived with you since then?

"A Yes, sir.

"Q How old is he?

"A He is seventeen.

"Q How has this affected your relationship with your wife?

"A My wife has been very nervous and depressed since this time. She is very supportive. We haven't really experienced any marital problems because of it. We may have been drawn closer, although I do express some concern that at some point she may become tired of caring for a sick man and wish for someone else.

"Q Is that something you all have discussed?

"A Yes.

"Q Is it something that you are concerned about?

"A It is something that I feel I shouldn't be concerned about, but I am.

"Q What is a typical day in the Greenhill home like?

"A As far as I'm concerned, I get up out of my hospital bed and I move to my recliner.

"Q What time do you get up, usually?

"A Six-thirty.

"Q Have you always been an early riser?

"A I've always been an early riser, and my son goes to school at 7:00 o'clock in the morning, and I get up to visit with him in the morning.

"Q What happens after that?

"A After that, I wait until my wife takes care of the chores.

"Q What kind of chores are you able to do?

"A Virtually none. I can't put my finger on one chore that I'm able to do on a consistent basis. Occasionally I may be able to help pick up a little bit, but not on a regular basis.

"Q Are you able to help with the grocery shopping or anything?

"A I like to go with my wife when she does groceries, although I most often end up laying down in the car. I have recliner seats in the car, because I'm not able to spend an hour walking around in a grocery store due to my back pain.

"Q How often do you go grocery shopping with your wife?

"A Once a month.

"Q Is that something you look forward to?

"A An outing of any type I look forward to, and I enjoy coming to town, certainly.

"Q What happens after you get up and your wife has

finished the chores?

"A After chores she brings me breakfast. Most days I eat breakfast in my recliner.

"Q Why is that?

"A Due to back pain. I can sit at a regular chair or table if I'm taking medication, but I generally end up being in pain because of it. So therefore, I just generally sit in my chair.

"Q After your breakfast what do you do?

"A I generally sit in my chair and read or watch TV.

"Q How long do you do that?

"A Most of the day. I very rarely do anything else.

"Q Do you feel like doing anything else?

"A No, I don't.

"Q Do you ever feel better and feel good enough to get out and do a little something?

"A Occasionally I am able to get out and make a visit, go to town, ride in the car -- simple things. And whenever I feel at all able to I do.

"Q What time do you usually end up going to bed?

"A Approximately 9:00 o'clock.

"Q You mentioned that you read in your spare time.

"A Yes.

"Q What sort of thing do you read?

"A Novels and magazines, primarily.

"Q How has this cancer affected your relationship with your friends and acquaintances?

"A It has had a great deal of effect on my friends. I live rurally, and in my area one of the major forms of recreation is we call it neighboring, visiting with your neighbors. I am very rarely able to visit my neighbors any longer because I have to have a recliner to sit in. And the neighbors don't particularly like to come anymore because they witnessed me during the times when I was sickest, and they don't really know whether I feel like company, and it puts them in an awkward position, so they just don't come.

"Q Before the onset of your cancer is this something that you would do fairly frequently?

"A Yes.

"Q When you say rural, I guess different people have different ideas. How rural an area do you live in?

"A I live approximately 20 miles by dirt road to the nearest town, which is Ozark, Arkansas. The immediate area that I live in, the community that I live in, has probably 15 homes, with the average home being situated on 40 acres. And it is surrounded by national forest.

"Q So I take it not many people pass your house on the way to town?

"A I live a half a mile back into the woods from the main dirt road, and I don't see any traffic.

"MR. MILLER: Let's take a short break.

"Q Mr. Greenhill, once again we have taken a short break so everyone could get up to stretch their legs. When is the last time you saw a doctor, or your doctor?

"A Last Friday the 13th.

"Q Okay, which doctor was that that you saw then?

"A Dr. Fecher was gone and there was a doctor standing in, and I believe Dr. Malony was his name.

"Q Some associate of Dr. Fecher's?

"A Yes.

"Q Was this a routine check-up, or was there a specific problem that brought you in to the doctor?

"A It was both. I have a routine monthly check-up, and during the last several months I had noticed some problems and they had been running some tests. This particular visit I was to get all the information from the tests that they had been running.

"Q The tests, I gather, had been taken over the several prior weeks or a month or two?

"A Yes.

"Q And once again, I don't want to get into too much medical knowledge because, first of all, you're not a doctor and, secondly, there are other sources of information. But generally, what sorts of tests were they?

"A I had a bone scan, I had a CT scan of my liver,

I had x-rays of my skull and x-rays of my spine on three or four views, and a chest x-ray.

"Q What do you understand the purpose of these monthly visits to be, and the tests?

"A The monthly visits are designed to diagnose cancer at its earliest onset so that treatments can begin.

"Q This last visit, when you got the news of all the tests, was the news good or bad?

"A The news was bad.

"Q Tell us about it.

"A The CT scan had revealed that the cancer was present in my liver in three locations.

"Q Was this the first time you've had cancer in your liver?

"A Yes, it is.

"Q Have the doctors given you any indication as to what the future might hold?

"A They say that the condition is terminal, although they haven't given me any numbers. They hold out high hopes that I will have a meaningful remission at the end of treatment.

"Q When you say "terminal" that means it is going to kill you?

"A Yes, sir.

"Q How long have you been living with the knowledge that

you are a dying man?

"A Since last Friday, for certain; before that it was a good probability, for the last six years.

"Q You say they have held out -- I believe the words you used was high hopes for a remission and meaningful life?

"A Yes.

"Q Did they place any percentages on that?

"A No, they didn't really place any numbers on that.

"Q Are you scheduled to begin treatment for this condition shortly?

"A Yes, just after the first of the year.

"Q What kind of treatment do you understand that it will be?

"A The treatment that they have proposed is the one that I was ready to quit treatment with, where I spent five days in the hospital, and I'm apprehensive about it.

"Q Was this the one where you were nauseous for eight hours afterwards?

"A Yes, it is.

"Q They told you it was going to be the same treatment?

"A The same treatment, yes, sir.

"Q As you sit here today, what plans do you have for the future?

"A All through this disease it has been difficult to make long-range plans. At this point it is probably more so.

Right now the only thing that I can say is that I am going to attempt to take the full course of treatments, and just try to make it through until next summer when I get finished with them.

"Q Have you, since this most recent diagnosis, considered taking your own life again?

"A At this point I haven't actively considered it, although it is in the back of my mind at this time.

"Q But right now what is your goal?

"A Right now my goal is to do my best to take these treatments and try to beat it again, and live until next summer when I am able to feel like myself again.

"Q I may be asking the obvious, but have you worked outside the home any since your diagnosis of cancer?

"A No, I haven't.

"Q Have you sought employment?

"A No, I haven't.

"Q Do you feel that you are able to do a full day's work?

"A No, I'm not.

"Q Do you know any work that pays any amount of money that you are able to do?

"A No, I do not.

"Q What plans did you have with regard to work in the future? Had you planned to work for a long time, or retire

early, or what?

"A I planned to work until retirement age or until I didn't need the money any longer. Certainly, I had dreams like everybody else.

"Q What were some of those dreams?

"A Some of those dreams? A few weeks before I was injured I bought some property. I bought 15 acres of mountain property and planned to build a log house myself upon the property.

"Q Did that dream become a reality?

"A Somewhat. I am living in an unfinished log house at this time. My neighbors pitched in and we had, I guess, an old fashioned house raising. I wasn't able to do much of the work, but the ones that could did.

"Q Thank you, Mr. Greenhill. For the record, I believe, and it may have been on the record previously, you have agreed to compile a list of all doctors or other health care providers, hospitals, or anything of that nature, that you can remember being treated by at anytime in your life, is that correct?

"A Yes, sir.

"Q All right. And you will furnish that list to Mr. Jones as quick as you can put that together?

"A Yes, I will.

"Q All right, and we will forward it to all other counsel.

"MR. MILLER: On the record, do we agree that the signature on this deposition could be before any Notary?

"MS. MINTZER: Yes.

"MR. MILLER: Okay, and if for any reason it is not signed at the time of trial or hearing, as it may be needed, it can be used without a signature? Is that the agreement?

"MS. MINTZER: I have no trouble with that.

"MR. MILLER: Okay, that's all I have at this time.

"MS. MINTZER: I am going to forego the opportunity to cross-examine at this time, until we are able to complete our discovery and we can resume the deposition at that time.

"MR. MILLER: I thought of something I need to ask. Let's go back on the record.

"Q Mr. Greenhill, from your testimony it is obvious that you have undergone a great deal in the way of medical care. Is that correct?

"A Yes, it is.

"Q Do you happen to know, or are you able to give us a ballpark figure as to what your medical expenses in connection with your cancer are at this time?

"A I'm sorry that I can't give you a dollar figure. I know it is tremendous.

"Q By tremendous, can you say over "X" number of dollars, or in the neighborhood of such and such?

"A I'm sure it is in the neighborhood of $100,000.00 at this point.

"MR. MILLER: That's all I have."

(Video deposition completed at 3:37 p.m.)

THE COURT: Ladies and gentlemen, as I indicated earlier today, we are going to quit at three o'clock -- we are going to quit a thirty-thirty. Be back in the jury box in the morning at nine o'clock. You should know no more about this case at nine o'clock in the morning than you know right now. Don't discuss it with each other. I know there is a tendency to want to do that, but don't do it. It's not time for that yet. Don't allow anyone to discuss it with you. Don't look at it on television, if it happened to be there; I don't think it will be. But if you see something that deals with anything like this case, don't look at it. Turn it off. You will not see anything in the newspaper, I am sure, but if you do don't read it. If anyone tries to discuss this case with you, on a direct basis or an indirect basis, through somebody else, contact me immediately. I don't think that is going to happen, but just on the safe side.

So, I am going to excuse you now, and be back in the jury box in the morning at nine o'clock. And we stand

in recess until nine o'clock tomorrow.

(Proceedings concluded at 3:40 p.m.)

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

REPORTER'S CERTIFICATE

I certify that the foregoing is a correct transcript of the record of proceedings in the above-entitled matter.

January 18, 1988

Libby Crawford

ANN E. (LIBBY) CRAWFORD
OFFICIAL COURT REPORTER

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ANN I. GREENHILL, Individually and on Behalf of the Heirs of the Estate of James Edward Greenhill, Deceased,	§	
Plaintiff,	§	NO. M-79-79-CA
VS.	§	Marshall, Texas
	§	December 1, 1987
DOW CHEMICAL COMPANY,	§	9:00 A.M.
Defendant.	§	

TRANSCRIPT OF TRIAL PROCEEDINGS

BEFORE THE HONORABLE SAM B. HALL, JR.,
UNITED STATES DISTRICT JUDGE,
AND A JURY.

VOLUME 2 of 3

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I N D E X

WITNESSES FOR THE PLAINTIFF:	DIRECT:	CROSS:	REDIRECT:	RECROSS
DR. DANIEL T. TEITELBAUM	10	123	227	232

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December 1, 1987

(Open court; jury not present.)

THE COURT: Please be seated. Hold the Jury out until we finish this matter. I believe there has been a Motion filed by Dow. You may present your Motion.

MR. ORTEGO: Yes, Your Honor. Judge, I would ask could the witness be excluded who the Motion is about since he is in the courtroom now? I'll be quick. The witness, Dr. Teitelbaum, who I am moving is in the courtroom now. Could he be excluded?

THE COURT: Yes. Doctor, you may go outside, please.

(Witness retiring from the courtroom.)

THE COURT: Any other witnesses in the courtroom at this time? All right, go ahead.

MR. ORTEGO: Your Honor, Dow Chemical Company has moved to exclude the testimony of the Plaintiff's expert, Dr. Daniel Teitelbaum, pursuant to Federal Rules of Evidence 702, 703 and 403. And the basis for this Motion is that Dr. Teitelbaum is not an expert in any medical area or specialty which is relevant to this litigation. His opinions would not assist the Jury in understanding the evidence presented, and should be excluded under the Federal Rules of Evidence Rule 703.

One of the cases that I would like to point the

Court to, which I pointed out in my Motion for Summary Judgement, was Viterbo v. Dow which was decided by this Court by Judge Cobb and affirmed by the Fifth Circuit, in which primarily the Fifth Circuit stated that it is a duty of the district court to police the use of experts. And in re: New Orleans Aircraft Case the Fifth Circuit did the same thing previously saying that it's becoming too easy for experts to come on the witness stands and say something. And in Viterbo the court said basically just because an expert says it's so does not make it necessarily so.

And it doesn't go to the weight of the evidence in this particular case, Your Honor. Dr. Teitelbaum said he is not a chemist; that 95 percent of all Hodgkin's Disease is idiopathic; no one knows the cause of it. His opinion would be pure speculation and should not go to the jury. And the Rule 703 clearly states forth that the type of data in which an expert must rely upon to render an opinion, Dr. Teitelbaum does not render an opinion on the type of data which experts are allowed to rely upon pursuant to Rule 703.

And in the Viterbo case Dr. Johnson was properly qualified as an expert, but his testimony was excluded in a motion for summary judgement on the grounds that the data he relied upon was not that which is normally relied upon.

In the alternative, Your Honor, if you do not preclude Dr. Teitelbaum from testing, even though he admits the cause of Hodgkin's Disease is unknown and cannot state to a reasonable degree of medical probability that 2, 4-D is the proximate cause, what I am asking the Court is to limit his testimony to whatever area you feel he is qualified to. My concern is that I think Dr. Teitelbaum will testify to many things -- chemistry, epidemiological studies, dermatology. I would like him to be limited, because at his deposition he said -- he stated quite clearly that he isn't a chemist; so he should not be allowed to talk about chemistry. He said he is not a dermatologist; he shouldn't be allowed to talk about skin disorders. He said he is not a hematologist; he is not an epidemiologist, and he is not an oncologist, nor is he an expert in occupational and preventive medicine, neurology, psychiatry.

What I am concerned about, Your Honor, is that Dr. Teitelbaum will start talking about the internal documents of my client, passing judgement on what occupational health is involved, what he would do, what the chemistry of this product is, besides the basic understanding, how the process how the chemical is manufactured. He's just a medical doctor not qualified or certified in any area, and I ask him to be precluded, or in the alternative, his testimony be limited to specific areas which he can be

qualified to.

MR. BALDWIN, SR.: Well, Your Honor, I just got a copy of that Motion about a minute ago, and all it is is a rehash of the Motion For Summary Judgement which Your Honor has overruled. Rule 704, it is, and not 703. 702 is a rule that covers experts, and it says:

> "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

Dr. Teitelbaum is a medical doctor. He is a Board certified toxicologist, and he is highly qualified in his field to testify about these matters. Even though Mr. Ortego would like to think that this case rises and falls on whether this is Hodgkin's Disease, that's not the fact and certainly not Plaintiff's contention; and I think he is highly qualified as a toxicologist and as a medical doctor to testify about those matters to which he has skill and training.

MR. ORTEGO: Just one brief reply, Your Honor. This is not the same as the Motion For Summary Judgement in that now we are at trial and I am asking for his testimony to be limited or precluded, and I am not asking for summary

judgement.

THE COURT: The Motion is overruled. Call the Jury in. Who is your first witness?

MR. BALDWIN, SR.: Dr. Teitelbaum, Your Honor. We have some documentary, housekeeping matters to take care of.

THE COURT: All right.

MR. ORTEGO: Judge, I am happy to report that Mr. Baldwin and I had a discussion and I think we are not going to have the same trouble we had yesterday with documents. We have come to some agreements. There are certain things that I might have problems technically getting in and Mr. Baldwin might have technically getting in, but I think we have worked out a lot of the problems today.

THE COURT: All right.

(Jury in at 9:04 a.m.)

THE COURT: I see you ladies are bringing some heavy coats this morning. If it gets a little bit chilly, we will try to get the heat a little bit better regulated. You might turn it up a little bit, Mr. Lee. It's a little bit chilly in here this morning.

Let's proceed.

MR. BALDWIN, JR.: Your Honor, at this time Plaintiffs would offer Plaintiff's Exhibit No. 5, the videotaped deposition of Mr. James Greenhill.

THE COURT: What number?

MR. BALDWIN, JR.: No. 5

THE COURT: All right.

MR. ORTEGO: No objection, Your Honor.

THE COURT: It will be admitted.

MR. BALDWIN, JR.: Your Honor, we would next like to offer Plaintiff's Exhibit 3 A, 3 B, 3 C, 3 D and 3 E. They are the personnel records of James Greenhill.

MR. ORTEGO: Your Honor, I will have no objection, but at the same time I would like to offer the remainder of the file in the same exhibit. So to save time, I would like to put in the rest of the documents that go into the personnel file.

THE COURT: All right, you may do so.

MR. ORTEGO: This will all become part of Plaintiff's 3.

MR. BALDWIN, JR.: That's fine with me.

MR. ORTEGO: Is that all right with the Court?

THE COURT: It will be all right.

MR. ORTEGO: Thank you, Your Honor.

MR. BALDWIN, JR.: Your Honor, if I may, I'd like to read certain portions off these personnel records.

THE COURT: You may proceed.

MR. BALDWIN, JR.: Plaintiff's Exhibit No. 3 A, U.S. Department of Labor Employment Standards Administration Attending Physician's Report, James Edward Greenhill, Star

Route 2, Ozark, Arkansas.

"What history of the injury? Patient fell while working for the U. S. Forestry Service on 12-11-78 and suffered acute onset of low back pain which persisted to the present. Also while working for the U. S. Forestry Service in Oregon in 1975 and '77 he was exposed to Tordon 101 and 2, 4-D on multiple occasions.

"What are your findings? He has a malignant lymphoma that is involving multiple thoracic lumbar vertebrae in addition to involvement of multiple lymph nodes.

"What is your diagnosis? Malignant lymphoma, number one; number two, back pain to the vertebral collapse to a fall on 12-11-78."

This is Plaintiff's Exhibit 3 B, Record of Leave Data:

"James E. Greenhill, 3-15-78. Carryover balance from prior leave year ending 12-31-77. Current leave year accrual through pay period ending 3-25-78."

This is Plaintiff's Exhibit 3 C. It's a Certification of Application of James Greenhill at the U. S. Forestry Service, Russellville, Arkansas, 3-27-78. This is Notification of Personnel Action:

"James Greenhill, Regional Forester, Region Height Pleasant Hill Ranger District, Ozark, St. Francis National Forest. Base salary: $8,366.00.

3 E, this is the Application for Temporary Employment with the U. S. Department of Agriculture.

"Available for work: 0-1-78 to 12-30-78."

We would offer these at this time, Your Honor.

THE COURT: They will be admitted.

MR. ORTEGO: Your Honor, I will offer the remainder of the records and comment, if necessary, during my case, if that's all right.

THE COURT: All right.

MR. ORTEGO: So the remainder is received as well?

THE COURT: Yes.

MR. ORTEGO: Thank you.

MR. BALDWIN, JR.: Your Honor, we would next like to offer Plaintiff's Exhibit No. 30. It's the Commissioner's 1980 Standard Mortality Tables, and I would like to read from those, if we may?

THE COURT: You may.

MR. BALDWIN, JR.: The life expectancy of a 38 year old male is 42.15 years. We would offer this at this time, Your Honor.

THE COURT: It will be admitted.

MR. BALDWIN, SR.: Your Honor, we have one other document, Plaintiff's Exhibit 20 Y which is a document furnished to us by Dow Chemical, which shows the label

registered with the FDA.

MR. ORTEGO: May I just see it?

(Mr. Baldwin tenders document to Mr. Ortego and returns.)

MR. ORTEGO: Thanks. Judge, the only objection I have at this point in time is that I don't know if this is the correct label for the correct years in question. They seem to be late, but subject to that connection, I have no objection.

THE COURT: It will be admitted.

MR. BALDWIN, SR.: Dr. Teitelbaum, please, Your Honor.

(The Witness is sworn.)

MR. BALDWIN, SR.: May I proceed?

THE COURT: You may proceed.

DR. DANIEL T. TEITELBAUM

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BALDWIN, SR.:

Q Would you give us your name, please, sir?

A Yes. It's Daniel T. Teitelbaum. T-e-i-t-e-l-b-a-u-m.

Q And could you tell us what your business or profession is?

A I am a physician.

Q And where do you practice?

A My practice is in Denver, Colorado, at Denver Clinic

Medical Centers. For this academic year, I am Director of the Israel National Poison Information Center, and professor of medicine at the Technalin (pho) Medical School in Haifa, Israel.

Q Could you tell us, Doctor, your professional -- first of all, what type medicine do you practice?

A I am a toxicologist.

Q Are you also an M.D.?

A Yes. I am an M.D. I had training in internal medicine, and following that I did specialty training in toxicology, which is the part of medicine that deals with poisons; and that's the area I practice in now.

Q We will come to that in more general, but would that also embrace herbicides?

A Yes, it would.

Q And what, if you can tell us some of your professional experience that qualifies you as a clinical -- in clinical toxicology?

A Yes. After I did my internship and my residency in Internal Medicine, I did a fellowship at the University of Colorado Medical Center in Toxicology. A fellowship is a postgraduate period of training in which the physician works specifically in the area of his major interest. And following that I became a full-time faculty member at the University of Colorado and ran the Poison Control Center

in Colorado, and also the Physicians Poison Consultation Service in Colorado, as well as the Emergency Service at the University of Colorado Medical Center.

Q How long have you been qualified as a toxicologist?

A In 1975 I first was Board certified and then recertified in 1976.

Q Do you consult with any bodies or commissions?

A Yes. I have been a consultant to many different agencies, both at the state and the federal level. I have been a consultant to the United States Food & Drug Administration. During this past year I have been a consultant to the United States Department of Labor, the Occupational Safety & Health Administration. I have been on the Colorado State Pesticide Advisory Committee and the Poison Control Committee and the Emergency Services Committee, and so on.

Q Have you consulted with industry?

A Yes, I have, extensively. During this past year, I have consulted with Intel (pho) Corporation, a national semiconductor company, on handling of poisonous materials in their work places. In the past, I have consulted with many other companies -- IBM and Coors. Not in the beer industry, in their porcelain factory, and Xerox, and Dresser Industries -- many other industries.

Q Are you a lecturer in your field?

A Yes.

Q In what subjects have you lectured and taught on?

A Well, this year, as I said, I am living in Israel as Professor of Medicine and Director of the Israel National Poison Information Center, and I am giving a course in Occupational Toxicology in the engineering and the medical schools. In addition to that, I have given extensive lectures, many on subjects in toxicology, ranging from problems in environmental poisoning to the management of patients who have been acutely poisoned by various kinds of drugs and other toxins.

Q Would that include carcinogens?

A. It certainly would.

Q What experience have you had in the field of biomedical and occupational-environmental toxicology?

A Well, I have both investigated problems in environmental toxicology, that is to say problems where people living in the area of a particular kind of exposure, perhaps near a toxic waste site, a dump, a water pollution problem, where there was some question as to whether people were ill because of the materials which are in the water or in the dump and so on. I have done that kind of work. I have done work on investigation and solution of problems within factories where people have been exposed to various kinds of poisons or dangerous materials, and we have outbreaks of single cases of illness. And I have also looked at specific problems

of such things as lead poisoning both in the environment and individuals and so on.

Q Does your specialty, Doctor, include the diagnosis and evaluation of illnesses resulting from exposure to various toxins --

A Yes, it does.

Q -- by the human being?

A It certainly does. I see about 1,500 patients per year myself. Our department at Denver Clinic sees about 5,000 patients per year who come to the clinic because of problems associated with some material or some substance with which they may have been exposed.

Q Do you do any work in industrial hygiene?

A Yes, I have. I ran an industrial hygiene laboratory for about eight years. Industrial hygiene, of course, is the supporting science for the medical diagnosis just the way you use a laboratory in the hospital to find out what bug somebody's got. The industrial hygienist provides that kind of information for the physician who is trying to treat a toxic disease. And I have done both the field investigation and run the laboratory services involved with doing that kind of work.

Q And are you affiliated with any industrial hygiene body, like the AIHA?

A Yes. I am a full member of the American Industrial

Hygiene Association.

Q Now tell us briefly, Doctor, what your academic affiliations are.

A Yes. I am currently Professor of Medicine, as I indicated to you, at the Medical School in Haifa, Israel on a one-year appointment. My usual academic appointments are as Professor of Environmental Sciences in the Department of Environmental Sciences at the Colorado School of Mines where I teach the engineering graduate students in the courses on occupational and environmental toxicology; and I am Associate Professor -- Associate Clinical Professor of Preventive Medicine at the University of Colorado Medical Center.

Q Are you a consultant at any hospital?

A Yes. I am on the consulting staff of most of the large hospitals in Denver, including Denver General Hospital, which is the city hospital; St. Joseph's Hospital, Children's Hospital, Rose Memorial Hospital, and so on.

Q Are you a consultant in clinical toxicolgy at the Denver General?

A Yes, I am. At the Poison Control Center, I am senior consultant in toxicology.

Q And you teach a medical course, Preventive Medicine?

A Yes, I do.

Q And where is that?

A At the University of Colorado Medical Center.

Q Is that the medical school?

A That surely is.

Q That's medical students you teach?

A Yes.

Q Tell us, then, basically what type degrees you have obtained, beginning with your Bachelor's Degree?

A Well, I received the Degree of Bachelor of Arts from Hamilton College in 1956. I then received the Degree of Master of Hebrew Letters & Rabbi from the Jewish Theological Seminary of America, and then the Degree of Doctor of Medicine from the Albert Einstein College of Medicine in New York City in 1964.

Q And where did you do your intern?

A At Montefiore Hospital. I had better spell that. M-o-n-t-e-f-i-o-r-e, Montefiore Hospital, which is one of Albert Einstein's teaching hospitals in New York City.

Q And your residency?

A At the University of Colorado Medical Center.

Q And what was that done in?

A Internal medicine.

Q And what, briefly, is internal medicine?

A Internal medicine is the branch of medicine which deals with the diagnosis and management of diseases of the internal organs.

Q Would that include lymphomas?

A Yes, it surely would.

Q And are you a fellow in medicine and toxicology?

A I was fellow in medicine and toxicology at the University, but I have advanced now to an associate professor at the University.

Q All right.

A They let me get promoted. I have lived long enough.

Q You are a full professor, then, at the --

A I am an associate professor at the medical school, and am a full professor at the School of Mines.

Q All right. Now tell us then briefly what committees and bodies you have served on in your profession?

A Well, I have been on most of the committees of the American Academy of Clinical Toxicology -- the Education Committee, the Standards Committee, the Certification Committee. I have been on the various standards committees of the American Association of Poison Control Centers. I have served on the United States Food & Drug Administration Advisory Committee on Diagnostic Products and Toxicology. I have served on the Colorado State Pesticide Advisory Committee and so on.

Q Do you belong to any societies connected with your profession?

A Yes, I do. I am a member of the American Medical

Association and of the county and state medical societies, and in addition, I am a member of most of the societies in toxicology, such as the American Academy of Clinical Toxicology, the American College of Clinical Pharmacology, the Forensic Science Society, the American Industrial Hygiene Association, and so on.

Q Have you been chairman of any committee or committees?

A Yes. I've been chairman of most of the committees I've served on at one time or another.

Q Would that include the Therapeutics Committee of the American Academy of Clinical Toxicologists?

A Yes, I did.

Q Now what -- have you received any honors, Doctor?

A Yes, I have. I was World Health Organization Traveling Fellow in Toxicology, and I received the Founder's Award from the American Academy of Clinical Toxicology; and was also a student fellow at the Jacks Memorial Laboratory in 1952 and 1953, and won a few academic prizes along the way.

Q Are you board certified?

A In toxicology, yes.

Q And what does that mean?

A Well, the American Board of Toxicology is an independent body which examines physicians who claim to have special skills in toxicology; and after taking a written and oral examination and having appropriate qualifications, if you

pass the examinations, then you are considered board certified.

Q How many toxicologists in the United States are Board certified?

A About 140 now.

Q Is that a subdivision of the American Medical Association?

A No, it's not, and it's not a part of the American Board of Medical Specialties yet because there aren't 600 members. We'll have to have 600 Board certified members before it will be a part of that organization.

Q. Are you a fellow in any institute or groups?

A Yes, I am a Fellow of the American College of Clinical Pharmacology, and I am also a Fellow of the American Academy of Clinical Toxicology.

Q Have you written publications, Doctor?

A Yes, about 38 or 39 publications in toxicology.

Q And have they been published in your field?

A Yes, they have.

Q In various journals?

A Yes.

Q Have you put together teaching aids or video tapes?

A Yes, I have.

Q If so, describe very briefly.

A I have made quite a series of video tapes teaching

various kinds of people, ranging from video tapes dealing with the clinical diagnosis of asbestoses to the management of acute poisoning, which I made for Bio-Science Laboratories when it was a Dow subsidiary, and a number of other teaching video tapes for various purposes -- Xerox Corporation, and so on.

Q Now, Doctor, at my request have you investigated the case involving the death of Mr. James Greenhill?

A Yes, I have.

Q You are a licensed physician? I failed to ask that.

A Yes, I surely am.

Q And before I get into Mr. Greenhill's case, have you had experience in evaluating patients with various types and forms of lymphomas?

A Yes, I have.

Q And what experience has that been?

A Well, earlier in my career I had experience both evaluating and treating patients, but over the last, oh, probably eight to ten years I have not been treating lymphoma patients but I see lymphoma patients regularly where the question is asked whether there may or may not have been an environmental or occupational cause for the lymphoma.

Q All right. How many patients would you say you have seen?

Q All right.

MR. BALDWIN, SR.: We will offer that into evidence, Your Honor, Plaintiff's Exhibit 1 D.

THE COURT: Any objection?

MR. ORTEGO: No objection, Your Honor.

THE COURT: It will be admitted.

(Mr. Baldwin, Sr. continuing:)

Q What is 1 E?

A 1 E is a further report from the same group after the tissue blocks which we received from Dr. Stolz's office were recut, restained, and looked at again now by two different sets of pathologists, one at St. Joseph's Hospital in Denver and one again in our group. And 1 E is the report of our group's re-consideration of the diagnosis based on the new slides which had been prepared.

Q And what did they say?

A The diagnosis on the new slides was "malignant lymphoma, see comment." And the comment was "I now believe that my original diagnosis of small cell lymphoma was incorrect after reviewing the additional material. I am unable to find a cell that I would accept as a Reed-Sternberg cell, and thus cannot make a definitive diagnosis of Hodgkin's disease. I believe, however, that the type of infiltrate and histologic progression of the disease with its various patterns are most compatible with a diagnosis

of Hodgkin's disease and are less compatible with a diagnosis of non-Hodgkin's lymphoma. I do not believe that it is possible to accurately subclassify the process, but believe that the differential includes lymphocyte predominance and nodular sclerosing subtypes."

Q So is he saying that he's changing his earlier opinion, but he is not saying it is Hodgkin's disease?

THE COURT: Just a minute.

MR. ORTEGO: Judge, I would just ask that the -- I know Dr. Teitelbaum can read what he wants, but there is another paragraph that follows that I think when taken out of context it would be unfair to read it this way. If he can just finish reading the remainder of that section, I think that would be appropriate.

MR. BALDWIN, SR.: I have no objection to that.

THE COURT: Read the rest of it, Doctor.

A "I took the liberty to show the sections to Dr. Henry Chu, hematopathologist at the University of Colorado School of Medicine. He was also unable to classify the lymphoma, but favored Hodgkin's disease. Drs. Alt and Meyer have reviewed the sections with both now favoring a diagnosis of Hodgkin's disease, probable nodular sclerosing variant."

Q And I was coming to that, Doctor, before he said that. Did they also have Dr. Chu look at these sections?

A Yes, they did.

Q And Dr. Alt and Dr. Meyer?

A Right.

Q And none of them were able to find this diagnostic Reed-Sternberg cell, were they?

A That's right.

MR. BALDWIN, SR.: We offer that into evidence as Plaintiff's Exhibit 1 E.

MR. ORTEGO: The reported date? I just want to make sure, Mr. Baldwin.

MR. BALDWIN, SR.: 6-12-84.

MR. ORTEGO: No objection.

THE COURT: It will be admitted.

(Mr. Baldwin, Sr. continuing:)

Q What is 1 F, Doctor?

A 1 F is the report of Dr. Tim Morgan, who is pathologist at St. Joseph Hospital. It's on the stationery of the Denver Metropolitan Pathology Consultants, P.C., and it is his report of June 5, 1987.

Q And what does he say?

A Dr. Morgan says: "I concur with Dr. Stolz' interpretation and that of his outside consultant that these slides represent a form of Hodgkin's disease, best subtyped as lymphocyte predominant, diffuse (so-called L and H variant). In my opinion, the only reasonable differential consideration would be another form of Hodgkin's disease

such as a peculiar variant of nodular sclerosing. I strongly favor the former interpretation. Diagnosis: Left cervical lymph node (excisional biopsy): Hodgkin's disease, lymphocyte predominant, diffuse."

Q Did he find the Reed-Sternberg cell, or did he mention it?

A He did not.

Q Now back to 1 E when the doctor said that he favored a diagnosis -- he says: "I thus cannot make a definitive diagnosis of Hodgkin's disease," and says "it's compatible with Hodgkin's disease, is that a definite diagnosis or is that -- what is that in the medical community?

MR. ORTEGO: I am going to object to the form of the question. The document speaks for itself.

THE COURT: I sustain the objection in the manner in which the question is asked.

MR. BALDWIN, SR.: All right.

(Mr. Baldwin, Sr. continuing:)

Q What do you mean as a doctor when you or some other -- when you read a statement by another doctor that says the diagnosis is consistent with, for example, Hodgkin's disease, lymphoma, or any other condition?

MR. ORTEGO: Objection to the form of the question, leading and compound.

THE COURT: Overruled.

A I interpret that to mean that the physician is not able to find those elements which he requires in order to make a clear diagnosis. And he says, "Well, in the absence of the required criteria, the best second guess is this."

Q All right, now what --

MR. ORTEGO: Just continue my objection in that he is now interpreting what he thinks the doctors mean in their writing, and it does call for speculation.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q 1 G, would you look at that, Doctor?

A. I am sorry, I don't have a copy of 1 G.

Q I happen to have one.

A Thank you.

Q Would you tell us what 1 G is?

A Yes. 1 G is a Pathology Report by Dr. Girkin, dated 7-7-80. It's on the stationery of the Pathology Report of the Sparks Regional Medical Center. The diagnosis is "Lymph node, changes consistent with recurrent Hodgkin's disease." The comment is: "The lymph node shows all of the necessary changes for a diagnosis of Hodgkin's disease except for the presence of Reed-Sternberg cells. The extensive scarring of the node is presumed to represent treatment changes. The lymph node used to establish the diagnosis originally shows a much greater component of well differentiated lymphocytes

and a lesser component of histiocytes. However, this may be due to treatment of the disease."

Q So that was no -- this report noted no Reed-Sternberg cells?

A That's correct.

Q And if it is the opinion of you or any other doctor that you can't make the diagnosis of Hodgkin's disease without a Reed-Sternberg cell, you couldn't make it with this report, could you?

MR. ORTEGO: I am going to object to the form of the question. The report says: "Diagnosis: Hodgkin's disease." Now he is asking him to speculate again. I think the report speaks for itself.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Can you, Doctor, with that criteria?

A I think the report says "consistent with Hodgkin's disease." And in the terms that we've discussed, I would agree with that. It's consistent, that without the findings that are characteristic, he can't make the absolute statement.

THE COURT: Did you offer 1 F into evidence?

MR. BALDWIN, SR.: Yes, Your Honor. I will offer 1 A through G at this time, just to make sure that we have gotten them all in.

MR. ORTEGO: Can I just look to see if I am all

caught up with your numbers, Mr. Baldwin, if you don't mind?

(Brief pause; Mr. Ortego examing exhibits.)

THE COURT: They will all be admitted.

MR. ORTEGO: Fine, Your Honor, no objection.

(Brief off-the-record discussion at side bar between Mr. Ortego and Mr. Baldwin.)

(Mr. Baldwin, Sr. continuing:)

Q All right, now, Doctor, I believe we have gone through all of the Pathology Reports, I hope so. Can you as a doctor, based on your view of these medical records and these Pathology Reports, make a diagnosis of Mr. Greenhill's condition?

MR. ORTEGO: I am going to object, Your Honor. I don't think there is a foundation, and I don't think he has looked at the slides; and I think the other documents speak for themselves, and there is no foundation.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Before you answer that, Doctor, I will ask you have you looked at the slides?

A I have.

Q Go ahead, sir.

A In my opinion, the diagnosis would be a malignant lymphoma most consistent with Hodgkin's disease.

Q Could you make a definite diagnosis of Hodgkin's disease?

A I wouldn't make a diagnosis any stronger than that at this point.

Q Now let's talk generally about, very briefly, about 2, 4-D and picloram. You've told us you thought 2, 4-D was a hazardous substance?

A Yes.

Q Is it hazardous to man?

A Yes.

Q In what respect?

A Well, it's hazardous to man to the degree that in large doses it can kill. There are cases of ingestion of large amounts of 2, 4-D which have resulted in fatalities, and in much smaller doses it's capable of producing skin rash, it's capable of producing other kinds of disturbances, and, in my view, it's very likely carcinogenic.

Q Is it -- is it capable of producing neurological disorders?

A It certainly is.

Q And you say it was carcinogenic?

A That's right.

MR. ORTEGO: Objection to the mischaracterization. He said "likely carcinogenic."

(Mr. Baldwin, Sr. continuing:)

Q Do you have an opinion as to whether or not --

THE COURT: Just a moment. What is your objection?

MR. ORTEGO: Objection to the phrase in Mr. Baldwin's question because he said -- it was misphrased -- mischaracterizing the witness's answer.

MR. BALDWIN, SR.: I will withdraw the question, Your Honor. May I ask another one?

THE COURT: All right, rephrase it.

(Mr. Baldwin, Sr. continuing:)

Q Do you have an opinion, Doctor, as to whether or not 2, 4-D is carcinogenic?

A I believe that it is carcinogenic in animals, and it's a likely human carcinogen.

Q All right. The same questions about picloram, do you have an opinion whether it is harmful to humans?

A Harmful, yes, I think it is harmful.

Q All right, is it a hazardous substance?

A I think so, yes.

Q Should picloram be used with caution?

A Yes.

Q Should 2, 4-D be used with caution?

A Yes.

Q What about Tordon 101?

A Yes.

Q Now, Doctor, I want to ask you about some of the literature. In your field as a medical doctor do you rely on treatises written by others?

A Yes.

Q Periodicals?

A Yes.

Q Reports that are published?

A Yes, depending on the quality of the report, of course.

Q Medical journals, medical articles?

A Yes.

Q Textbooks?

A Yes.

Q And in connection with the subject here, the 2, 4-D, have you reviewed the literature and the periodicals like I have just described to you?

A Yes, I have.

Q First, then, let's talk about some of that. Would you -- have you reviewed a study done for the State of California?

A Yes, I have.

Q And would you give us the title of that?

A Yes, I will. It's called "2, 4 Dichlorophenoxyacetic Acid," and then in parens under that "(2, 4-D) Evaluation of Human Health Hazards."

Q All right. Could you tell us what that report found?

A Yes. Basically, the report is a report which was compiled by the Department of Health in the State of California which reviewed all of the literature that they could find on the subject of 2, 4-D prior to their findings.

They concluded that the material was hazardous, that it caused neurological disease, and that the evidence concerning the causation of cancer was such that there was reason to conclude that it might very well be a carcinogen. There was not sufficient evidence to say that it was not a carcinogen, and that therefore caution had to be used in handling the material.

They further concluded that the labels which were then in use in California were inadequate and needed revision.

Q All right. Now let's go back over that in a little bit more detail, if you would. Would you describe the neurological findings that the report describes?

A Yes.

MR. ORTEGO: I object. Again, I don't think Dr. Teitelbaum is a neurologist, and I don't think that Mr. Baldwin is claiming that Mr. Greenhill had anything wrong with him neurologically. Not that I'd say that it is true that these allegations are correct, but I object to this line of the question. What is the relevance?

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Go ahead.

A The report begins by reviewing the literature which goes all the way back to the 1950s, 1959, the first cases that were reported of neurological damage due to 2, 4-D.

There were altogether approximately six or seven reports, and a subsequent case was actually examined by one of the members of the panel that wrote the report as a current case in California at the time this report was written and -- excuse me -- they concluded that 2, 4-D did cause the neurological damage and that the route of exposure was primarily through the skin, and that it was necessary to label the product, warning that this was a risk with 2, 4-D.

Q Did -- tell the Jury what you mean when you use the term "neurological damage"?

A Well, in this case the kind of neurological damage, the damage to the nervous system that occurred, is called a peripheral neuropathy. A peripheral neuropathy is a disorder of the nerves which are outside the brain or the spinal cord, and they are the nerves that go to the skin or to the periphery that help you to sense what's going on, cold, warm, feeling; and also the nerves which go to muscles and control motion.

Q Did this report describe cases of paralysis?

A Yes, it did.

Q And did it describe cases of severe nerve damage?

A Yes. And -- as well, that's correct.

Q All right. Now, could you turn to page -- you mentioned, let me see if I can find that -- Page 19 of the report.

MR. ORTEGO: Mr. Baldwin, what report is that?

D-1501

Could I see the number?

MR. BALDWIN: It's -- (tendering to Mr. Ortego).

MR. ORTEGO: Thank you, sir.

MR. BALDWIN: It's 20 W.

(Mr. Baldwin, Sr. continuing:)

Q And would you just read the first paragraph on Page 19 to the Jury?

A It says: "Representative current label precautions are shown below -- as shown below are deemed insufficient to convey the importance of these messages to workers. They do not include a warning about delayed neurotoxicity. A recommended label warning is appended below."

Q And is this a Dow label that they have described?

A Well, it's a typical label for that period. It's similar to the Dow label that was used in that period of time.

Q All right.

MR. ORTEGO: Judge, I am going to object. If it criticizes the label and it's not the Dow label and it's similar, what relevance does that have, and what fairness is that?

THE COURT: I overrule the objection.

(Mr. Baldwin, Sr. continuing:)

Q Now, turn to Page 32, if you would, please, and there they talk about conclusions and recommendations?

D-1502

A That's right.

Q And would you read paragraph three of that?

A "Products containing 2, 4-D should be labeled to warn users of the herbicide's potential for causing neurotoxicity and how to protect against it. Present labels are inadequate. Educational information should be provided for anyone who works with this substance."

Q Would you read, Doctor, the conclusions and recommendations in that first paragraph? I want to ask you a question about it.

MR. ORTEGO: What page is that, Mr. Baldwin?

MR. BALDWIN: Page 32.

A It says: "Exposure to 2, 4-D has caused peripheral neuropathy. Additional cases of peripheral neuropathy may not have been correctly diagnosed. Animal studies suggest that potential risk of cancer and possible low-level hazard of birth defect in humans, though the degree of risk to humans following exposure to 2, 4-D cannot now be estimated. The following recommendations are made as minimal precautions to protect the public health."

Q What do they mean by peripheral neuropathy?

A Peripheral neuropathy is, as I've explained it, a -- it's damage. It's an illness of the nerves outside the central nervous system.

Q And then the next paragraph?

A I'm sorry, I don't know which.

Q Paragraph one.

A Current work practices are inadequate to protect against potential neurotoxicity; that it should be reviewed and corrected, is what they say.

Q And then paragraph two, the final thing I'll ask you about that.

A "The scientific data are sufficiently suggestive of a carcinogenic effect, and demonstrate a weak teratogenic effect, that 2, 4-D should be restricted to areas in which human exposure can be kept to the minimum. Contamination of open water must be monitored and prevented. Broadcast methods of application that could directly expose the general population should be strongly discouraged. Greater consideration must be given to alternate methods for removing unwanted plants."

Q Now the word "teratogenic effect," what does that mean?

A Teratogenic means that it causes or may cause birth defects.

MR. ORTEGO: Judge, I am going to object again to, first of all, I disagree with the study, the way it is being paraphrased; but what relevance does this have to this lawsuit if it's talking about birth defects?

THE COURT: Overruled. Let's take a fifteen minute break. Be back in the jury box at ten thirty.

(Recess at 10:17 a.m., until 10:30 a.m.. Open court, jury and all parties present.)

THE COURT: Please be seated. You may continue.

MR. BALDWIN, SR.: Your Honor, before we get back into the examination of Dr. Teitelbaum, we have now got confirmed data on the medical bills and the funeral bills, and I would just like to read that amount to the Jury.

MR. ORTEGO: Judge, I spoke with Mr. Baldwin about this, and even though there aren't any records, I just understand he has verified it and I will just take his word for it.

THE COURT: All right.

MR. ORTEGO: And for that purpose I will let him read it in.

THE COURT: Go ahead.

MR. BALDWIN: The medical bills that we have been able to verify to date are $62,497.60. The funeral bills were $2,298.00.

THE COURT: That will be admitted.

DIRECT EXAMINATION CONTINUES

BY MR. BALDWIN, SR.:

Q Now, Doctor, you've talked about page 19 of the study done for the State of California, and I have a blow-up of that page so we can all talk about it at the same time. It shows the typical -- well, I'll ask you what it shows?

A It's a page out of the text of this report, and it shows a speciman label which contains the typical information that appeared on 2, 4-D products at that time.

Q Doctor, were you familiar with in a general way, or any other way, with the Dow label on their Tordon 101 during the time frame 1975 through 1979?

A Yes.

Q And I hand you what is Plaintiffs' Exhibit 20 Y and let you look at it.

A (Examining)

Q Does that typically convey the information that was on the Dow label, as you understood it, during the time frame we talked about?

MR. ORTEGO: Judge, I am going to object. I don't want a general, but specifically does he recall whether that's the language for the particular year? I think that would be an appropriate question.

THE COURT: Rephrase your question.

(Mr. Baldwin, Sr. continuing:)

Q All right, I'll just go back for a little bit, Doctor. You have told us you are familiar in a general way with the Dow label for Tordon 101 between -- during the time frame 1975 to 1979?

A That's correct.

Q And do you profess to be able to tell the exact language

here today of the label?

A No.

Q Do you know generally what type warnings those labels contained?

A Yes.

Q And do you know what type hazards or illnesses they warned against?

A Yes.

Q And do you know what type hazard or illness they did not warn against?

A Yes.

Q And is the Dow label in front of you now generally of the type that you were familiar with?

A Yes.

Q Now, is that label or not similar to the one on the board there on 19?

A It's generally similar, yes.

Q And what does that label warn against?

A Which label, this one or --

Q Yes, that one.

A It warns about -- that it can be generally harmful if swallowed; it warns that it can damage your eyes and your skin, and it warns to avoid contact with skin or eyes, and to keep your clothing away from it, and then to wash thoroughly afterwards.

Q Did you ever see a Dow label that warned that you should wear protective clothing?

A No.

Q Does that one?

A Other than eye protection which is on this.

Q I am talking about protective clothing?

A No.

Q Did you ever see a Dow label that suggested that it would cause serious neurological problems?

A No.

Q Does that one?

A No.

Q Did you ever see a Dow label that suggested that it might cause cancer?

A No.

Q Does that one?

A No.

Q Did you ever see a Dow label that suggested that it might kill a person --

A No.

Q -- or cause death?

A Well, it says "harmful if swallowed," but it doesn't say "fatal." So it doesn't.

Q And this is a blowup of Page 32, and does this paragraph 3, the one that you read, talk about these labels

being inadequate?

A Yes.

Q "Present labels are inadequate"?

A That's what it says.

Q Is that referring to the type label here as shown on Page 19?

A Yes.

Q Now, Doctor, I want to go over some other literature with you, please. Do you have -- well, these will not be offered into evidence, so we will just refer to them by title. For our purposes, Doctor, I think we can coordinate it if I just use an exhibit number that we have on there. Do you have before you 16 A?

A Yes.

MR. ORTEGO: Mr. Baldwin, can I just see what you have?

(Mr. Baldwin tenders to Mr. Ortego for examination.)

MR. ORTEGO: Thank you.

THE COURT: Mr. Baldwin, you numbered number Page 19 and Page 32 that's on the board?

MR. BALDWIN, SR.: Yes.

THE COURT: Now I don't think you ever delineated the number on what the Doctor was looking at here at the table.

MR. BALDWIN, SR.: Thank you, Your Honor. We

were referring to what's been marked "Plaintiffs' Exhibits No. 20 W."

THE COURT: All right.

(Mr. Baldwin, Sr. continuing:)

Q Now would you look at 16 A, please, sir, and tell us what that is?

A 16 A is the article by Goldstein from 1959 which described the peripheral nerve damage after 2, 4-D exposure.

Q And what date is that?

A It was in the Journal of the American Medical Association November 7, 1959.

Q. And what does it say about peripheral nerve damage?

A It says that a group of three cases were described. These were patients who were exposed to 2, 4-D on the skin, and they developed severe neurological damage, including -- up to and including paralysis, and that this improved somewhat in some of the patients but persisted in others. And their conclusion was that it was caused by the 2, 4-D.

MR. ORTEGO: Your Honor, I am just going to continue my objection against anything with neurological damage. There is no claim in this lawsuit that neurological damage is involved in any way whatsoever. It's just Hodgkin's disease or forms of cancer, and I don't see how this paper in 1959 is relevant, and I would like to object.

THE COURT: Overruled.

MR. ORTEGO: Thank you, sir.

(Mr. Baldwin, Sr. continuing:)

Q Is that a paper that talked about the severe paralysis that was described in the earlier California report?

A Yes.

Q I am going to call the "Hazard Report."

A Okay.

Q And is there any statement about the cause of the neurological damage?

A Yes. It says: "There was little doubt that the neurological damage was done by the percutaneous," through the skin, "absorbtion of spilled 2, 4-D."

Q And do you have an opinion as to whether or not Mr. Greenhill, based on your history of his exposure and your review of the medical records and your review of his deposition, suffered a percutaneous absorbtion of 2, 4-D?

A I have an opinion about that.

Q What is your opinion?

A My opinion is that he did. He describes the wetting of his pants' leg on the left side, and the irritation of his skin on that side, and he describes getting it on his skin, and I believe he did have percutaneous absorbtion.

Q What does percutaneous mean?

A Through the skin.

Q Cutaneous means skin?

A Yes.

Q So that would be -- would or not that be the same mechanism of exposure as described in this paper?

A Yes.

MR. ORTEGO: Judge, I am going to object. The mechanism -- they are talking about neurological damage and the possible exposure to the skin of 2, 4-D. There's nothing talking about his exposure. Mr. Greenhill doesn't have a neurological disorder. Exposure is a general term which can be specifically applied. He is just taking out the term of what exposure means out of this document and --

THE COURT: Overruled.

MR. ORTEGO: Thank you, Your Honor.

(Mr. Baldwin, Sr. continuing:)

Q Now the next paper, 16 B --

THE COURT: Take the Jury out, please, just a moment, and the attorneys approach the bench. Well, that isn't necessary since they are going to be out.

(Jury out at 10:40 a.m; open court continues, jury not present; the witness remains in courtroom.)

THE COURT: Is the Plaintiff claiming that the deceased suffered any neurological damage?

MR. BALDWIN, SR.: Your Honor, the medical records show that he did. The Plaintiff claims that he died from lymphoma. Now, I think the lymphoma -- he had neurological

damage. Whether it was a result of lymphoma or 2, 4-D or what, that's, I guess, for the Jury to decide. We are offering these documents on the basis that this chemical is harmful. On the question of causation, they are taking the position that their chemical didn't do it -- that it can't cause these problems that we are talking about. And we are offering this testimony on the issue both as to causation and as to whether the product is defective, and also as to whether the warning was adequate. The law doesn't require that they warn of a specific hazard. All the law requires is that they give an adequate warning.

So we are offering this on the question to show that Dow knew or should have known that it had these hazardous and dangerous propensities, starting out with neuropathy.

THE COURT: All right.

MR. ORTEGO: Judge, can I briefly respond?

THE COURT: Yes.

MR. ORTEGO: There is no evidence that the Plaintiff had neuropathy. As a matter of fact, Your Honor, when we asked all the experts what the man suffered from, including Dr. Teitelbaum, including his previous other expert, Dr. Hay, no one ever mentioned peripheral neuropathy.

I served a specific interrogatory asking what the claims and allegations were, and peripheral neuropathy was

A The Journal of the American Medical Association.

Q Tell the Jury what the Journal of the American Medical Association is.

A It's a weekly journal put out by the American Medical Association. It's a peer review journal which is distributed to all members of the AMA, plus the many libraries throughout the world.

Q Does virtually every doctor in the United States get a copy of that every week?

A I am glad you didn't say read it. They get it. Whether they read it or not, I don't know.

Q All right. Now all of these -- we are going to be talking about some more medical articles, and I'll ask you this one general question to save time. Are all of these articles that we are discussing and going to discuss the type peer review articles and critical articles that you as a scientist and as a medical doctor would consider in your practice and rely on?

A Yes.

Q Now, looking at 16 B very quickly, what is that, Doctor?

A It's an article that appeared in 1967 in Lancet by Dr. Milham, who was associate professor of epidemiology at that time at the University of Hawaii. He pointed out that he did a study first in 1967 and then repeated it and

did some further depth, and the title of the article is "Hodgkin's Disease in Woodworkers," found that there was an increased risk of Hodgkin's disease if you worked with wood.

Q And what is Lancet?

A It's a journal published in England, a medical journal.

Q Now what is the significance of that finding?

A This was the first article that pointed out that Hodgkin's disease and some environmental characteristic of wood was associated. There have been a number of studies which have followed that, all of which have been consistent in finding the same thing.

Q Now, Lancet is a widely read medical journal in Britain, or is it an obscure journal?

A No.

Q Or how would you characterize it?

A It's widely read throughout the world.

Q And is it given great weight and authority in the medical community, or little weight?

A I think it is a highly respected journal.

Q 16 C?

A 16 C is an article by Dr. Grufferman published in the Journal of the National Cancer Institute, Volume 57, November 1976. Dr. Grufferman did a study of occupations and Hodgkin's disease, and he said "as in previous studies,

woodworkers have an excess risk of Hodgkin's disease, but the reason is obscure."

Q What is the significance of that article?

A Well, it's again the same finding that Dr. Milham made that there is some environmental factors associated with working with wood, and one could say it's either the wood itself, something that's carried on the wood like a chemical residue or some bacteria that's associated with the wood; but whatever it is, wood and Hodgkin's disease are positively associated. Working with wood seems to cause Hodgkin's disease.

Q And what does that mean to you as a scientist?

A It means that this is a second supporting study which supports the two pieces of work Dr. Milham had done before, and others which have come since that time.

Q And do or not these studies suggest that Hodgkin's disease is caused by some outside agent?

A Yes.

Q Is that significant?

A Yes.

Q And why is wood significant in this study?

A Because Mr. Greenhill was a forestry employee working with the chemicals which are carried on the wood as residue.

MR. ORTEGO: I am going to object, Your Honor. This now calls for more speculation.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Now, would you tell us -- we have seen these articles, the examples of them. Here is one here that you just referred to as a medical article, an entire article in a journal. Now, is there such a thing in the medical community as abstracts of articles?

A There are abstracts published in many different journals, yes.

Q And what is meant by the term "abstract"?

A An abstract is a, per se, is a short statement like we used to write in elementary school of what a story is about. It's usually written by the author, and it summarizes the findings.

Q Do you read habitually abstracts?

A Yes, I read several journals which are just composed of abstracts every month.

Q Now, what is 16 D?

A 16 D is an abstract of an article by Magnusson that appeared in Hereditas, which is a journal dealing with genetics and heredity. It's been published for 87 years, approximately.

Q When did that article appear?

A In 1977.

Q And what's the title of the article?

A It's "Mutagenic Effects of Chlorinated Phenoxyacetic Acids and Drosophila Melanogaster."

Q And do we remember that chlorinated phenoxyacetic acids is 2, 4-D?

A Right. And Droso --

MR. ORTEGO: Objection, Your Honor. That's an improper classification. Form of the question.

THE COURT: Overruled.

A And Drosophila melanogaster is fruit flies that we all studied in high school.

Q And what's the significance of that article, Doctor?

A It says that when you expose fruit flies to chemicals like 2, 4-D and 2, 4-D, changes in the genetic material of these animals occurs, and substances which are mutagenic, or cause these changes, are likely to be substances which are cancer causing.

Q Now that's another term, mutagenic. What does that mean?

A Mutagenic means changing the genetic material, causing a change in the genes.

Q And this study suggested that it did that, that it had the capacity to change genes in the fruit flies?

A Right.

Q And is that significant to you as a medical doctor?

A Yes.

Q Why is that?

A It's significant because the fruit fly is a standard organism for testing for this type of change.

Q 16 E, could you tell us what that is?

A Yes, 16 E is a paper translated from Swedish by Dr. Lennart Hardell. It appeared in the Swedish medical journal, and I won't attempt to pronounce the Swedish; and it deals with the occurrence of soft-tissue sarcoma and exposure to phenoxy acids. Dr. Hardell observed seven cases of soft-tissue sacroma and found that there was a consistent history of working with phenoxyacetic acid derivatives in these seven workers. He reported them and said, "I think we need to do some serious epidemiologic study because here are seven cases that have that common factor."

Q What common factor?

A That they were exposed to 2, 4-D and like compounds -- 2, 4-D and 2, 4-D like compounds.

Q And had cancer?

A That's right.

Q Of the soft tissue?

A Right.

Q And when was that article published, Doctor?

A The article was published in 1977.

Q Is that a respected journal?

A It's the Swedish equivalent of the Journal of the

American Medical Association, and it is respected, yes.

Q Would it be fair to characterize that as the first clear evidence of a relationship between 2, 4-D and cancer?

MR. ORTEGO: Objection to the form of the question.

THE COURT: Overruled.

A I think it's the first study where a physician said pointedly, "I believe there is a relationship," yes.

Q And has Hardell come to be respected in the community, the medical community, on the question of the relationship between phenoxy acids and cancer, specifically of the lymph system?

A I certainly respect him, and I think he is generally respected. There are people who disagree with him.

Q Do you know anybody who has done more work than he has in that field?

A No, I do not.

Q What is the next article?

A The next one is 16 F, in my grouping, and that is the --

Q Just a minute before you read the -- just read the -- well, could you read that or just the title up here of that article?

A "Some Fumigants, the Herbicides 2, 4-D and 2, 4-5-T," is that what we are talking about?

Q No, IARC --

A IARC Monographs on the Evaluation of the Carcinogenic

Risk of Chemicals to Man."

Q And does it include herbicides 2, 4-D?

A Yes.

Q Now what is the IARC, Doctor?

A The IARC is the International Agency for Research Against Cancer. It's a world health organization body. It is based in Lions, France, and it has the specific responsibility of developing programs and policies internationally for the prevention and treatment of cancer.

Q And what's the date of that article?

A 1977.

Q And what, to you, is the significance of that article?

A Well, they review all of the literature which appeared concerning 2, 4-D prior to the 1977 date. They come to the conclusion that there are animal studies which support the occurrence of the toxic problems, for instance the neurological disorder and muscle disorder. They come to the conclusion that there are studies which suggest in animals that the material is cancer-causing in animals, that additional work needs to be done, and that the material is not at that time able to be classified clearly as a human carcinogen.

Q Is a neurological disorder a common sequela of a toxic problem?

A It certainly occurs very commonly. It's one of the things

we see most often.

Q All right, sir. Does it refer to any 1951 studies?

A Oh, yes, it goes all the way back to the 1945 work that the Japanese did on toxicity, work that was done in the United States in the early forties, and then work after that in the fifties.

Q And that's relating to the toxicity of 2, 4-D?

A That's right.

Q Going back to the forties?

A That's right, forties and fifties.

Q Now, 16 G.

MR. ORTEGO: Mr. Baldwin --

MR. BALDWIN, SR.: Yes?

MR. ORTEGO: I think you passed me.

(Mr. Baldwin, Sr. tendering exhibit to Mr. Ortego for examination.)

MR. ORTEGO: I'm sorry. Thank you.

(Mr. Baldwin, Sr. continuing:)

Q 16 G?

A 16 G and 16 U are the same thing. One is the abstract and the other is the actual article. It's a letter that Dr. Hardell and Dr. Axelson who are the two people in Sweden who have done most of the work on herbicides and cancer, to the editor of the Lancet discussing another article with appeared on the subject. Dr. Hardell discusses

A It's another study which indicates that there is an increased risk and that it likely does cause Hodgkin's disease.

Q 16 H, Doctor?

A 16 H is an abstract of a paper. I have read the entire paper as well. Dr. Zetterberg demonstrated that in yeast, yeast compounds, that 2, 4-D related compounds are capable of causing mutations, and that in order to test the system properly you have to make some adjustments in the pH in order to promote the absorbtion of the material into the cell. This is particularly important because the pH that he came to was 4.5. The pH of the skin is around 5, and when 2, 4-D gets on the skin it does penetrate the skin because of the fact that the skin pH is close to the ideal pH for penetration.

Q Does it refer to any effect it has on genes?

A Yes. It says that it was mutagenic. It causes gene changes in the yeast, as well.

Q 16 J?

A 16 J is a paper by Hardell, another one of his papers in the British Journal of Cancer. It's the same paper that we have a 16 K, and it's a paper which is a case control study, meaning that Dr. Hardell went back after he saw the seven cases of soft-tissue sarcoma and he did an epidemiologic study where he matched cases and people who didn't have the

I am not going to try and pronounce the name of -- Lakartidningen.

Q And is that the one --

A And I apologize for that. I can spell it if you'd like me to -- L-a-k-a-r-t-i-d-n-i-n-g-e-n.

Q Is that the one that Hardell published his paper in originally?

A Yes, that's right.

Q And what date was that?

A That was Volume 77, 1980.

Q All right. What is 16 N?

A 16 N is the English version of the same paper. It's called "Herbicide Exposure and Tumor Mortality." It appeared in the Scandinavian Journal of Work Environment & Health in 19 -- Volume 6, 1980. And he found -- again, he restates that he found the increased risk, and his final conclusions were the result being in agreement with animal data and other epidemiologic studies suggets the need for careful handling of amitrol and phenoxy acids as increasingly suspicious carcinogens.

Q And the next is 16 O? Could you tell us -- I'm sorry. Did we get the date and where that was published?

A We did. A 1980 Scandinavian Journal of Work Environment & Health.

Q I'm sorry, go ahead. 16 O?

A 16 O is a paper --

Q Start out with the date and where it was published.

A It's a paper which appeared in the Journal of Occupational Medicine, which is American Journal Volume 22, No. 6, June 1980. It's by Christer Edling and Sven Granstram. It's called "Causes of Death Among Lumberjacks, a Pilot Study." And again, this paper shows an increased proportional mortality ratio, an increased risk of death from cancer of the lymphatic and hematopoietic system, which would include the malignant lymphomas.

Q Now why is this paper significant, Doctor?

A Well, because this was a study that was done which showed that overall -- overall lumberjacks had less deaths than most people. They live a healthy life except for two things: 1) they die violent deaths, accidents and mayhem; and, 2) they die of cancers of the lymphatic and hematopoietic system at rates greater than normal people. So even through there was a health worker effect in that population, the malignant lymphomas were increased.

Q And what's the significance of the fact that they are lumberjacks?

A Well again, they were exposed to the 2, 4-D and amitrol. That's exactly what it says.

MR. ORTEGO: I am going to object, Your Honor, to

this speculation, unless he knows firsthand.

THE COURT: I sustain the objection.

(Mr. Baldwin, Sr. continuing:)

Q Well, did the article refer to that, Doctor?

A It refers to -- I'll have to give you the exact statement. "Particular attention was paid to deaths from certain types of cancer, as an exposure to phenoxyacetic acids of a great many lumberjacks in Sweden has occurred since the early 1950s, and therefore could be reflected in the increase of some of the relatively rare tumors as indicated in the former studies." That's on Page 403, the second paragraph.

MR. ORTEGO: I am going to object to the question again. I think, as Teitelbaum knows, there are many phenoxyacetic acids -- many. And in addition, that's just a line taken out of that study, I think out of context, and of course I will do it during my cross if I think it's necessary. But I object to these inferences in lumberjack studies that they were exposed to 2, 4-D. I think it calls for speculation, and it's not even my client's product. I think it's really calling for speculation and unfair at this point, Your Honor.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Is phenoxyacetic acid 2, 4-D?

A It includes 2, 4-D, as we indicated before.

Q The next article, 16 CC, British Journal of Cancer, 1981, Hardell and Eriksson?

A I'm sorry, I am out of order. I don't think I have a copy of that at this point in this packet.

Q I'll give you my copy (tendering).

A Okay. Okay, yes. This is a paper which appeared, the same group, Hardell, involved from Umea, in Sweden, published in 1981, in which he went ahead and did his further case reference study. He did a match case control study has been performed with cases of malignant lymphoma, including Hodgkin's disease and non-Hodgkin's lymphoma. The study included 169 cases and 338 controls, and the results indicate that exposure to phenoxyacetic acids, chlorophenols and organic solvents may be a causative factor malignant lymphoma. Combined exposure to these chemicals seems to increase the risk. Exposure to various other agents was not obviously different in cases and in controls.

Q Does that study then suggest a correlation between exposure to 2, 4-D and Hodgkin's disease?

A Yes.

Q Next is 16 P, and this is Edling, 1981?

A Yes, this is Edling's paper.

Q Again, it's in that --

A Yes, in the Swedish Journal, and it's in Volume 78, 1981.

And what he did here was to look at the possibility that some of the impurities in these chemicals, the chlorophenols, might have been responsible for the tumors; and he comes to the conclusion that whether there are impurities or not, the data supports the fact that the association is with the phenoxyacetic acids themselves.

Q And what are the phenoxyacetic acids?

A That's this group including 2, 4-D.

Q And next is 16 R is the British Medical Journal of Industrial Medical.

A The British Journal of --

Q. Let me start over. The British Journal of Industrial Medicine, 1981.

A That's correct. This is a paper by Eriksson and Hardell, Berg, Moller and Axelson. It's a review in 1981 of the 1977 data. They did a further study, and the conclusion of this study was that the further case reference study of soft-tissue sarcomas has now been performed to confirm the earlier findings and also obtain further information on the effects of phenoxy acids. The new investigation gave an increase of the same magnitude in the risk for soft tissue sarcomas after exposure to phenoxy acids or chlorophenols, but this risk also related to exposure to phenoxy acids free from impurities.

Q All right. Now if I understand it, the significance of

this is two-fold. One, it reaffirmed the earlier Hardell studies, is that correct?

A Yes.

MR. ORTEGO: I am going to object. It's leading and it's testifying. He can ask the expert questions and not tell him what he thinks it is.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Did it provide any new information, Doctor Teitelbaum?

A Yes. It provided the information that it appears the association is with the chemical itself, not with the contaminants in the chemical.

Q I believe we got the date, 1981, on that. The next one is 16 S. Could you tell us what that is, and the date of it and where it appeared?

A Yes. This is a paper which appeared in the Scandinavian Journal of Work Environment and Health in 1981 by Dr. Hardell. He reviews his study following criticism which other people have made of the study. He feels that he finds no investigational bias, and that based on the study as he reads it, an association between exposure to organic solvents and malignant lymphoma has been demonstrated, and in addition, an association between exposure to phenoxy acids or chlorophenols and soft tissue sarcoma and malignant lymphoma has been demonstrated.

Q When it says "phenoxy acids and chlorophenols," what is he referring to?

A The same group of chemicals, including 2, 4-D.

Q And did they balance this off with a group of people who had colon cancer?

A Yes, they did.

Q And why did they do that, and what's the significance of that?

A Well, that problem that was raised was whether people who have cancer when asked the question would be more likely to recall an event which they thought caused the cancer. And so they took two groups of people who had cancer, unrelated kinds of cancer, and they asked the same kinds of questions and found that in the group that had the malignant lymphomas and in the group who had the Hodgkin's disease and the soft-tissue Sarcomas, they still reported the exposure to the chlorophenoxy compounds and phenoxyacetic acid, whereas the people that had the colon cancer did not have that. So there was no association between colon cancer and phenoxy-acetic acid and there was between soft-tissue Sarcoma, Hodgkin's disease and malignant lymphoma in general.

Q So would I be correct in saying they picked a group of people that have cancer that's not likely to be associated with herbicide, colon cancer?

MR. ORTEGO: I am going to object to the form of the

question, Your Honor.

THE COURT: Overruled.

A They made the assumption that it wouldn't be, and that was what they were testing; and indeed, based on the experimental test, there was no relationship.

Q And the reason --

A I'm sorry. And there was a relationship with the other side.

Q And is the reason they did that is that a person who had colon cancer is less likely to go back and say, "Well, that was my herbicide thing," because there was no association between them?

A They didn't know that. They just said -- because people have said if you have cancer they are likely to recall something which you want to blame it on, they wanted to see if people who had colon cancer would also recall that they had herbicide exposure and blame it on that. They did not find that.

Q Okay, sir. Did that validate the Hardell Report or not?

A Yes.

THE COURT: Well, wasn't 16 S a Hardell Report?

MR. BALDWIN, SR.: There are a couple.

THE COURT: Scandinavian, in 1981?

MR. BALDWIN, SR.: There are three so far.

THE WITNESS: Yes, Your Honor.

MR. BALDWIN, SR.: 1979 there is one, and in 19 --

THE COURT: All right. Okay.

THE WITNESS: He is validating his prior study, Your Honor.

THE COURT: All right.

(Mr. Baldwin, Sr. continuing:)

Q 16 V, Doctor.

THE COURT: "V"?

MR. BALDWIN, SR.: "V" like in victory.

MR. ORTEGO: Let me catch up with you, Mr. Baldwin.

MR. BALDWIN, SR.: I'm sorry?

MR. ORTEGO: I just need to catch up with you. Where are you, here?

THE COURT: You are about to run out of letters.

MR. BALDWIN, SR.: I am about to run out of reports, thank goodness.

(Brief pause, Mr. Ortego comparing exhibits.)

Q While he is looking, can you tell us what that is?

A Yes, it's an article by Korte and Jalal, J-a-l-a-l. It appeared in the Journal of Heredity in Volume 73, 1982. Dr. K o r te and his colleague looked at another effect on the reproductive material of cells. They looked particularly at the chromosomes, and they demonstrated

that after exposure to 2, 4-D the number of damaged chromosomes which were observed was significantly increased. And the way they put it was that chromosome damage, though statistically significant, statistically insignificant, occurred at dosages as low as .2 micrograms per mil. Chromosome damage was increased at a statistically significant level whenever the concentration was 50 micrograms per mil. or higher. Mutagenicity based on rates of increase in sister chromogenic changes was significant that 10 micrograms per mil. or higher; and then finally, it seems imperative, therefore, to avoid any indiscriminate use of 2; 4-D, and to test the compound for long-range, low-level exposures.

Q Now, what does that mean to you?

A It means that there is an increased risk of damage to the genetic material, and that means that it is more likely to be a carcinogen than not.

Q Additional evidence that it is a carcinogen?

A Yes.

MR. ORTEGO: Object to the form of the question, Your Honor.

THE COURT: Overruled.

Q 16 DD -- two Ds. Did we get the date of that?

THE COURT: 1982.

MR. BALDWIN, SR.: Good.

THE COURT: And 16 V was 1982.

MR. BALDWIN, SR.: Thank you, sir.

Q 16 DD is 1983 British Journal of Cancer. Do you have that, Doctor?

A No, I think I am going to need your copy of that, Mr. Baldwin.

(Mr. Baldwin tendering.)

A Okay. This is another paper by Hardell and Bengtsson. And here they've gone back to look at the study from another point of view. He reports his previous cases, and his conclusion now is that the particular point that they were trying to deal with was as follows: there is an observation that Hodgkin's disease is more likely to occur in persons of upper class than in persons of lower class, and in persons of greater education than in persons of lower education.

So one of the accusations that was made of bias in the study was that there were too many people of higher class in the cases and not enough people in the higher classes in the controls, so that the net result was that there was a bias because of educational and social class level.

He went back. He redid the study again, looking at that particular question. He said "the influence of previous diseases and socioeconomic factors was analyzed through a supplementary questionnaire. No differences were found in cases and controls for such variables, except for tonsillectomy,

which was over-represented among the cases, as well as a history of previous duodenal ulcer or ventricular ulceration. These findings were insignificant.

Q What does that mean to you, Doctor?

A - What it basically means is that the study, even on that point which was being critiqued was valid, and that the risks still held up even if you tried to say that the reason it happened was because of inappropriate and social class matching of the controls.

Q When you say "that study," are you referring to the Hardell?

A Yes, the Hardell Malignant Lymphoma Study.

Q All right, 16 AA.

THE COURT: Eight, No. 8?

MR. BALDWIN, SR.: "A" like "at." "AA," two "As," double "A."

THE COURT: Oh, "A," all right.

MR. BALDWIN, SR.: "AA."

(Mr. Baldwin, Sr. continuing:)

Q It's the Hardell Epidemiological Studies of Soft-Tissue Sarcoma, Malignant Lymphoma, Nasal --

A I think we have already gone over that one.

(Mr. Baldwin, Sr. tendering to witness.)

A Okay, this is a chapter from a book.

Q First of all, where and when was that published?

A It's a chapter from a book on occupational exposure and effects of phenoxy acids and chlorophenol exposure. I am sorry, I don't have the date of publication.

Q 1983.

A Okay. And here Dr. Hardell reviews all of his previous work and restates the risks as he has calculated them. In particular, in Page 370 he gives his risks as he's calculated for Hodgkin's disease for phenoxy acids is five times increased; for high grade chlorophenols, a six point five times increase; and he gives as the reference for that a paper which we have previously talked about, that's the Hardell and Bengtsson study.

Q So is Hardell in 1983 still sticking to his opinion that 2, 4-D causes Hodgkin's disease?

A Yes.

Q 18 A. Do you have it, the weed study? The Scandinavian Journal of Work Environmental Health, 1986?

A Well, I don't have a copy of that in front of me, but I have -- that's the article on the rice weeders, and it's an article that appeared in the Scandinavian Journal of --

Q Please hold your voice up.

A I'm sorry. It's an article which appeared in the Scandinavian Journal of Work Environment and Health. It was done in Italy. In Italy, the people who weed rice are all women. It's not a job that men do. The paper demonstrated

by studying the official statistics what materials were used. They demonstrated that more than 4.8 tons of 2, 4-D were used in the three provinces studied, and what they found was that the women who did the rice weeding had an increased incidence of soft-tissue sarcoma, as had been found in other studies previously. There are some problems with the study because of the age distribution and so on, and the fact that there are no men in the study, but it's one more confirming study done in a different country but where there is information as to the amount of 2, 4-D that was used.

Q And what does that mean to you?

A It means that the same risk that's been seen was confirmed again.

Q All right, sir. Now has there been a study -- well, 16 Y?

A Okay.

Q Do you have it before you?

A Yes.

Q Can you tell us what it is, please, sir?

A It's a study by Dr. Shelia Hoar and Aaron Blair and colleagues from the Occupational Study Section, National Cancer Institute, published in the Journal of the American Medical Association 1986.

Q And what does that study suggest?

A What this study did is it looked at all the new cases

of soft-tissue sarcoma, Hodgkin's disease and non-Hodgkin's disease in Kansas at a certain period of time. The definition was that men who had -- men who were exposed to herbicides more than twenty days per year had a six-fold increased risk of non-Hodgkin's lymphoma relative to non-farmers. Frequent users who mixed or applied the herbicides themselves had an odds ratio of eight for non-Hodgkin's lymphoma. They did not find an increase for Hodgkin's lymphoma.

Q Would it be fair to characterize that study as saying that there is a relationship between 2, 4-D and malignant lymphoma?

A Yes.

Q Non-Hodgkin's?

A Yes.

Q But they did not find a relationship between 2, 4-D and Hodgkin's?

A Yes.

Q All right. Now, do you have any criticism of that study and the way it was conducted?

A Well, the general study is reasonably well designed. The problem with the study is exactly the problem we've seen in this case, that trying to classify cases of Hodgkin's disease or non-Hodgkin's lymphoma, unless you are dealing with single pathologists at a very high-level institution, are likely to be very problematic. We know

that there is an approximately twenty-five percent error in the diagnosis. If you apply the number of cases which Dr. Hoar couldn't find material, plus the number of cases which were questionable for Hodgkin's disease, you come back up with the same twenty-five percent that we have been dealing with that are uncertain.

Once you take the twenty-five percent uncertainty factor into consideration, then it's highly questionable whether she can make the statement that there is no relationship with Hodgkin's disease, because if you put all those cases in and say that there were Hodgkin's disease and they were exposed, you would come out with exactly the conclusion opposite to what she concluded.

So I think what it says and what I would be willing to accept is that there is an association between lymphoma and exposure to 2, 4-D.

Q Well, let's talk about those numbers a little bit.

A Okay.

Q How many people did they review altogether?

A There were a total of 670 patients involved.

Q Does the study -- can you tell from reading the study how many specimens were not able to review, or what percent?

A Thirteen percent she said she couldn't find.

Q Thirteen percent of the specimens. (writing at easel) Thirteen percent of the specimens were not available?

A Right. As they put it, "Pathology specimens for eighty-seven percent of the cases were reviewed."

Q All right.

A So thirteen percent. Specimens for the remaining cases either could not be obtained, eleven percent, or were poor or of insufficient quality to allow review, two percent.

Q All right, that's thirteen percent?

A Right.

Q And then what's the other category?

A Then, for the three diseases, the confirmation rates were eighty-one percent for soft-tissue sarcoma, eighty-five percent for Hodgkin's disease, and ninety percent for non-Hodgkin's lymphoma. So what we are now looking at is fifteen percent of the Hodgkin's disease cases couldn't be confirmed of those they actually looked at, and in addition to that, there are thirteen percent that they couldn't find.

Q So if you add that -- in other words, you had fifteen percent of the Hodgkin's disease cases that were originally diagnosed could not be confirmed, right?

A That's right. So they were something other than Hodgkin's disease.

Q (Writing at easel.) That gives you a total of what?

A A total of, well, twenty-seven percent.

Q Twenty-seven percent of the specimens in this study that could not be diagnosed one way or the other --

A Right.

Q -- whether it was Hodgkin's disease or not?

A Right.

Q And how does that tally with what you found in the literature and in your experience?

A It's about the same.

Q And if you put that --

A And for the same reasons.

Q If you put that bias in that study, what does that study, what does that mean?

A Well, what it means is that if you then -- you can make a number of assumptions, that they are evenly divided among all the categories, that they were all Hodgkin's disease or they were all non-Hodgkin's lymphoma. Or any one of some -- you know, anything between that. But what it does is it says that the basic contention of the study, that there is an association with lymphoma is supported, but the second contention of the study that there is no association with Hodgkin's disease is not supported.

Q All right. Now is there -- 16 X?

A 16 X is an editorial which appeared in the same issue of the JAMA by Dr. Colton who is at the Boston University School of Public Health. Dr. Colton acknowledges Dr. Hardell's studies, he acknowledges Dr. Hoar's studies. Says he thinks Dr. Hoar's study is better than Dr. Hardell's

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study because the case finding was better and there was no, quote, "no bias," and that he agrees that there is an association with lymphoma. He does not critique the issue of whether or not the study was able to distinguish between Hodgkin's and non-Hodgkin's lymphoma. He simply observes that Dr. Hoar says that there did not appear to be an association with Hodgkin's disease.

Q Did he also say that the debate goes on?

A Oh, more than that. He actually gives the number of studies that favor one position and the number of studies that favor the other position, but he doesn't list all the studies. So I think that he does agree that there is an increased risk for lymphoma, in general.

THE COURT: What is the date of that, please?

THE WITNESS: That's 1986, Your Honor. September 5th, 1986, JAMA.

(Mr. Baldwin, Sr. continuing:)

Q Have you before you 20 BB, like in boy?

MR. ORTEGO: What is that?

MR. BALDWIN, SR.: That's the Krummel Report.

MR. ORTEGO: Okay.

A I am sorry, I do not. Which paper is that?

Q Krummel, Krummel Report.

A Yes, that I do have, 20 BB. I am sorry. I have it listed as 21 A, but --

Q Well, let's keep the same designation as was in the Watson deposition of 20 BB.

A Thank you.

Q We'd better remark that 20 B-4, or whatever it was.

MR. BALDWIN, JR.: It should be 19 A.

MR. BALDWIN, SR.: My lawyer over here tells me I'm wrong. I had better change it or we'll have the record fouled up. This should be 19 A.

(Mr. Baldwin, Sr. continuing:)

Q Could you look at 19 A, Dr. Teitelbaum, and tell us what it is?

A Yes, it's a document which comes from the Central Report Index of the Dow Chemical Company. It's entitled an R & D Report, Dow Chemical Company U.S.A., and it's dated October 27, 1978.

Q And what does it relate to?

A It's a report of a study that was done within Dow Chemical Company concerning the removal of impurities in the process for making 2, 4-D. That it had been observed that two impurities which are highly toxic had been found in 2, 4-D, that they were present as a result of the process. They describe the impurities. They describe the theory of what results in the making of these impurities, and then they propose what might be done to reduce the presence of these impurities in the 2, 4-D.

Q And when in the process would these impurities have been in the 2, 4-D?

A They were in the 2, 4-D prior to 1978, and they were introduced into the 2, 4-D as a result of the chemical process involved in making the 2, 4-D.

MR. ORTEGO: I am going to object unless he knows the process changes at Dow or he is just guessing, and we will object unless he has foundation.

(Mr. Baldwin, Sr. continuing:)

Q Are you generally familiar with --

THE COURT: Is this a Dow Chemical document?

MR. BALDWIN, SR.: Yes.

MR. ORTEGO: Yes, it is.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q You are generally familiar with the general way or the chemical process of manufacturing these herbicides?

A It's specifically stated in this document --

Q Well, go ahead.

A -- exactly how it's done. In this particular instance, the acid was reacted at high temperature in the presence of perchlorethylene, and the chlorines were transferred to the phenoxy acid; and in the course of this happening, a series of side compounds were formed which were of the type which are highly toxic and are what this report is all about.

And there's a --

Q Would that --

A -- discussion of the whole process.

Q -- mean that these impurities were in the Dow product, 2, 4-D, prior to that time as it was manufactured in the manufacturing process?

A That's correct.

MR. ORTEGO: Your Honor, this is pure speculation. He doesn't know what was in a product. He is reviewing a document which is an analytical method to analyze our product.

THE COURT: Well, I'll let him testify if he knows.

Q Based on that report and your knowledge, would those impurities have been in the Dow product the years before that report -- they were found -- which gave rise to that report?

A It indicates that the particular process they are concerned about was started in May 1977.

Q All right, so that would mean --

A And it indicates, quote: "Shortly after the start-up of the new 2, 4-D process in 948 Building, a new and unexpected class of nonacetic impurities were isolated in which two of the major components were tetrachlora xanthone and octochlorospirobyxanthene. These impurities were causing problems in the subsequent formulation of the 2, 4-D as amine salt."

Q All right, let's take that one at a time. Does it say then that those impurities have been in that process at least from 1977?

A Yes.

MR. ORTEGO: Objection, Your Honor.

Q Does it describe the type impurities?

THE COURT: Wait -- what is the objection?

MR. BALDWIN, SR.: I'm sorry.

MR. ORTEGO: The objection is it doesn't say that, Your Honor. It says: "Shortly after the start-up of a new 2, 4-D process in 948 Building a new and unexpected class of nonacetic impurities were isolated." It's dated October 27, 1978. It talks about a new chemical process of a company, and it's different from the previous process so how can it be before if it's a different process? It's just developing a new process. How can you say what happened before that?

THE COURT: Overrule the objection.

(Mr. Baldwin, Sr. continuing:)

Q Didn't you refer to 1977, Dr. Teitelbaum?

A The statement says: "A new process for preparing high purity 2, 4-D was started in May 1977 at 948 Building."

Q All right. And so then my question again is according to that report these impurities were in the 2, 4-D manufacturing process going back to 1977?

A That's correct. That's what it says.

Q Now then, what type impurities did they describe?

A These compounds are called heterocyclic polynuclear compounds, the two particular compounds are xanthone derivitives, and they are chlorinated and they are of the type which are highly likely to be carcinogenic.

Q Are they the type -- well, do you have an opinion whether or not they are of the type that would cause the condition of Mr. Greenhill, as you found it?

A I have an opinion about that.

Q And what is your opinion?

A I think they would be contributing causes.

Q Now, is there any evidence that Dow ever told anyone about finding these impurities in their manufacturing process?

MR. ORTEGO: Objection, Your Honor. It calls for speculation.

THE COURT: If he knows.

A None of the reports which were furnished to us indicate that they ever notified anyone. In all the reports it listed as "unpublished," in the bibliography of the paper.

Q And confidential?

A That's correct, and marked confidential.

Q Is that one done the same way?

A It says -- the bibliography is attached to it, and all of these are unpublished reports that are in it.

Q Does Dow have an obligation to report such a finding of such impurities to the EPA?

MR. ORTEGO: Judge, I am going to object. First, there is no evidence that Dow didn't report this. It calls for speculation because he thinks the report is unpublished; and, two, now we are going to an area of what he thinks the duty of Dow Chemical Company is.

THE COURT: I sustain the latter part of your objection as to the duty of Dow to do anything with the Environmental Protection.

MR. BALDWIN, SR.: Let me phrase it another way, and I may be able to get to it and I may not.

(Mr. Baldwin, Sr. continuing:)

Q Are you familiar with the rules and regulations of the EPA?

A In general, yes.

Q Do they have reporting requirements?

A They do.

Q And do they have reporting requirements relating to impurities that might be toxic, hazardous to human health, in products manufactured?

A They do.

Q And do those reporting requirements require a manufacturer to report finding of impurities in their product?

A They do.

Q Did you find any evidence that Dow ever made any such report to the EPA?

MR. ORTEGO: I am going to object unless he can set a foundation how he would know what the Dow Chemical said.

THE COURT: I will let him testify what he knows, if he knows. If he doesn't know, he can so state.

Q The EPA records are public, are they not?

A Yes.

Q Do you have any evidence or have you ever seen any record or report where Dow reported this to the EPA?

A No, I have not.

Q Have you ever seen in the published literature, like what we've gone through today for the first hour or so, any published report by Dow in the JAMA, Journal of the American Medical Association, Cancer Journal, British Medical Journal, British Cancer Journal -- any legitimate medical journal where Dow reported the finding of these impurities?

A They did not, and I have not found it; and I have looked very, very carefully for it.

Q Was the fact that they had these impurities, or found them in their manufacturing process, ever reported in the literature?

A The first finding of these chemicals at all and their toxicity appears in Nature in 1986, and it came from a group

entirely different from the Dow group.

Q Is this something that would be of significant interest to the scientific community to know about the finding of these type impurities in the process of making 2, 4-D?

MR. ORTEGO: This calls for even more speculation, and it is building on a house of cards that have a falling base, and I think it is very unfair and prejudicial at this point.

THE COURT: Overrule the objection.

A Yes. Yes.

Q And explain.

A Well, you go to the scientific literature and you continually read about studies that are done with 2, 4-D, and they talk about various impurities. I have never seen that anyone was aware that these particular impurities were present in the substances. Because of the nature of the impurity, they are of the company of highly dangerous materials, and the fact that the investigators never knew and never knew where to even begin to look for these compounds, they were never told that they could be present, would be a very serious problem in the testing of these materials of 2, 4-D.

Furthermore, because all the tests which are done today are being done on compounds which it appear have been cleaned up, and I don't know that for a fact, but the process

memorandum indicates that it's been -- that processes have been developed for taking it out. Studies which are done now would not fairly represent the carcinogenicity of materials made prior to the time that these materials were taken out of the 2, 4-D.

MR. ORTEGO: I would ask that the answer be striken, Your Honor. I think it is speculation. He does not know for a fact, he even said it in part of his answer, and he is just speculating what he thinks.

THE COURT: Overruled. It goes to the weight, not to the admissibility.

(Mr. Baldwin, Sr. continuing:)

Q Does that study, then, establish in your mind beyond any question that there are highly toxic impurities found in the 2, 4-D manufacturing process prior to 1978?

A Yes.

THE COURT: You are still speaking of 19 A?

THE WITNESS: 19 A, Your Honor.

Q I'm sorry, 1980.

A No, 19 A.

THE COURT: 19 A, Exhibit 19 A.

MR. BALDWIN, SR.: Right. I thought you said "1980."

A Yes.

Q Is the answer to the question yes?

A That's correct.

Q And if Dow is testing their products now and telling people of results of impurities, would that truly reflect what was going on back in 1977 and '78 when Mr. Greenhill was being exposed to 2, 4-D?

MR. ORTEGO: I am going to object to the form of the question. I don't see how he can make this connection. It is really calling for speculation.

THE COURT: I sustain the objection in the manner in which that question is asked, Mr. Baldwin. Rephrase your question.

(Mr. Baldwin, Sr. continuing:)

Q If Dow is making tests of its products now, that is the products manufactured after the date of that report, 1978, would that truly reflect the state of the impurities in the 2, 4-D process prior to 1978, that is from the time they found these problems in 1977 forward?

MR. ORTEGO: I am going to object to the form of the question, Your Honor, and also it assumes facts that are not in evidence.

THE COURT: Well, as I understand, this 1980 report is dated 1978, is that correct?

THE WITNESS: That's correct, Your Honor.

THE COURT: And you are asking whether or not if they came up with some problems in 1978 are they talking

about problems that existed before 1978?

MR. BALDWIN, SR.: No, sir. My question is let's say Dow tested their product today, 1980 -- let's just say in 1980 -- and they reported the result of their product as it was made in 1980. Now I am trying to make the point that that would not be the same product that was being manufactured prior to the time they found these impurities when they changed their product.

THE COURT: I sustain the objection to that question.

(Mr. Baldwin, Sr. continuing:)

Q Now, do you have the carcinogenic report?

A I have 20 UU, which is the rest of the Dow reports.

Q Okay, what is 20 UU?

A 20 UU is dated October 10th, 1978, and it's called the "Acute Toxicological Properties and Industrial Handling Hazards of 2, 4-5-7 Tetrachloroxanthone." It shows that based on animal studies which were carried out in the laboratory --

Q By who?

A -- by Dow Chemical, that applications of the test material in dilutions as low as .001 percent, ten parts per million in the chloroform, resulted in a positive reaction on the rabbit ear chloracne test. Application of .0001 and .00001 resulted in a negative chloracne

response. Skin irritation tests indicated that it is not likely to be absorbed through the skin in acutely toxic amounts. Precautions such as wearing protective clothing must be taken to prevent skin contact. If contact occurs, wash the affected area with soap and plenty of water, thoroughly clean the contaminant clothing before reuse or discard. And at the beginning it says this material also known as 2,4-5-7 tetrachloro-9-H-xanthene--9-one is an impurity at 20 to 100 parts per million in 2, 4-D.

Q Now in just plain old, everyday language, is that referring to the impurity that was found in the process that you just talked about in the Krummel report?

A Yes, sir.

Q And does it say that it's a carcinogenic?

A It says it's chloracnogenic, it can cause chloracne.

Q And that's Dow saying this?

A That's correct.

Q And does it say that protective clothing must be worn?

A Yes.

Q Do you find that language on any Dow label?

A I do not.

Q And the next is 20 MM?

A Yes, sir.

Q And what is it?

A 20 MM is a report from the laboratories, Toxicology

Research Laboratory Health and Environmental Sciences USA, Dow Chemical, Midland, Michigan. The date of this report is 2-27-80. And it says that nine samples related to the 2, 4-D process were submitted for evaluation of chloracnogenic potential. It reviews what chemicals were present, and it comes to the conclusion -- I'll go to the last page, the final conclusion -- "Materials containing tetrachloro xanthone in excess of 75 parts per million should be considered potential human chloracnogens, and human skin contact with these materials must be prevented."

Q Is that again relating to the impuritiy that was found in the Dow process?

A This is 1980, yes.

MR. BALDWIN, SR.: Your Honor, it's almost noon, and I believe if we can adjourn a little early I can collect everything during the noon hour and be through very shortly after lunch.

THE COURT: All right.

MR. BALDWIN, SR.: I want to just kind of check to make sure I have covered everything.

THE COURT: All right. Ladies and gentlemen, we are going to recess until one thirty. Don't discuss the case among yourselves, don't allow anyone to discuss it with you -- the same admonition I have given you heretofore. Be back in the jury box at one thirty and we will commence at

that time. We stand in recess until one thirty.

(Recess at 11:48 a.m., until 1:30 p.m.; open court, jury and all parties present.)

THE COURT: Please be seated. Would the lawyers approach the bench, please?

(Off the record discussion at the bench, very brief.)

(Open court)

THE COURT: You may continue.

MR. BALDWIN, SR.: Thank you, Your Honor. At this time we will offer into evidence Plaintiffs' Exhibit 19 A, which is the Dow Krummel Report that the witness just testified to; and Plaintiffs' Exhibit 20 UU and 20 MM, which are the other two reports that the witness just testified about.

THE COURT: Any objection?

MR. ORTEGO: Just the objections I have previously stated with regard to time frame, Your Honor, but you have ruled on those.

THE COURT: They will be admitted, and your exception is noted.

(Mr. Baldwin, Sr. continuing:)

Q I think we can finish up very quickly, Dr. Teitelbaum. I have prepared purely as a trial aid, a kind of list of some of the more prominent documents that you have talked about, and I will ask you if you will direct your attention

to it and let me just go over it.

MR. BALDWIN, SR.: Your Honor, may I stand here (at easel)?

THE COURT: Yes.

(Mr. Baldwin, Sr. continuing:)

Q Up at the top is the 1959 JAMA article you told us about, the Journal of American Medical Association?

A That's right.

Q Where -- what does that first do?

A That article tells about the causation of the neurological disease following skin absorbtion of 2, 4-D.

Q And '67, the Lancet, which is the British article?

A That was the first article that tied up exposure to wood and wood products and Hodgkin's disease.

Q And then 1976 JNCI, what is that?

A That's the Journal of the National Cancer Institute, and that was a second study which confirmed what had been reported in 1967, that Hodgkin's disease and working with wood were connected.

Q And 1977, the next item?

A This was the first of Hardell's studies that showed seven patients who had soft-tissue sarcoma who had been exposed to phenoxy acids, including 2, 4-D.

Q Which would be cancer?

A Yes.

Q And that's that journal nobody can pronounce --

A Right.

Q -- from Sweden?

A Right.

Q In 1978?

A 1978 was -- he went back, based on his seven cases, and actually did a controlled study and found that there was an increased risk of soft-tissue cancer in people who had worked with these products.

Q All right. And 1979, the British Journal of Cancer?

A Again, he looked at the study and cleaned up some of the details and published in English now the six-fold risk of soft-tissue cancers following exposure to chlorophenoxy acids.

Q Is there another Hardell study in 1979 that's not on this chart?

A Yes, there is. There was a '79 article that was published in Lancet that dealt with Hodgkin's and non-Hodgkin's lymphoma showing that there was a six times increase in relative risk of getting cancer if you worked with the chlorophenoxy -- getting Hodgkin's or non-Hodgkin's lymphoma if you worked with these materials.

Q And that showed an association between 2, 4-D exposure and Hodgkin's disease?

A Right.

Q And then 1980?

A 1980 was the article which indicated that -- summarized the entire situation, and indicated that the evidence was such that you would have to conclude that 2, 4-D may be carcinogenic and also may cause birth defects, in addition to other ill effects on humans.

Q On humans?

A Right.

Q And 1980?

A In 1980 this is the paper by Hogstedt from Sweden from the Occupational Health & Safety Board which showed that 2, 4-D appeared to be both mutagenic and to cause an increase in birth defects.

Q In 1980, again?

A 1980 this is now Edling's work and Axelson showing that in the railroad workers who used 2, 4-D and other phenoxyacetic acids to clear the right-of-way there was an increase in death due to cancers, and that there was need to be extremely careful in handling these materials.

Q Is tumor another way of saying cancer or malignancies?

A In this case it was, yes.

Q And the next?

A The next was the paper by Edling, and it appeared in the Journal of Occupational Medicine in the United States, indicating that there was an increased risk of cancer in

lumberjacks, and particularly of cancer of the lymphatic and hematopoietic systems, including lymphomas.

Q And did that -- was the paper that said that was of particular interest in view of Dr. Hardell's work?

A That's correct.

Q And 1980?

A 1980 is the California summary indicating that they considered the substance to be hazardous, that it causes neurological disease, that there was evidence suggesting that it was carcinogenic and no evidence to indicate that it wasn't, and that the labels were inadequate and the product had to be handled with great care.

Q Is that referring to 2, 4-D?

A Yes, it does.

Q I am going to put 2, 4-D up there later. In 1981?

A 1981 is an epidemiologic study again, an update of -- now of Hardell's studies showing that the soft-tissue sarcomas and the lymphasarcomas were increased in people who had chlorophenoxy acid exposure, including 2, 4-D, and this was an attempt to answer some of the critiques which had been made by others concerning these studies.

Q And the next study?

A The same kind of thing, except now he focused on the issue of lymphoma and Hodgkin's disease, and in particular on the question of social class and the association with

risk of lymphoma and Hodgkin's disease.

Q And in 1981?

A In 1981 he went back again and recalculated using the cancer patient as the control, I believe that's the study, and he found the same six-fold risk there.

Q Confirmed his earlier studies?

A Yes, that's correct.

Q In 1982?

A In 1982 again the paper by Coggon and Acheson indicating that it would be unwise to discount all the studies that had been published up to that time, and although the evidence wasn't definitive proof positive, it certainly was very suggestive that cancer, including lymphoma and Hodgkin's disease, were caused by exposure to chlorophenoxy compounds, including 2, 4-D.

Q And '82?

A And in '82 in Lancet Hardell has a letter indicating that he considers the editorial to have been a very balanced editorial, and he points out the increased risk of Hodgkin's disease again in that paper.

Q And in the Journal of Heredity?

A In 1982 we have the issue of the potential genetic damage, the fact that this is a compound which is capable of producing mutagenic and chromosomal changes, and that this would lend support to the idea that it's a carcinogen.

Q And create serious concern about 2, 4-D?

A That's correct.

Q Now is there an article in 1983 by Hardell or a book that he wrote a chapter on?

A He did, he wrote a chapter in a book, and he summarized all of his previous conclusions, restated the risks as he saw them, and confirmed that in his opinion the risk for Hodgkin's disease was about five times what it would have been for people who were not exposed, and approximately six times for non-Hodgkin's lymphoma.

Q How many articles has Hardell written all told relating to lymphomas?

A Well, I haven't counted them all up, but it's about six or seven at this point.

Q And was it his early opinion that there was an association between exposure to 2, 4-D and Hodgkin's disease --

A Yes.

Q -- as well as other lymphomas?

A Yes.

Q And did he ever back off that opinion?

A No.

Q Does this list that we have here comprise some of the more important articles that you have testified to earlier this morning?

A Yes.

A Several hundred altogether.

Q With one type of lymphoma or another?

A That's right.

Q Would that include Hodgkin's disease?

A Yes, it would.

Q Now what have you done to prepare yourself to testify in this case, Doctor?

A Well, I've reviewed the medical records of Mr. Greenhill, as much as we have been able to get. I have reviewed his deposition. I have reviewed the medical literature on the subject. I've looked at the slides. I had the slides looked at by colleagues, and I feel that I've had a good overview of what happened to Mr. Greenhill.

Q Could you tell us in your opinion what Mr. Greenhill's illness was?

A Yes, I think he had a malignant lymphoma, and the consensus of the academic pathologists who looked at the slides is that this was probably Hodgkin's type. The consensus of the non-academic pathologists, I think who are kind of two to one to the academic, was that if that's what they say that's probably what it was. But they themselves didn't make that diagnosis. I think he had a malignant lymphoma that's perhaps most consistent with Hodgkin's type.

Q All right. Would you tell the Jury what you mean by the

term "malignant lymphoma"?

A Sure. I guess we have to start with an understanding of what a lymphoma is. A lymphoma is a cancer of the lymphatic cells. Now, the lymphatic cells are specialized cells in the body which have as their role the protection of the body against attack from the outside. Usually they are involved with killing bacteria, stopping viruses, producing antibodies, and in other ways protecting the body. There is a very extensive system of lymph nodes. The lymph nodes are little glands that are distributed throughout the body, and in each of those little glands, which are connected up by lumph channels, there are these specialized cells of various types which have that special role of protecting the body.

In some cases, those cells, or one cell in that group, becomes malignant, and when that one cell becomes malignant, it gradually takes over the lymphatic system and spreads from the lymphatic system to other organs and eventually, unfortunately, can kill the patient.

Q Could you tell us, Doctor, briefly, how -- where the lymph system, the lymphatic system, as you call it, is in the body?

A It's everywhere. It's a system like the blood vessels. It often runs parallel to the blood vessels. These chains of lymph glands, the ones we most commonly think of are the

ones that the pediatrician always feels for in little children up here in the neck; but if you make a special dye study, you find that there are lymph nodes, these little lymph glands, throughout the body, and that each major organ has drainage to a group of these lymph glands, which in a sense, offer protection to that organ.

Q In other words, we think of the lymph node, as you talked about in the neck, that has a little tiny string of vessels, like blood vessels, that go down, for example, to the liver?

A That's quite right. It's all connected.

Q Or the kidneys?

A Well, it's all connected. It doesn't go directly, but there is a major connecting duct; and when that all is connected up, then it's possible for lymph from the liver to reach that node there in the neck, yes.

Q Because it's got a passageway to go --

A That's right.

Q -- just like a blood vessel?

A Yes.

Q Now, what's the purpose of the lymph system?

A Well, it is protective. As I said, it cleans up and drains and protects the body from infection, mostly. It has other purposes. For instance, it provides all of the antibodies. When you vaccinate someone, what you are doing is

you are activating the lymphatic system and certain parts of the lymphatic system so they produce antibodies and have the capacity then to fight off some organism, like smallpox, if it were to come along in the future.

Q Does it carry fluid?

A It does.

Q And does it carry cells?

A Yes, it does.

Q And are cancer -- describe the connection between cells of the body and cancer.

A Well, cancer is a disease of cells of the body. If cells, any cell of the body, becomes changed, it's genes, now these are not the genes that involve our having children, these are the genes that each cell reproducing itself -- if the genes in that cell are in some way damaged, that cell may then begin to reproduce. And when it reproduces, it's no longer a normal cell. It loses the capacity to live within its own boundaries; it gains the capacity to live in some other place in the body where it doesn't belong, to bring in or to induce blood supply so that it can support itself, and eventually it will overcome or overtake the ability of the normal cell to grow, and it will kill the patient, or kill the cells and eventually kill the patient.

Q So if you get a cancer cell in the lymph system, is it possible for that cell to go to other parts of the body,

for example, the liver?

A Yes, that's one of the characteristics of cancer cells, that they can reach another organ where they didn't start and survive there. Most cells, normal cells, if they got to the liver would be just destroyed. But a cancer cell is able to set up shop and grow there.

Q And can go there through the lymph system?

A Right.

Q Can it get into the bone through the lymph system?

A Yes, it can.

Q And did we see that in Mr. Greenhill, and we will talk about later?

A Yes.

Q Sir?

A Yes.

Q Now, I want to talk about some terms that may be foreign to the Jury. We have already described lymphoma. It's a cancer of the lymph system --

A Right.

Q -- that has cells in the lymph system?

A Yes.

Q What is Hodgkin's disease?

A Hodgkin's disease is a particular kind of lymphoma. There are some studies which have been made over the years in an attempt to classify what we see under the microscope.

There is a big group of lymphomas that are called everything else, or non-Hodgkin's lymphomas; and then there is a group of lymphomas which are called Hodgkin's lymphoma.

Today, there is a fair amount of study being done as to exactly which cells the various lymphomas come from, and there are three types of cells we know -- T lymphocytes, B lymphocytes and histiocytes. And Hodgkin's disease is thought to be a cancer of the histiocytes. That's Dr. DeVito's (pho) work.

Q But is it a form of lymphoma?

A Yes, it surely is.

Q. And who is given credit for describing Hodgkin's disease?

A Well, Dr. Hodgkin described it in the 1830s, and then Dr. Wilks in the '60s, although he wasn't sure what he was looking at; and then finally Drs. Sternberg and Reed, and if you call it a "Reed-Sternberg cell," you are probably a feminist because Reed was Dr. Dorothy Reed, so you give her precedence. But if you call it a "Sternberg-Reed cell," you are probably from Germany because Dr. Sternberg worked in Germany. So, that's the way it went. But one was 1898 and one was 1903.

Q But the point is when it was described first in 1832 did Dr. Hodgkin call it a cancer?

A He wasn't sure, but he thought it was.

A He wasn't sure, but he thought it was.

Q Now some other terms that are going to be foreign to the Jury I would like to ask you about. What does the term "soft tissue sarcoma" mean?

A Okay. A sarcoma is a cancer of the supporting tissues of the body. Now that is differientiated from a cancer of the functional tissues of the body, the glands and the organs which do some purpose for the internal function of the body. So, sarcomas are cancers which arise from the muscles, the bones, the cartilage, all of the fat, all of the supporting tissues. And they actually are derived, if we go way, way back to the earliest development of the embryo, they are derived from the same layer of the embryo that the blood is developed from and that the lymph is developed from.

Q The embryo being the fetus or the child before --

A The earliest, earliest time when there are sixteen cells and we are talking about the little round embryo when it first begins to take shape. At that point there are three layers of tissue, ectoderm, which is going to form the skin and nerves, endoderm, which is going to form the gut, and mesoderm which is going to form all of the supporting tissues, including the blood lymph and the muscles. And the relationship between the lymphomas and the sarcomas is that they come from that same very, very

primitive tissue.

Q Being what?

A The mesenchyme or mesoderm.

Q And what is non-Hodgkin's lymphoma?

A Well, non-Hodgkin's lymphoma is everything else. That is to say that all of the lymphomas that aren't classified as Hodgkin's disease are non-Hodgkin's lymphomas, and those are usually the B and the T cells and some other histiocytic lymphomas.

Q Now, what is a phenoxy acid?

MR. ORTEGO: Object to the form of the question, Your Honor.

THE COURT: Overruled.

A I'm sorry, I --

Q Go ahead.

THE COURT: Go ahead and answer.

A A phenoxy acid is a chemical which is composed of a benzene ring to which oxygen has been added making phenol, and then to which an acid has been joined, an acid being a group which has available hydrogen.

Q Is phenol a large chemical group?

THE COURT: Just a minute. An objection?

MR. ORTEGO: I am objecting to these questions in that Dr. Teitelbaum is not qualified as a chemist nor is he a chemist.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Go ahead, Doctor.

A I'm sorry, I don't know where we are -- the question?

Q The phenols, is that a large group of compounds?

A Well, phenol is a single compound, but because it is very reactive it can be derivitized and you can make many things from phenol.

Q What is a chlorophenol?

A Chlorophenol is a compound which contains the benzene ring, the oxygen and hydrogen and chlorine attached to the ring in several -- one or several places.

Q All right. Now could you tell us what 2, 4-D is?

A 2, 4-D is a bichlorinated, meaning it has two chlorines, phenoxy acetic acid. So it is composed of chlorine, the benzene ring, the oxygen and the acetic acid.

Q Is it sometimes referred to as a chlorophenol?

A Yes.

Q What, Doctor, is Tordon 101?

A Tordon 101 is a trademark product manufactured by Dow that contains 2, 4-D and picloram.

Q And what is picloram?

A Picloram is a herbicidal substance which is incorporated in this compound.

Q So if you put 2, 4-D and picloram together you have got

Tordon 101?

A Yes.

Q And 2, 4-D is an integral part of Tordon 101?

A Yes.

Q And it is sometimes referred to as chlorophenol?

A Yes.

Q Is it also sometimes referred to as a phenoxy acetic acid?

A Yes, sometimes in shorthand.

Q Now, would you rank 2, 4-D as a hazardous substance?

A Yes, I would.

MR. ORETGO: Object to the form of the question.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Would you?

A Yes, I would.

Q And on what basis?

A On the basis that it is a substance which has the capability of killing both animals and humans. In addition, in lower doses, it has the ability to injure animals and humans, and the injuries are both acute, meaning they occur in a very short period of time, mid-range, and they may have long-range consequences as well. That is they may persist long after the chemical exposure has stopped.

Q And would you rate picloram -- I may be mispronouncing

it -- a hazardous substance?

A Yes.

Q And did I hear you -- do you know who owns the trademark for Tordon 101?

A Yes, I believe it's Dow Chemical Company.

Q And that's just a generic name, like aspirin or something, for 2, 4-D and picloram?

A Well, it's not a generic name. I think it's a trade name.

Q A trade name.

A I think they own that.

Q Okay.

A I think Bayer once owned aspirin, too, but I'm not sure they do anymore.

Q All right. Now, what is a carcinogenic? What does that term mean, Doctor?

A A carcinogen, or carcinogenic, means a substance which is capable of causing cancer.

Q Would it be accurate to say, then, as we go through the literature of today and if we see the term "carcinogenic" that means that whatever that is has the ability to cause cancer?

A Yes.

MR. ORTEGO: Objection to the form of the question, Your Honor.

THE COURT: Overruled.

(Mr. Baldwin, Sr., continuing:)

Q Now, Doctor, let's talk a little bit about pathology. Is pathology -- what is pathology?

A Pathology is the study of the behavior and appearance of sick tissues.

Q All right. And do pathologists usually look under slides and microscopes?

A Well, they look at sick tissues. They may do it lots of different ways, but we have pathologists who work only in the laboratory; we have pathologists who work in using microscopes; and today there are pathologists doing electron-miscroscopy and many other kinds of very sophisticated -- but the unifying thing is that they are looking at structural, anatomic and functional alnormalities -- how sick tissues function.

Q Is it or not true that the only way one can make a diagnosis of lymphoma is by a histiological diagnosis?

MR. ORTEGO: Objection. Leading the witness, Your Honor.

THE COURT: Avoid leading.

A In my opinion, the commonest way to do it is to use a microscopic diagnosis. There are now some very sophisticated immunologic studies which help in the diagnosis.

Q Can one make a definitive diagnosis of Hodgkin's disease

without using the microscope?

A I don't believe so, no.

Q Now tell us a little bit about Hodgkin's disease. Very briefly, is it -- what type disease is it? Is it well understood, not well understood, or what are the facts?

A I would say that it's agreed that it's a cancer of the lymph system. I think after that everything is probably not agreed. What causes it has been the subject of many, many discussions. Certainly there are physicians, and we can look at some of the literature where -- who believe that there are chemical causes; there are some people who believe that there are viral causes, and there are even people who think that there is a bacterial cause and that it is related to tuberculosis. It's one of the old, old theories, but they have never been able to disprove it so it is one of the theories that's still on the table. It's generally agreed that it's a disease which has an environmental factor as its cause.

Q Does that mean an outside cause?

A Yes.

Q Is the mechanism of Hodgkin's disease understood even today?

A No.

Q And is there a difference in the medical community as to the very nature of the disease?

A Very, very strong difference. It's a subject that is under very intense study. Whatever book you pick up, you will find the autho.'s particular point of view about it as to what the nature of the disease is, what the biology. The basic, life biology of the cell that is Hodgkin's disease is not today well understood. There are ideas, but no consensus.

Q Is there any authority for the proposition that it is caused by outside forces or agents?

A Yes. I think the authorities go all the way back to the early twentieth century, the work that was done by Reed and Sternberg, and right up to today there have been numerous papers dealing with causes ranging from virus, to chemicals, wood dust, tuberculosis bacillus and others, all of which have reasonable and moderate scientific opinion and good basis.

Q Now, Doctor, let's talk a little bit about the difference between Hodgkin's disease and non-Hodgkin's isease.

A Okay.

Q Is there an authority that you recognize on Hodgkin's disease, first of all?

A Well, the --

Q Do you have one of the books there in front of you?

A The greatest authority was Dr. Kaplan who passed away

last year. There is a recent text which has been written by Selby and McElwain (pho) published this year, 1987, which updates Dr. Kaplan's book, and was written specifically to bring the information up-to-date from Dr. Kaplan's edition, which was 1980. So we have a 1987 edition by that group.

Q Are those the type of authorities that you as a scientist would rely on?

A They are certainly authorities in the field of Hodgkin's disease.

Q What does Dr. Kaplan's book say about Hodgkin's disease, just very briefly, the nature of it?

A He says it's a bizarre disease, and the nature is not really understood.

Q All right. And the other book?

A Just about the same thing.

Q What does Dr. Kaplan say about the ability of one to make a -- to distinguish between Hodgkin's and non-Hodgkin's lymphoma?

A Well, Dr. Kaplan points out that it is an extremely difficult diagnosis to make, and that pathologists frequently disagree about the diagnosis, that in any given series of cases pathologists often differ by as much as 25 percent in their interpretation. So, he recognized that there was a great deal of difficulty making this diagnosis even among experienced pathologists.

looked at, Harrison?

A Well, Harrison's textbook has a chapter by Dr. DeVito. Dr. DeVito was head of the N.C.I., and he comes to just about the same conclusion, that about 25 percent of the diagnoses are questionable, and you can read it in any one of three textbooks. He has his own book. He has a chapter in Harrison and he has a chapter in a book on lymphomas.

Q (At easel.) Is that 25 percent figure supported or substantiated anywhere else, either in practice, or by writings, or any of the things you have talked about?

A Oh, yes. In Selby and McElwain they actually give you the references. The studies have been done.

Q Just one minute.

MR. ORETGO: I am going to object to this line of questioning. It is really calling the witness to speculate what happened in other cases. If he has an opinion what happened in this case, I think it would be appropriate, but speculating on what textbooks say -- if he has an opinion on Hodgkin's or non-Hodgkin's, I think that's fine. If he thinks the diagnosis of Hodgkin's disease in this case is incorrect, that's fine. But to speculate and talk about other cases is just going to confuse the Jury. What's his opinion on this case?

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

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Q Does that 25 percent figure, Doctor, agree with practice?

A Yes. I think we have just that experience right here where --

Q We'll come to it. And does it agree with the literature?

A Yes.

Q Now, do you have before you some pathology reports, Doctor?

A Yes, I do.

Q I think we can do this faster if we -- 1 A, Plaintiff's Exhibit 1 A, could you tell us what that is, Doctor?

MR. ORTEGO: Judge, I haven't seen it. Could I just see what it is? Mr. Baldwin, I didn't mean to interrupt.

MR. BALDWIN, SR.: Your Honor, I told them last night that we were going to offer these.

MR. ORTEGO: I just want to see which one it is. I don't have the numbers you put on them.

MR. BALDWIN, SR.: I am going to offer all of the Pathology Reports.

MR. ORTEGO: Okay, if I can just see which one, because there are a lot of them.

(Mr. Baldwin, Sr. tendering exhibit to Mr. Oretgo.)

MR. ORTEGO: Thanks. I appreciate it, Mr. Baldwin.

MR. BALDWIN, SR.: You can be looking through

these others, if you like.

MR. ORTEGO: Fine. I appreciate it, sir.

MR. BALDWIN, SR.: Try not to mix them up.

MR. ORTEGO: I won't for you, don't worry.

(Mr. Baldwin, Sr., continuing:)

Q Would you look at -- I'll try to expedite things. You have a copy of these Pathology Reports?

A Yes, I do. I have 1 A right here.

Q Would you refer to 1 A, please, sir?

A Yes.

Q And tell us what that is?

A. That's a Pathology Report dated 6-14-79, over the signature of Gerald A. Stolz, a pathologist. And it says: "Lymph node, left side of neck, malignant lymphoma, lymphocytic type, diffuse." And there are three slides and three blocks that were apparently looked at.

Q Did he call that Hodgkin's disease?

A No, he didn't.

Q All right. He did call it a "malignant lymphoma"?

A Yes, he did.

Q And that was cancer of the lymph system?

A Yes.

MR. BALDWIN, SR.: We will offer that into evidence, Your Honor.

THE COURT: Any objection?

MR. ORTEGO: On 1 A? No, Your Honor.

THE COURT: It will be admitted.

(Mr. Baldwin, Sr. continuing:)

Q Would you look at 1 B, please, sir?

A Yes, I have it.

Q And what is that?

A It's a letter by A. S. Koenig, M.D., pathologist, to James Butler, M.D., at M.D. Anderson Hospital, requesting Dr. Butler to look at the accompanying tissues, that is the tissues previously referred to by Dr. Stolz.

Q What does he say with reference to his group and those tissues?

A He says: "None of our group is in complete agreement with the diagnosis which was made originally. We all feel that this is more characteristic of a Hodgkin's disease, but we are unable to find characteristic Reed-Sternberg cells." And so they are sending this to Dr. Butler to look at it.

Q And what does Dr. Butler's report say?

A Dr. Butler wrote a report dated 6-29 -- he received the tissue 6-29; he completed his work on 8-24-79, and his diagnosis is "Hodgkin's disease with lymphocytic predominance, diffuse lymphocyte and histiocyte type. And his comment is "sections show a diffuse proliferation of lymphocytes and histiocytes with easily found L&H variance of Reed-Sternberg cells. A rare diagnostic Reed-Sternberg

cell is present." And then he attaches a letter to it where he says: "I agree with your diagnosis of Hodgkin's disease and believe that this represents the lymphocytic predominant type. As is usually the case in that type, Reed-Sternberg cells are difficult to find."

MR. BALDWIN, SR.: All right, now I offer these Exhibits 1 B and 1 C, Your Honor, that we just referred to.

THE COURT: Any objection?

MR. ORTEGO: No, Your Honor.

THE COURT: They will be admitted.

(Mr. Baldwin, Sr. continuing:)

Q Now, apparently some reference was made to Reed-Sternberg cells?

A Right.

Q Could you tell us the significance of the so-called Reed-Sternberg cell and the diagnosis of Hodgkin's disease?

A Well, the Reed-Sternberg cell was diagnosed or described by these two physicians I mentioned earlier, and it's generally agreed that in order to make the diagnosis of Hodgkin's disease you have to find either typical Reed-Sternberg cells or something awfully close to typical.

Q And were the people in Arkansas the first group of pathologists able to find Reed-Sternberg cells?

A No, they were not.

Q And what did Dr. Butler find?

A He said he found a few -- he said "a rare diagnostic Reed-Sternberg cell is present," and he easily found L&H variance of Reed-Sternberg cells.

Q What does the term "variant of a Reed-Sternberg cell" mean, Doctor?

A Well, I think you really have to ask the pathologist who said that what he means by that. As I read it, it means it didn't look like a -- exactly like a Reed-Sternberg cell, but with a little bit of creative imagination you could call it a Reed-Sternberg cell.

Q But can you make a diagnosis --

MR. ORTEGO: I am going to object to his interpretation of what he thinks the Doctor meant in this report.

THE COURT: I sustain the objection. The Jury is instructed not to consider that last remark for any purpose.

(Mr. Baldwin, Sr. continuing:)

Q Can you make a diagnosis, Doctor, of Hodgkin's disease with a Reed-Sternberg cell variant?

A Well --

MR. ORTEGO: I am just also going to object to this line of questioning, Judge, because I think Dr. Teitelbaum testified he is not a pathologist and not capable of diagnosing Hodgkin's disease on a slide. And asking how you would diagnose Hodgkin's disease when he's neither a pathologist nor qualified to do so would be

improper, unless he can say he's a pathologist that can do it.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Doctor, you are qualified to read slides, are you not?

A I am. I am an interstate laboratory director and a general supervisor in hematology, and I am qualified to look at slides and --

Q Have you looked at many slides?

A I surely have. I -- I wouldn't make a diagnosis without seeing a Reed-Sternberg cell, and if I saw something I thought might look like it, I would send it to one or two pathologists and see what they thought.

Q What is Plaintiff's Exhibit 1 D, Doctor?

A 1 D is exactly that kind of thing. It's a report of the Denver Clinic's pathologist to whom I sent these slides after I had looked at them.

Q Were they able to find Reed-Sternberg cells?

A They were not in the original material.

Q All right. And what is the last sentence of the comment to that Pathology Report?

A Based on those slides which they looked at, none of us feel that this process represents Hodgkin's disease.

Q Now, how many of "us" was that?

A Three physicians, Doctor Hanley, Dr. Meyer and Dr. Howland.

Q Now, Doctor, I am going to ask you a question based on some facts. I am going to ask you based on the review of Mr. Greenhill's medical records, and Mr. Greenhill's history of exposure to 2, 4-D, as you've understood it from the testimony in this case, his deposition, the slides of Mr. Greenhill that you reviewed, the pathological reports that you've seen, had an opportunity to review, the other medical records of Mr. Greenhill, the literature that you have reviewed here today and other literature, and the Krummel report which was a Dow report about the impurities that you testified about just before lunch, and further, based on your knowledge and your experience and skills as a physician and a toxicologist, I am going to ask you, sir, based on that do you have an opinion, based on reasonable medical certainty, that the exposure of Mr. James Greenhill to Tordon 101 manufactured by the Dow Chemical Company was a significant, contributing cause of his cancer and death?

A Yes, I have an opinion about that.

Q And what is your opinion?

A My opinion is that to a reasonable medical certainty, Mr. Greenhill's exposure to Tordon 101 and 2, 4-D was a significant, contributing cause to his cancer and his death.

MR. BALDWIN, SR.: We pass the witness, Your Honor.

MR. ORTEGO: May I, Your Honor?

THE COURT: Yes. Surely.

MR. ORTEGO: If I can wait just a couple more minutes, I waited before -- if I could just get set up.

CROSS EXAMINATION

BY MR. ORTEGO:

Q How are you, Doctor Teitelbaum?

A Fine, thank you, Mr. Ortego.

Q If I can just get over here so I can get some of this stuff here. I am not as good at this. Dr. Teitelbaum, I have a lot of questions for you after while, but I am going to start off kind of simple.

The first question for you is it's my understanding that Tordon 101 has both 2, 4-D and picloram in it, is that correct?

A That's correct.

Q Those are the two herbicides that are in the product Tordon 101?

A That's correct.

Q Now you do not believe that picloram causes cancer in humans, do you?

A That's correct.

Q And you do not believe that picloram caused Mr. Greenhill's Hodgkin's disease or cancer?

A That's correct.

Q So when we talk about your opinion today, and we talk

about Tordon 101, it consists of 2, 4-D and picloram. So your opinion is based on the 2, 4-D and not the picloram, is that correct?

A My opinion is based on the 2, 4-D primarily, that's correct.

Q Well, when you say "primarily," you don't believe that picloram causes cancer, do you?

A No. But I believe that it is hazardous, as I indicated in the previous examination.

Q But for our purposes, so we can start ruling out and understanding, in this case you do not believe that the picloram caused Mr. Greenhill's Hodgkin's disease, or cancer?

A That's correct.

Q Can you tell the Jury, Dr. Teitelbaum, what the United States Environmental Protection Agency is?

A Yes. It's a special agency -- a regulatory agency, part of the Department of the Interior, and it is charged with the responsibility for protecting the environment.

Q Now instead of talking about Tordon 101, since we are only going to talk about 2, 4-D, I am just going to use 2, 4-D generically so the Jury doesn't get confused, but we've ruled out the picloram. Does the Environmental Protection Agency regulate 2, 4-D in Dow's product Tordon 101 in the United States?

A Yes.

Q And they also regulate the labeling, what goes on the label of a herbicide like Tordon 101 and products containing 2, 4-D?

A Yes, both the EPA and the state agencies, that's correct.

Q Now the Environmental Protection Agency, which regulates what goes on the label and what products can be sold, has a staff of scientists, doesn't it?

A Yes, it has a staff of scientists.

Q Which includes medical doctors?

A I don't know that they have any medical doctors.

Q Toxicologists?

A They have some non-medical toxicologists, that's correct.

Q Scientists?

A Well, if you tell me what you mean by scientist, I'll be able to agree with you.

Q Well, let me put it a little simpler. The United States Government, including the Environmental Protection Agency, has some scientific folks with PhDs and medical degrees, don't they?

A Yes.

Q And as a matter of fact, doesn't the EPA have access to all the other government agencies' information, including NIOSH?

A Not necessarily. Only if it's supplied with it, and only if it requests it.

Q Now, what is NIOSH?

A The National Institutes of Occupational Safety & Health.

Q And the EPA does have access, if it wants, for any information that NIOSH has, doesn't it?

A Well, that's by interagency agreement, and I'm not sure what the details of their interagency agreements are. One is the Department of Health, Education & Wel -- or Health & Human Services Agency, and one is a Department of Interior agency, and they are sometimes very protective of their information. So, I couldn't as a general rule agree with you.

Q Oh, you can't generally agree with me. Let me be simple about it. You have testified that you've acted as a consultant for various government agencies?

A Yes.

Q Doesn't the EPA hire people who are scientists and doctors to assist them in their work?

A Sometimes.

Q And the EPA evaluates and regulates herbicides?

A It has that responsibility, yes.

Q And would it be fair to say, because I think you've drawn some other conclusions today, that the EPA has access to the information it wants from other agencies within the

government when it pertains to science?

A I can't answer that question. You would have to ask them. Generally speaking, they can get information. Whether than can get all information, I really couldn't say.

Q Would it be fair to say you don't know exactly what the Environmental Protection Agency has on 2, 4-D?

A No, that would not be fair to say. I have seen the file. I have seen the Rebuttal Presumption File, and I think I know what they had as of the last time I looked at it, which was about two years ago.

Q But there are things in there that you might not know what they have?

A Yes. There are areas in the file which are listed as "trade secrets," and because they are listed as trade secrets, they don't appear in the public files, which are all I have access to.

Q Okay. So there is information that the Environmental Protection Agency has about products that you don't have access to?

A There is information which they may have which I don't have access to. I have no idea if they do have such information, only that they may keep it protected.

Q Let me ask you a couple of questions. That's a chart that Mr. Baldwin made up for you. This is one through eighteen. Let me take this out of here real quick -- a little

acrobatics here -- and put it back up (at easel). These articles, Dr. Teitelbaum, one through eighteen, are they all published?

A I think everything that's on there is a published article, yes.

Q Open to everyone in the public?

A Yes.

Q The data that's contained in these articles is open to everyone in the public?

A Yes.

Q So all the information on all these scientific theories in which we discussed this morning are available to everyone in the public?

A With the exception of the Dow documents that we discussed this morning, that's correct.

Q And all the data that's contained in those papers could be reviewed by anyone who wanted to read the papers?

A Yes.

Q That includes the scientists and the people in the Environmental Protection Agency, doesn't it?

A Yes.

Q And isn't it a fact that the Environmental Protection Agency reviews all the papers and information that's out on a particular product?

A It has that responsibility. Whether it does that or not,

I can't answer.

Q But it has the responsibility to review the literature that's out in the open public when they review the herbicides?

A Yes.

Q So would it be fair to say -- you've made some assumptions today -- that the EPA did its duty and reviewed those articles?

A No, I wouldn't make that assumption. I have no way of knowing if they did or didn't.

Q But you did make the assumption that my client did not send certain information to the EPA, but you will not make the assumption, Dr. Teitelbaum, that all that information, that the EPA didn't follow its duty and review it?

A I don't see any parallel between the two. I can only tell you that having seen the file as late as two years ago, I found no information regarding any of this, nor have I ever seen a publication regarding the Dow information -- any publication, anywhere, in any language.

Q Let me get back real quick. Let me get back so we'll stick to my question, if you can answer those. Do you have any reason to doubt that the Environmental Protection Agency shirked its duty and did not review those articles?

A I have no opinion about that.

Q You have no opinion about that?

A That's correct.

Q Despite all these theories that are contained in those papers, and all the data that's out there in the public information, the EPA has never taken 2, 4-D off the market, has it?

A Correct.

Q It has never suspended the use of 2, 4-D?

A That's correct, also.

Q And never taken 2, 4-D off the shelves?

A Well, it has restricted certain uses, but that's correct, it's never said you couldn't use it at all.

Q So would it be fair to say that despite all that literature, 2, 4-D has been allowed to be sold in this country, the Environmental Protection Agency made that decision, and you have been able to buy it from the inception when it was invented until today?

A That's correct.

Q And despite all the theories that are contained in there, the EPA also determines what warning labels go on the product, is that correct?

A I'd rather say despite all the facts that are concerned in there.

Q Well, let me --

A And I agree with you --

Q Let me ask you another question so you don't have to argue with me, Dr. Teitelbaum. EPA has not changed its

labels to conform to what you think is necessary, isn't that correct?

A That's correct. It's what the California department felt was necessary.

Q Now, that's including the California. They haven't changed their labels on 2, 4-D, have they?

A That's correct.

Q Let's come back there and look. Put this one away for a second (at easel, moving charts), and put it back here. This big document Mr. Baldwin blew up for you, this is from that California report, isn't it?

A Yes.

Q When was that California report issued?

A 1980.

Q And that was a public report?

A Yes.

Q And would it be fair to say that it would be the duty of the EPA to review that report?

A I would certainly expect they would.

Q The recommendations listed in that report have not been accepted by the Environmental Protection Agency, have they?

A That's correct.

Q And California, despite that report, has not accepted those recommendations either, have they?

A That's correct.

Q As a matter of fact, let's take a look at this one. Now is this the label for 2, 4-D products as it appeared in 1980?

A That's what California used as its speciman label, that's correct.

Q And that's the label below it is what was recommended by the report and the label you say should be on 2, 4-D?

A That's right.

Q Now the label that should be on 2, 4-D products, you think that label should be on Dow's products as well as everyone else who makes 2, 4-D?

A That's correct.

Q The EPA has never required those warnings?

A That's right.

Q And that report has been out since 1980?

A That's correct.

Q And isn't it fair to say that this label right here (indicating), the label that was in effect in 1980 on 2, 4-D products, is basically the same label which the EPA requires to be put on today in 1987?

A It's about right, yes.

Q As a matter of fact, the EPA has made very few changes or required anymore warnings on Tordon 101 or 2, 4-D labels since 1975?

A That's right.

Q Dr. Teitelbaum, you believe in what is known as the "one-hit theory" when it comes to cancer, isn't that correct?

A Yes.

Q So your belief is that one molecule of a carcinogen substance, meaning one molecule of any cancer-causing substance, can cause cancer in a human being if that molecule is at the right place and the right time?

A It's a very simplified version, but, in general, that's correct, that the ultimate trigger for the development of cancer is the interaction between one molecule of the carcinogen and one molecule of DNA, that's correct.

Q Let's talk a little briefly about -- we'll get back to that. When was the first time that you were contacted in this case?

A In 1985, December, I believe.

Q And you didn't do any work on this case until the spring of 1987?

A That's correct.

Q And you never spoke to Mr. Greenhill, did you?

A That's right.

Q You never spoke to Mrs. Greenhill?

A That's correct.

Q You never spoke to any of Mr. Greenhill's family members?

A That's correct.

Q And you never spoke to any of his doctors?

A That's correct.

Q In fact, you didn't even know that you were named as a witness in this case until we took your deposition in June of 1987?

A That's correct.

Q But back in December of 1985 you and Mr. Baldwin both signed a retainer agreement?

A That's correct.

Q That agreement isn't good today, is it?

A It's --

Q Well, let me rephrase it.

A I am not sure I understand the question.

Q Your rates have gone up since 1985?

A I don't know what -- my rates have not changed in about two years. If you will tell me what rates are quoted there, I will tell you whether the Denver Clinic has raised the rate or it hasn't raised the rate.

Q Let's talk about a little how much you charge. How much do you get a day?

A The Denver Clinic charges $3,500 per day for every senior physician's time; that's myself and anyone else.

Q Let's stop a little with the Denver Clinic. You are a partner of the Denver Clinic?

A No, let's not stop, because I don't make the fees and I don't collect that money. That's collected by the Clinic, and I get approximately 46 percent of what's collected.

Q Okay. So even though the fees are payable to the clinic, you get 46 percent of what goes to the clinic?

A Approximately.

Q And you also share with your partners at the Clinic some of the money as well, don't you?

A There is no sharing. There has never been a surplus.

Q You get $3,500 a day?

A The Clinic gets $3,500 a day.

Q How much do you get an hour?

A Four hundred dollars ($400) an hour is what the Clinic charges.

Q Now according to your Retainer Agreement, after five p.m. your rates go up to $600 an hour?

A That's correct.

Q And anytime you work on a Saturday or a Sunday or a weekend, you get $600 an hour?

A No, that's not correct. It's only by the daily rate. If the daily rate doesn't apply, then the Clinic charges the additional rates. The same thing we charge if somebody goes in the intensive care unit and the doctor goes in at night and sees the patient in the middle of the night.

Q Okay. But why don't we stick to my questions. You get

$600 an hour after five o'clock?

A No, sir, because if I am working after five o'clock it's because we've got a full day's work, and that's at the daily rate.

Q Okay. Take a look at this. And you have paralegals who work for you?

A I have one paralegal who works for the Denver Clinic, not for me.

Q How much does the paralegal charge?

A I really don't know what rate was quoted there. About $80 an hour, if I recall.

Q So your paralegals get approximately -- your paralegal -- gets approximately $80 an hour?

A That's what the Clinic charges, yes.

Q Do you have any lawyers in your Clinic?

A No.

Q Just doctors?

A Just doctors.

Q Now you also charge for your travel time, don't you?

A The charge for travel time is the same as any other time.

Q Do you charge for your expenses?

A Expenses are charged for.

Q Okay. And expenses other than travel, you had a 50 percent surcharge on that?

A No, that's not correct. The only thing we charge 50 percent is for data base searching where we have overhead charges that we absorb. There is no charge over the original charge. That is simply an error.

Q That's an error, but it does appear in your Retainer Agreement?

A Yes, but it's never been charged since the day the retainer was written.

Q So the Retainer Agreement in which you signed with Mr. Baldwin that says "travel expenses cost, expenses other than travel, cost plus 50 percent," is an error?

A That's an error. It only relates to data base searching.

Q Well, this Denver Clinic is pretty well geared to do legal-medical litigation, isn't it?

A Denver Clinic is a very large organization. There are eighty physicians, and we, unfortunately, are all of us often in court. It's just the way medicine is these days, and so we are well geared, we have to be.

Q We'll talk about this, but let's talk about your operation that you have. You charge for Xerox copying?

A We charge for everything.

Q How much do you get per page for Xeroxing?

A I have no idea.

Q Maybe I can refresh your recollection.

A Thank you, please do.

Q Thirty-five cents a page for Xeroxing?

A That sounds like what they charge.

Q Inter-library loans, cost plus $2.00. Secretarial, $40.00 an hour. Does that sound about right, what you charge the lawyers?

A That's what Denver Clinic charges. That's what it says; that's what they charge.

Q And technical reference consultant, they get $115 an hour?

A That's right.

Q Copies from microfiche, $.50 per copy. And I think you also have indicated here expenses, but you say that's an error. And of these expenses there is a 50 percent surcharge, according to this Retainer Agreement?

A Only on data base searching.

Q But that's a 50 percent charge for that?

A Correct. That's on what generally runs around $2.00 an hour for data base searching, so we charge $3.00 because of our subscription costs.

Q Let's talk about you personally, Dr. Teitelbaum --

A Please do.

Q -- you know you mentioned your patients. You make about 50 percent of your income from this legal-medical functions, don't you?

A No, I make 50 percent of my income from total consulting,

which includes medical-legal, government agencies, business consulting -- anything other than direct patient care.

Q Okay, we will go on with that more. Now, you have a flat rate, isn't it correct that when you have one of your cases if you are scheduled for a deposition, there is a minimum half a day charge?

A That's correct.

Q And if it goes after a certain amount of time, it goes to the full day charge?

A That's right.

Q If the deposition gets cancelled, I think you have an elaborate system here. If the deposition gets cancelled more than one week prior, you still charge $300; if it gets cancelled forty-eight hours before, you charge one-half the schedule charge agreement; and if it gets cancelled less than forty-eight hours, you must pay a full amount for the day, is that correct?

A That's correct.

Q Is it fair to say, Doctor, that you average -- you are deposed on the average of 25 times a year?

A That's about right.

Q And when I say "deposition," that's testimony that you give in a legal proceeding?

A Not necessarily. It may be a regulatory agency; it may be some other kind of thing. But it's a legal, formal

activity.

Q Well, Doctor, how many lawsuits have you been involved with last year?

A I'm not sure I understand the question.

Q How many lawsuits were you hired by by lawyers last year?

A The Clinic, our group --

Q You personally, Dr. Teitelbaum?

A No, I can't. I don't know.

Q You don't know?

A What I can give you is what the group, the three toxicologists have. We currently are at approximately number fourteen hundred. When I came to the Clinic in 1982 we started the series at eight hundred; so that means there are six hundred cases that have come in since 1982 among three physicians. That's the best I can give you.

Q Well, let's go to you personally, because you say you've been deposed about twenty-five times this year.

A Right. No, not this year.

Q Last year?

A That's last year.

Q Because you have been in Israel?

A That's right.

Q Twenty-five times last year. Would it be fair to say that most of those depositions go a day?

Q In addition to the lawsuits, you do consulting?

A Right.

Q And you charge for that. You do reviewing of medical records that aren't in a lawsuit yet, and you do literature searches for lawyers to get their lawsuits ready, and that doesn't consider a case that you have for a year?

A No, that's not my work. That's other peoples' work, so don't put that on me.

Q It's in your clinic?

A But that's not mine. I don't get that money.

Q You also review your paralegal's work at your clinic, don't you?

A I don't review her work. She does her own work. And I don't get that money, either.

Q Well, wouldn't it be fair to say, Doctor, that you make a pretty good living out of testifying?

A I make a pretty good living but not out of testifying. My income is about $150,000 a year, total income from everything that I do.

Q And more than half of that income is from testifying?

A No, about half of it.

Q About half of it.

A And not from testifying. From all of my medical-legal work.

Q How did you get to Marshall, Texas?

A Mr. Baldwin called me up.

Q And how did you come here, by commercial flight?

A I came here by commercial flight, yes.

Q On other occasions has Mr. Baldwin brought you to and from? How did you get home from your deposition?

A Never -- never. I wouldn't go in his airplane. He's a lovely man. I don't fly in private airplanes, and we had a nice discussion about that, but I wouldn't go in his airplane.

Q You fly commercial?

A Right, I fly commercial. I trust United Airlines better than anybody else.

Q But not the Environmental Protection Agency?

A I don't think United Airlines is a government agency, and I do trust the Environmental Protection Agency. But you asked me some questions that I have no information about.

Q Why don't we stick with the questions so we don't have to argue. You are not a pathologist, is that correct?

A That's correct.

Q You personally could not make a diagnosis of Mr. Greenhill's disease from the slides?

A On the contrary. Any physician can make that diagnosis if he knows the criteria and he looks at the slide. I explained to you that I am a licensed, interstate laboratory director in hematology. I looked at the slides. I could not make a diagnosis because I couldn't find Reed-Sternberg

cells, so I sent it to other people.

Q As a matter of fact, in this particular case you felt that you were not qualified to make a diagnosis of Mr. Greenhill's illness?

A Based on the slides, that's correct.

Q And you sent it out to other people because you felt you weren't qualified to analyze the slides?

A That's correct, I sent it to two other pathologists because I wasn't happy.

Q Now, you are not Board certified in internal medicine, are you?

A Correct.

Q You are not Board certified as a hematologist, are you?

A That's correct.

Q And you understand what I mean by "Board certified," Doctor?

A Yes.

Q That means you are certified by the American Board of Medical Specialties, that's what it means?

A That's what you mean, yes.

Q You are not certified by that Board for oncology, the study of cancer?

A That's correct.

Q And that's a specialty, oncology, which deals with tumors and cancers, isn't that correct?

A Treatment of tumors and cancer, yes.
Q You are not certified in that?
A That's correct.
Q Now what is epidemiology?
A Epidemiology is the science of diseases in large populations.
Q You are not certified in that either, are you?
A There isn't any certification in epidemiology, so I don't think anybody is certified in it.
Q Well, you don't consider yourself an epidemiologist?
A No.
Q You are not Board certified, Dr. Teitelbaum, in occupational or preventive medicine, are you?
A Correct.
Q Now what is dermatology?
A Dermatology is a skin disease, a study of skin diseases.
Q You are not Board certified in the study of skin diseases, either?
A Certainly not.
Q There was a lot of talk this morning about neurology. You are not Board certified in neurology, are you?
A No, I'm not.
Q And that's the specialty that involves nervous disorders?
A That's correct.
Q Psychiatry, you are not Board certified in that either?

A I don't think that psychiatry is involved in this case, but you are correct, I am not a psychiatrist.

Q Wouldn't it be fair to say, so I won't bore the Jury, that you are not Board certified by the American Board of Medical Specialties in any area?

A I think we agreed on that way back in direct examination. I am certified only by the American Board of Medical Toxicology.

Q Now let's talk about chemistry. You talked a lot about chemistry today. You, yourself, are not a chemist?

A Correct.

Q Now moving on to an area I am going to go nice and slow so I can understand it and the Jury can. Now, in your opinion, Doctor, the cause is the same for all cancers, isn't that correct?

A I haven't the faintest idea what you mean by that question.

Q Okay, that's good. If you don't understand it, the Jury won't understand it. In your opinion, the etiology is the same for all cancers -- cancers are caused by carcinogens and a carcinogen can cause any form of cancer?

A That's your testimony. I never said that, and I don't believe that.

Q Let's go -- let's go through this again. I'll go back again. Causation --

A Okay.

Q -- is it your opinion that a causation is established through an association, a mere association?

A Sometimes.

Q So if a study is done on animals, like rats or mice, and showed that the rats and mice get malignant tumors, that's good enough for you to say that it would cause tumors in men?

A Not necessarily.

Q That's a pretty broad generalization?

A Well, wait a minute. Let me answer, finish answering the question.

Q Well, let me -- I'll rephrase the question.

THE COURT: Let the witness answer the question.

MR. ORTEGO: Okay, Judge.

A When you asked me whether tumors appearing in animals has anything to do with cancer in man, I would have to say to you, what kind of tumors, what kinds of animals, what kind of study, what dosage levels? And if what we found were malignant tumors in two animal species in a properly done study, I would conclude that there was at least a reasonable probability that that substance would at some dose cause cancer in humans -- not tumors, malignant tumors.

Q Let me go back to something that I understand. Just because a substance causes cancer in animals in a laboratory

doesn't necessarily mean it causes cancer in man?

A It's highly likely to do so. Unless man happens not to have a particular enzyme system, a particular enzyme system which a very special animal species has, it is likely that that substance at some dosage will cause cancer in man.

Q Let's pick some substances because you draw the association from these studies, because it causes cancer in animals it must cause cancer in man. Trichloroethylene is a cleaning solvent, isn't it?

A I don't believe that trichloroethylene causes cancer in man. It has only been shown to cause it in one animal specie, not in two; it's not a well done study, and it will not stand up to review. I do not happen to think trichloroethylene causes cancer in man.

Q But it does cause cancer in some animals, but doesn't cause cancer in humans?

A In one single animal specie does not meet the criteria of two animal species at varying dosage. It is not a valid -- it would not be a substance I would make that conclusion.

Q Now for you the strongest evidence that a substance can produce cancer is if you can produce cancer repeatedly in one or more animal species with a particular chemical or virus, isn't that correct?

A I never said that, and I certainly don't agree with it.

Q Maybe I will read your deposition testimony and see if

this helps you out. I'll come back to this. I'll give you the pages when I can come back to it; it will be easier. Now the weakest evidence for cancer in your mind, Doctor, is epidemiological evidence?

A That's correct, unless it is so clear, as with benzene, that there can be no reasonable doubt.

Q Okay. But except for cases like benzene, you think that's the weakest evidence?

A In general, I think that's weak evidence, yes.

Q Epidemiological evidence comes from the study, from studying the history of a disease in the human population, doesn't it?

A That's not what I said. I said it's the study of diseases in large populations; not history of diseases, or anything of that sort.

Q Well, you are not an epidemiologist, so you wouldn't be qualified to interpret these things, would you?

A Well, I disagree with you. I taught epidemiology for two years. I'm certainly competent to interpret those studies. I was a medical school professor in epidemiology, and although I do not practice as an epidemiologist, I certainly can read the literature and understand it.

Q Let's go on to another area. Generally speaking, Doctor, you believe that anything which increases the risk of cancer is capable of causing Hodgkin's disease, isn't that

correct?

A In a general sense, that's correct, yes.

Q Besides 2, 4-D, besides that, you also believe that any substance which is carcinogenic, meaning cancer-causing, would also be a contributing cause to Mr. Greenhill's Hodgkin's disease?

A That's certainly a possibility.

Q Now regarding 2, 4-D, you believe that it causes cancer in humans, isn't that correct?

A That's correct.

Q But despite your belief, isn't it a fact that the Environmental Protection Agency allows certain levels of 2, 4-D on our food?

A That's their problem, not mine.

Q But they do allow it, sir, don't they?

A They have tolerances for it.

Q They do, don't they?

A That's correct.

Q And you base that belief of yours, that 2, 4-D causes cancer, on animal studies that show it as mutagenic and clastogenic in animals, isn't that correct?

A And studies which have shown that it causes lympho-sacormas and reticulum-cell sarcomas.

Q And you base that on the basic science on animals that suggests it appears to be carcinogenic in animals?

A That's one of the pillars of the belief, yes.

Q And from one of these studies you conclude that if one of the causal factors for -- and from these studies you conclude that it is one of the causal factors for lymphomas, isn't that correct?

A I am not sure I follow your logic. I think you will have to explain to me what it is you are asking me.

Q Well, I guess it's your opinion, Doctor, if 2, 4-D produces cancer in animals it must produce cancer in human beings, is that your testimony?

A No, it can produce cancer in human beings.

Q It can produce cancer?

A Yes. In other words, at some dosage in some people a substance which has caused cancer in two animal species at varying doses has the potential to cause cancer in humans. That's what I believe.

Q So there are a number of substances which you believe that can cause cancer in humans, isn't that correct?

A Yes.

Q Now you believe that if one of those substances, which are cancer-causing substance, hits you at the right time in the right place, you can get cancer, isn't that correct?

A That's correct.

Q So that means if a person gets one molecule of a cancer-causing substance in the right place in the right time,

according to you, cancer can develop?

A Yes. I think I have agreed with that three times, now.

Q So any molecule that could be cancer-causing in your opinion, if that molecule gets our bodies at the right time in the right place, it can cause cancer?

A I guess I've said it four times now. Yes, I agree with that general statement.

Q And it's your opinion, Doctor, if it can cause cancer, it must cause Hodgkin's disease?

A No, it might cause Hodgkin's disease.

Q Might cause Hodgkin's.

A Hodgkin's disease is a cancer, it's a cancer of the lymphatics, and therefore a substance which has the potential for causing cancer could, in theory, cause Hodgkin's disease.

Q So with your theory, the one-hit theory, one molecule in the right time, it doesn't matter what substance gets you. If it's a carcinogenic substance and it gets you at the right place and the right time, you are going to get cancer?

A Well, it does matter, because the opportunity for coming in contact with carcinogens varies for many people. A vinyl chloride worker, for instance, is going to be exposed to enormous amounts of vinyl chloride in comparison to the average person, and he may get angiosarcoma of the liver, and the most probable cause of that angiosarcoma of the liver is the vinyl chloride. So that's how one makes the

conclusion that the vinyl chloride is the likely cause in that case. However, in somebody who doesn't work with vinyl chloride, to assume that it's vinyl chloride that produced it would be ridiculous, and I don't make that kind of an assumption.

Q Let's go back a little. One molecule in the right place at the right time can do it, correct? It doen't matter whether you work with vinyl chloride, but if that one molecule gets you at the right time and in the right place you can get cancer, that's your theory?

A Well, I think that you now have distorted my theory, and I -- I don't think I can agree with you now. I have stated it. I'll be happy to restate it, if you'd like me to.

Q Okay. We'll come back to that a little later on your theory. The Hardell papers that you discussed earlier say that 2, 4-D is associated with lymphoma, isn't that correct?

A The Hardell papers say that the risk for cancer in people who have worked with chlorophenoxy acids, including 2, 4-D, is substantially increased to the rate of six or so. I don't know what you -- where you are quoting associated with, but if you show me that I'll be happy to consider the phrase or the sentence that he said that in.

Q And that paper came out in 1979?

A Which paper?

Q Hardell papers? One of them came out in '79?

A Well, you have to show me which paper. As you know, we've said he wrote seven papers. Now you have to show me which paper you want to talk about.

Q And, as we discussed earlier, those papers have been available to the scientific community world-wide when they came out?

A That's correct.

Q And isn't it a fact scientists and doctors in general could have gotten a copy of these studies?

A I would assume that anybody who was interested has read the papers. They are available in any library.

Q Scientists and doctors from the International Agency for Research on Cancer could have gotten a copy of this document -- these documents, too?

A In what year?

Q In the '70s?

A In the '70s, yes. I think they did their report in 1977, and I think Dr. Hardell's work was mostly after 1977.

Q Okay.

A So I don't think --

Q Now that agency --

A I'm sorry, I didn't quite finish. So I don't think that they had an opportunity when they did their review to look at

his papers which came after 1977, which is the majority of them.

Q But they've had an opportunity, in your opinion, since then to review those papers?

A I don't believe they have ever addressed 2, 4-D again since that date.

Q Isn't it a fact, sir, that that agency has never fully accepted Hardell's papers?

A I have no idea. There is no report since 1977, so I couldn't make that assumption.

Q In fact, these Hardell papers, haven't they been severely criticized by the scientific community for having built-in biases and faulty scientific techniques by various scientists? Isn't that a fact, Doctor, yes or no?

A I think that I have answered that in great detail during the direct, that each time he was criticized, and he has been criticized repeatedly, he has come back, republished studies which answer the criticism. The most comprehensive summary of that is Coggon's paper, and Coggon says that we cannot ignore what Hardell says. That's the current status of Hardell's information. I would say that it is generally accepted that the risk which he described is real, that it exists, it was confirmed by Hoar's study; I don't think anybody seriously doubts it. There are arguments about how he did his study; those are all technical. But every study

since it has confirmed what he said.

Q Well, isn't it a fact, Doctor, that there has been no study that has been able to duplicate his conclusion on 2, 4-D and Hodgkin's disease?

A I think that's what Dr. Hoar's study did.

Q Well, didn't Dr. Hoar's study specifically say that she was unable to substantiate his findings that 2, 4-D causes Hodgkin's disease?

A She certainly did, and we have discussed that also. But --

Q Her conclusion was --

A -- she agreed with the lymphoma portion.

Q But her conclusion was that there was no evidence to support the fact that 2, 4-D was associated with Hodgkin's disease?

A From her study. From her study.

Q And that was her conclusion?

A From her study, that's correct. Not from his study. She didn't critique his study. She didn't answer that. Just her study, she couldn't make that statement.

Q She couldn't make that statement?

A And I agree with that, she couldn't make it from her study.

Q Now we discussed earlier about the Environmental Protection Agency. Dr. Teitelbaum, if you know, are 2, 4-D

products still sold and used today in this country?

A Yes.

Q Aren't they used in enormous quantities?

A I don't know the quantities. I haven't looked at this year's sales figures, but they are substantial.

Q Can anyone, including a nine year old child, go down to the store right here at Brookshire's or whatever, and buy a weed killer with 2, 4-D in it today?

A I don't know what the laws in Texas, and I really don't know whether they would sell it to a child or not. But I suspect any adult could go in and buy it anytime.

Q Isn't it highly probable, Dr. Teitelbaum, as you sit here now, every one of us here in this room, people in the jury box, have been exposed to 2, 4-D somewhere?

A At some time in our lives, perhaps. I wouldn't say it's highly probable, but it's perhaps so.

Q Isn't 2, 4-D used widely across America today to kill weeds in our home, or lawns, golf courses, right-of-ways, and a lot of other grassy areas?

A Goodness, you sound like an advertising brochure. No, I -- I don't think so.

Q You don't think so?

A I don't think so. I think there is less and less use of it. I think that it's certainly used on right-of-ways; it's certainly used on railroads, but I can tell you that in

my part of Colorado, almost nobody uses it around the home because of the problems that the people are aware of, even if you don't seem to be so aware of them.

Q Well, I am aware of them and I use them. Let me ask you this: don't farmers use 2, 4-D on crops that we eat?

A Some farmers use 2, 4-D, but again, in Colorado relatively little 2, 4-D compared to other herbicides.

Q And as a matter of fact, didn't Dr. Hoar study the farmers who used 2, 4-D in Kansas and she found that she could not conclude that the farmers who were exposed to enormous amounts of 2, 4-D there was any association with Hodgkin's disease, isn't that correct?

A Well, I think we'd better define what "enormous amounts" are. We are talking about farmers who were exposed twenty days a year.

Q For years.

A That's not enormous.

Q It's not?

A No. Her study is anyone who was exposed at least twenty days, and I don't know how many of her people were exposed only twenty days. Now, Mr. Greenhill was exposed for at least two years, and perhaps a third season, three months, daily, a lot more than twenty days.

Q Are you sure about that?

A That's about what I got from his deposition.

Q Okay. Did you ever review his records that indicate exactly what he used in the Forest Service?

A No, I have not seen his records of what showed exactly what he used in the Forest Service.

Q Now it's your opinion, also, that radon gas causes lymphomas, isn't it?

A Yes. I think that's generally accepted, and it certainly is my opinion.

Q And that radon gas has caused lymphomas since man existed, isn't that right?

A I would think so, yes.

Q And isn't it fair to say that you would find radon gas all over this country wherever there is subsurface granite formations?

A Generally that's believed to be so.

Q Now Hodgkin's disease, it's named after Dr. Thomas Hodgkin, isn't it?

A Yes.

Q And Dr. Hodgkin described that disease in the late 1800s?

A 1832. That's early 1800s. Dr. Pearce pointed that out to me some time ago.

Q And that disease that Dr. Hodgkin discovered has been around long before he ever discovered it, isn't that correct?

A Well, there is absolutely no way of knowing that. I

mean, perhaps that was the first time the disease ever existed. I really couldn't answer that question.

Q Well, would it be fair to say, I mean I'm just trying to be reasonable, that if he discovered it in the 1800s it must have existed some time before?

A I have no opinion about that. That may have been the first case that ever occurred.

Q Would it be fair to say that Hodgkin's disease, the disease that was described, existed long before 2, 4-D was ever put on the market?

A I would certainly agree with that.

Q And in the 1930s there was no 2, 4-D on the market, was there?

A Not before 1941, I think.

Q And before the 2, 4-D was put on the market, people got Hodgkin's disease and people got lymphomas?

A That's correct, for many reasons.

Q And you think the reasons were they were probably caused by radiation or benzene?

A That's among the reasons. I think that there are many other suggestions that have been made, ranging from tuberculosis, to viruses, to arsenic, to other kinds of environmental chemicals. I would agree with you that there are external causes, something outside the person, which has caused Hodgkin's disease long before 2, 4-D was -- came

on the market. I do not think it is the only cause of Hodgkin's disease, by any means.

Q All those factors which were present before 2, 4-D ever came on the market, are generally still present today in the environment, aren't they?

A No, not necessarily. It's very rare to have tuberculosis rampant within the American population. For instance, it's extremely rare to have arsenical treatment. You almost don't see it anymore. Many of the things which were associated with Hodgkin's disease prior to, let's say, 1920, are not used in any industry any longer. And I would say that your assumption is an incorrect one, that most of those things are still present.

Q How about this assumption: that the things that might have been causing Hodgkin's disease before 2, 4-D ever came around are still here today, some of those? You have to agree to that?

A I would agree that some of them are still here and still cause Hodgkin's disease.

Q And all the kinds of cancer-causing substances which exist today and which you say may cause cancer, they were all present in the environment long before 2, 4-D was around?

A Oh, no, certainly not. Certainly not.

Q They weren't?

A Well, for instance, all of these products which are

present as impurities, which are unique to the process of chlorination of phenols, weren't around. Those are manufactured products, and many of the chemicals which can be associated with the causes of cancer, like vinyl chloride, did not exist before some chemical company produced them and put them in the environment.

Q Why don't we, so we don't argue over this, let's go back to another area. I can come back to this. Mr. Greenhill died of Hodgkin's disease, didn't he?

A Mr. Greenhill died of a malignant lymphoma, most consistent with Hodgkin's disease.

Q Most consistent of Hodgkin's disease?

A Right.

Q Now you sent these slides when you got them, when you couldn't read them and you felt you weren't qualified to render a diagnosis, to two pathologists, correct?

A That's correct.

Q Who were the two pathologists?

A Dr. Howland and to Dr. Morgan.

Q Dr. Morgan found Mr. Greenhill died of Hodgkin's disease?

A That's correct.

Q And you sent the slides --

A He said "it's most consistent with Hodgkin's disease."

Q And you sent the slides to him?

A That's correct.

Q You also sent the slides to someone else, Dr. Howland?

A Right.

Q And he found -- at first he wasn't sure, but then later he determined he felt it was Hodgkin's disease, isn't that true?

A No, he felt it was most consistent with Hodgkin's disease. He found none of the Reed-Sternberg cells. He did not feel that it was characteristic, and he would not make that diagnosis. You see the record as well as I do.

Q He felt it was consistent with Hodgkin's disease, he showed it to all his colleagues and they felt it was consistent with Hodgkin's disease?

A But that they never saw any Reed-Sternberg cells, which are essential for making the diagnosis.

MR. ORTEGO: Judge, could I have a ten minute break? Would that be appropriate now?

THE COURT: All right.

MR. ORTEGO: I think I might be able to organize a little and be more speedy.

THE COURT: All right. We will take a ten minute break. Be back in the jury box at twenty minutes till three.

(Recess at 2:30 p.m., until 2:40 p.m.; open court, jury and all parties present.)

THE COURT: Please be seated.

CROSS EXAMINATION CONTINUES

BY MR. ORTEGO:

Q Dr. Teitelbaum, one thing I left off earlier, isn't it your opinion that the strongest evidence that a substance could cause cancer in man is if you can produce the cancer repeatedly in one or more animal species with a particular chemical or virus? Wouldn't that be the best evidence that a particular substance is cancer-causing?

A It wouldn't be the best evidence that it is cancer-causing in man if it were only in one animal specie.

Q Let me read from your deposition. The question I asked you --

MR. BALDWIN, SR.: What page?

MR. ORTEGO: Page 15.

Q And the answer you gave. "What is the strongest evidence?" "The strongest evidence is if you can produce cancer repeatedly in one or more animal species with a particular chemical or virus, that would be the best evidence that a material is carcinogenic."

A Yes, but that is not in humans. That's that it is carcinogenic, period, not in humans. You have to have two animal species before you can conclude that it is carcinogenic in humans. I don't think there is any question in my mind, anyway, that trichloroethylene is carcinogenic in one mouse specie where it's been tested.

Q Well, as a lay person, let me ask you a simple question. If animals -- if you produce cancer in animals, it doesn't necessarily mean man is going to get cancer from that substance, isn't that correct then?

A Well, at the dosage that it was used in the animals and under certain circumstances, you could come to that conclusion. But, if you take a particular substance, for instance, one of the amines that causes bladder cancer in man, and you test it in animals, particularly let's say in rats and mice, you never get bladder cancer; and the reason you don't get bladder cancer is the mice don't have the enzyme system which allows the substance, it's called anhydroxylation, of the vinyl chlor -- of the -- of the amine to be protected so that it reaches the bladder in those animals. What it does is it causes liver cancer in those animals, but it doesn't cause liver cancer in man because man handles it differently.

Q Well, let me get back because I really don't understand what you said to me, so I will try to get it into my terms here. So a lot of times when you have studies that show that cancer was produced in rats, you inject them with things, it doesn't necessarily mean that man could get cancer from those same substances. There are a lot of factors that come into play, is that fair to say?

A I think I've tried, and I guess I haven't quite gotten

it across to you --

THE COURT: Just answer the question, Doctor.

Q Is that correct?

A You have to have two species.

Q Is that correct, my statement?

A No, it's not correct.

Q Fine. I'll move on.

A You have to have two species.

Q I'll move to my next question, Doctor, so we can keep going. Now Doctor Morgan, the doctor you sent the slides to to diagnose, made up new slides from the tissue?

A That's correct, he recut the block.

Q What he did was -- is take the tissue and recut the block to get a better look at the tissue, isn't that correct?

A That's correct.

Q And when he got a better look at the tissue, when he was able to examine it by creating new slides of Mr. Greenhill's body, he found Hodgkin's disease, isn't that correct?

A That's what he said.

Q Have you ever heard of M. D. Anderson, M. J. Anderson Cancer Center?

A M. D. Anderson.

Q Thank you. You have heard of it?

A Yes.

Q Pretty renowned hospital for cancer here in Texas?
A Very good hospital, yes.
Q As a matter of fact, you have heard of Dr. Butler, haven't you?
A Yes.
Q He is a very famous pathologist?
A I guess I don't know what you mean by "very famous." He is certainly a well-known pathologist. I -- I don't know what that means.
Q Well-known enough that you working in Israel and you in Denver, and he's from Texas, you know who he is?
A Sure do.
Q Dr. Butler, who is not an expert in this case, the people in Arkansas sent him Mr. Greenhill's slides to find out what kind of disease he had, isn't that correct?
A That's what they did, yes.
Q And unlike yourself, he wasn't an expert in this case. One of Mr. Greenhill's treating physicians sent the slides to Dr. Butler at Anderson and asked him, "What does my patient have?" Isn't that correct?
A That's what he did, yes.
Q And Dr. Butler, from that famous cancer institute in Texas, looked at the slides and he diagnosed Hodgkin's disease?
A I believe that's correct, yes.

Q Would it be fair to say that Dr. Butler is more qualified than you are --

A Than I am --

Q -- a pathologist, to analyze Mr. Greenhill's slides?

A Certainly more qualified than I am.

Q Do you still think that the diagnosis of Hodgkin's disease is still in doubt?

A I think so. I think that the fact that the pathologists at Denver Clinic --

Q Well, the question I guess is -- I'll ask you to explain it.

THE COURT: Let him answer the question.

MR. ORTEGO: Okay, Judge.

A I think that the pathologists at Denver Clinic who had the opportunity to go back and look at the new slides which Dr. Morgan prepared and could not find diagnostic Reed-Sternberg cells, leaves the diagnosis still in question; and that they gave their best opinion, which is that it's most consistent with. And I think there is some doubt, yes.

Q Dr. Butler, he diagnosed -- he made a diagnosis on his report, Hodgkin's disease, correct?

A Yes.

Q Do you think he's incorrect?

A I think that based on the tissues which are currently available that there is reason for doubt.

Q And you think he might be incorrect?

A I think it's possible yes.

Q Dr. Morgan, who you hired to send the slides to to examine them, who diagnosed Hodgkin's disease, do you think he's incorrect?

A I think that there is reasonable doubt among a group of approximately ten pathologists who have differences of opinion. That's typical of what happens, and I think there is doubt left there. I think that it is clearly a malignant lymphoma, and it's most consistent with Hodgkin's disease. That's what I said, and that's what the pathologists at Denver Clinic said, and that's where I think the diagnosis lies.

Q The two pathologists, not to beat a point to death, that you sent the slides to, both gave the diagnosis of Hodgkin's disease?

A No, I think you have to reread what Dr. Howland said. He said "most consistent with Hodgkin's disease." I really think it's not fair to not read his diagnosis exactly as he put it.

Q Okay, most consistent?

A Right, most consistent.

Q At your deposition didn't you state that Mr. Greenhill had Hodgkin's disease, Stage 4-A, the worst and last stage of that disease?

A 4-B is the worst and last stage, and I think that's very likely at a Stage 4-B lymphoma, most consistent with Hodgkin's disease.

Q I am going to give you a copy of Dr. Howland. Dr. Howland originally sent you a report, did he not?

A I have the reports here, yes.

Q And the second report he sent to you. Can you read that to the Jury, the second report he sent to you?

A Which part of the second report? I have it.

Q You can read from "comment," here first. Read that section right there, "Comment."

A Wait, wait, wait. Let's make sure I have the same report you have. This is which one, the June report?

Q The second report.

A This is 6-12, okay.

Q The report that was completed two days after we took your deposition.

A I think I read it before. I will read it again.

Q Could you read it again for us?

A "I now believe that my original diagnosis of small cell lymphoma was incorrect after reviewing this additional material. I am unable to find a cell that I would accept as a Reed-Sternberg cell, and thus cannot make a definitive diagnosis of Hodgkin's disease. I believe, however, that the type of infiltrate and histologic progression of the

disease with its various patterns are most compatible with diagnosis of Hodgkin's disease, and are less compatible with the diagnosis of non-Hodgkin's lymphoma. I do not believe that it is possible to accurately subclassify the process, but believe that the differential includes lymphocyte predominance and nodular sclerosing subtypes. I took the liberty to show the sections to Dr. Henry Chu, hematapathologist at the University of Colorado School of Medicine. He was also unable to classify the lymphoma, but favored Hodgkin's disease. Dr. Ault and Meyer have reviewed the sections, with both now favoring a diagnosis of Hodgkin's disease, probable nodular sclerosing varient."

Q He also put an addendum to the report, did he not, on the second page? Can you read that as well?

A That's the whole report that I have. That's where it ends.

Q Well, let me show you the second page of the report.

A That is the second page.

Q Didn't Mr. Baldwin give you this page, or have you not seen this (tendering)?

A I -- I --

Q Well, I think you are missing a part. That's Dr. Howland's signature, isn't it, Doctor?

A Sure.

Q Can you read the other section that you didn't have?

A "After reviewing reprocessed tissue from this case, along with additional slides and clinical history, the original diagnosis of small cell lymphoma and the subsequent comment no longer adequately convey my impression with regards to the entire case. See Report 87DC784 for further details,"which is what we just read. It's just a cover memo.

Q Now, you've -- I'll take that back from you. You have reviewed or read Mr. Greenhill's deposition?

A Yes.

Q What did he describe the illness he said he had?

A He said he had lymphoma, and he thinks he has Hodgkin's disease. I don't have the report exactly in front of me, but if you give me the deposition I'll be happy to find the section.

Q Isn't it a fact that he said he had Hodgkin's disease, and gave the specific stage, number and letter in his deposition, if you've read it?

A I think he did, 4-A, if I recall. No, 4-B. He said "4-B."

Q So would it be fair to say after you've just read Dr. Howland's report, that after he had a chance to review the new slides, he changed his mind and felt it was Hodgkin's disease?

A I can only read what Dr. Howland said, and I have read it now three times. I'll read it a third time. He says that

it is less compatible -- what he says again is "I believe that the type of infiltrate and histologic progression of the disease with its various patterns are most compatible with a diagnosis of Hodgkin's disease and less compatible with a diagnosis of non-Hodgkin's lymphoma. That's what I agreed to. That's exactly what I said seems to be the situation.

Q Do you still have any doubt that it's Hodgkin's disease?

A I have doubt that this group of approximately eight to ten pathologists have reached a consensus that this is Hodgkin's disease of a clearly acceptable type to all of them.

Q Okay. Now you have talked about xanthones today, this morning, as an impurity in 2, 4-D?

A That's correct.

Q Do you know of a single scientific paper, Doctor, that says "Tetrachloroxanthones are carcinogenic in humans"?

A I know that there are scientific papers which include the tetrachloroxanthones among the heterocyclics which are considered to be carcinogenic in animals. I know of none in humans.

Q You know of no study in humans that says that xanthones are carcinogenic, is that correct?

A There was never an identification until the month of April of '87 of this chemical compound, and there are no studies of it.

Q There are no studies?

A That's correct.

Q Do you know of any single, scientific paper that says that octochloroxanthones are carcinogenic in humans? Do you know of any papers?

A I know of no paper that says that.

Q Do you know of any papers which say any of these substances caused lymphomas in man?

A Yes, I know of papers which indicate that heterocyclic hydrocarbons cause lymphomas in man, and that derives from extensive work that's been done on benzopyrenes and all of the related compounds. And that is in the literature. I didn't happen to bring those with me today, but I think that there are numerous papers which we certainly could supply if you wanted them.

Q Let me ask you this question. You don't know of any papers that say -- and I will get the substances down, I took them down this morning -- tetrachloroxanthones and octochloroxanthones that say specifically that they are carcinogenic in man, or cause cancer?

A I know of no such papers, that's correct.

Q And you know of no such papers that say "these chemicals cause Hodgkin's disease or non-Hodgkin's lymphoma in man," isn't that correct?

A That's correct.

Q Xanthones, this thing that you talked about today, this terrible thing, xanthones, don't they naturally occur?

A Chlorinated xanthones do not naturally occur.

Q Other xanthones naturally occur?

A Chlorinated xanthones don't occur, and these are chlorinated xanthones, and they do not occur naturally.

Q But aren't xanthones used in medicine?

A Jension (pho) violet a xanthone, but it's not chlorinated and it is quite a toxic substance when taken internally.

Q Aren't there xanthones that you give to humans to kill worms when they get worms?

A Yes, and occasionally they kill the humans.

Q But they give it to humans to kill worms?

A Yes, they sure do, but they are not very safe drugs, and they are certainly not used very often.

Q But they are given to humans?

A That's correct.

Q Now, Doctor, xanthones are even used on people's teeth, aren't they?

A Well, you got me there. I don't know of any xanthones that are used on people's teeth.

Q Do you recall when we took your deposition we asked you to produce in this matter all the information you knew about xanthones?

A That's correct.

Q And you produced that to us?

A I asked my office to send you what we had. As far as I know there is only one reference.

Q Are you aware of this United States' patent to use xanthones to bond human's teeth?

A That has nothing to do with chlorinated xanthones, and that is the only thing I was talking about. And I know of no information at all, except a single literature entry on chlorinated xanthones. Xanthones in general, there is tons of information.

Q Let me show you this. Are these chlorinated xanthones right here on that page, those substances?

A No, sir.

Q But those are xanthones?

A One is an isopropylthyoxanthone. The next one is an isopropylthyoxanthone, then a trifluromethylthyoxanthone; the next one is a nitrothyoxanthone; here is a two chloro -- single chloroxanthone; then a chlorothyoxanthone. There are three monochlorothyoxanthones.

Q And what is that patent for? What do they want to use the xanthones for in that patent, Doctor?

A Looks like it's a primer.

Q For teeth?

A To bond teeth, that's what it looks like.

Q Yes. Thank you, Doctor. I will take it back from you.

A Well, I'd like to just read it for a second.

Q Well, if there is a question on it, your lawyer can ask you questions.

A He's not my lawyer.

Q You have never seen it before?

A Never seen that paper.

Q Well, he's not your lawyer. You have a retainer agreement with him, though?

MR. BALDWIN, SR.: Your Honor, I object to the side bar comment.

THE COURT: Yes, we don't need that.

MR. ORTEGO: I apologize to the Court, Your Honor.

THE COURT: We are doing mighty well without all that.

MR. ORTEGO: I apologize, sir.

(Mr. Ortego continuing:)

Q Doctor, Mr. Baldwin gave you this document 20 UU, the Dow document that you talked about, this xanthone document. I'd like you to take a look at this.

A I have it.

Q You have a copy, good. This is Plaintiffs' Exhibits 20 UU. Now, this document deals with the handling of 2,4,5,7 tetrachloroxanthone, is that correct? Am I reading it right?

A Xanthen-9-one, that's correct.

Q It doesn't deal with the handling of 2, 4-D, does it?

A It deals with this material, which, as it says, is an impurity at 20 to 100 ppm in 2, 4-D.

Q But it deals with this document, it deals with handling that thing in its pure form, isn't it correct?

A No, it deals with handling this in concentrations as low as .00001 percent.

Q Read the title to us.

A It says: "Acute Toxicological Properties and Industrial Handling Hazards of 2,4,5,7 Tetrachloroxanthone."

Q Industrial handling, correct?

A Yes.

Q And doesn't that same report indicate the oral toxicity which means if the material is eaten, if you eat it, the toxicity is low. Doesn't it say that in there?

A Yes. But I am not sure that is of any consequence for what we are talking about.

Q But if you eat it the toxicity is low?

A That's correct. Acute toxicity. That means that it doesn't kill acutely except in very large doses.

Q And when they speak about wearing protective clothing here, which you discussed, that's from lab workers working with large amounts of pure tetrachloroxanthone, isn't it?

A No, sir, that is not what it's for. It says that it is for this -- working with this material which occurs as an impurity at 10 to 100 ppm in 2, 4-D. And then it goes on

and it tells you what kinds precautions need to be taken when those kinds of concentrations are present. And we are talking about a 10 ppm solution which causes chloracne, and 10 ppm is less than the amounts present in 2, 4-D. So as I read this, it is talking about handling of 2,4-D which contains this material.

Q . Well, doesn't it talk about "a pale yellow solid sample of 2,4,5,7 tetrachloroxanthone was submitted to the Toxicology Research Laboratory"? Aren't they doing lab tests with this?

A Mr. Ortego, I think you need to turn to the next page --

Q Yes.

A -- where is says "Not handled as a pure compound but as a contaminant." I think --

Q Okay.

A -- that's the same problem I had with Dr. Howland's report, you don't have a whole report, maybe.

Q No, Dr. Teitelbaum, I have the whole report.

A Oh.

Q But they are really talking about xanthones themselves, not the product 2,4-D. You don't have to wear protective -- it doesn't say you have to wear protective clothing with you use 2,4-D in this document, does it?

A Mr. Ortego, it certainly does. It says "Not handled as a pure compound but as a contaminant." I -- I can't see

that there is any other question but that that's what it says.

Q Does it talk about dealing with 2,4-D, the final product here, sir?

A Yes.

Q In your opinion it does?

A It says: "This material, also known as 2,4,5,7 tetrachloro-9H," so on and so on, "is an impurity at 20 to 100 ppm in 2,4-D." It's right there in the first paragraph.

Q I don't want to spend the whole time arguing, but doesn't it say "A pale yellow solid sample of 2,4,5,7 tetrachloroxanthone was submitted to the Toxicology Research Laboratory," and doesn't it also go and say that skin tests indicate that it's not likely to be absorbed in acutely toxic amounts? Doesn't it also say that in there?

A I agree with that. There is no question about that in my mind.

Q There is no question, okay. Let's move on to another area for now. In your opinion, Dr. Teitelbaum, there are numerous substances which you believe are capable of causing cancer, aren't there?

A Yes.

Q And as far as you're concerned, Dr. Teitelbaum, you believe that if a substance could cause cancer it may cause Hodgkin's disease?

A That's correct.

Q Benzene, in your opinion, can cause cancer?

A That's correct.

Q So would it be fair to say that one molecule of benzene, according to your theory, could cause cancer?

A With the considerations that we previously discussed -- in the right place at the right time, yes, it can cause cancer.

Q Has benzene been found in strawberries?

A Yes.

Q So if a person ate a strawberry with only one molecule of benzene on it, it's possible, under your theory, that one molecule that I ate on my strawberry got to the right place at the right time, it can give me cancer and Hodgkin's disease?

A It's extraordinary -- extraordinarily improbable, but it is possible.

Q It's possible, according to your one-hit theory?

A It is extraordinarily improbable, but it is possible.

Q Cigarette smoking causes cancer?

A Yes, it does.

Q And under your opinion, then, if it causes cancer, it can cause Hodgkin's disease?

A There is an association between cigarette smoking and Hodgkin's disease, yes.

Q So when I go outside in the hallway and breathe in someone's cigarette smoke, I could be breathing in carcinogens, can't I?

A In a very theoretical sense, the answer to that is yes.

Q And according to your theory, if I breathe in someone else's cigarette smoke and that one molecule carcinogen gets me at the right place and the right time, I can get cancer?

A Again, very improbable; certainly possible.

Q But according to your theory it's possible that I can get cancer that way --

A Yes.

Q -- and I can also get Hodgkin's disease?

A It's certainly possible.

Q One molecule of radiation, in your opinion, at the right time and the right place, according to your theory, could give me cancer too, couldn't it?

A There is no such thing as a molecule of radiation. So I guess I don't know what you are asking me there.

Q Well, a molecule is a very small thing, isn't it?

A No, no - but radiation isn't measured in molecules, so we've got to talk about some other term.

Q There are thousands and maybe millions of molecules in one puff of cigarette smoke, aren't there?

A Yes.

Q So when I inhale that cigarette smoke out in the hallway,

I would be inhaling millions of molecules of carcinogens, that, according to your theory, might give me cancer?

A That's right.

Q Now the same is true for this radon gas. I inhale one molecule of radon gas, and if it's in the right place at the right time, I can get cancer or Hodgkin's disease?

A That's correct.

Q And when I go outside in the summer and barbeque myself a nice steak, according to you, there are carcinogens on my steak, aren't there?

A Not just according to me. I don't think there's any argument that the barbequing of beef produces some carcinogens; and, yes, that's correct, it does.

Q So when I decide to eat that nice steak and I eat that charcoal broiled steak, I am ingesting trillions of molecules of carcinogens?

A The vast majority of which will be inactivated and will have no effect, but some of which may have some effect, that's correct.

Q And according to your theory that if one of those molecules gets me at the right time, I am going to get cancer and maybe even Hodgkin's disease -- it's possible?

A Possibility.

Q Now this one-hit theory, this could pertain to other things. If I breathe some smoke from a local incinerator --

I go by in my car and I inhale smoke from the local incinerator, and I inhale that molecule and it gets me in the right place and the right time, according to your theory, I can get cancer or Hodgkin's disease?

A I think it's a silly example, and I don't think that there is any way I can make any such assumption. I am not aware that anybody goes around inhaling smoke voluntarily.

Q Well, do you think there are carcinogens in smoke that comes from municipal incinerators?

A Certainly are.

Q So if I am near a municipal incinerator and I inhale that air I can get cancer?

A It's extraordinarily improbable, but possible.

Q How about when I go to the dentist and I get x-rays done? According to your one-hit theory, if that x-ray gets me at the wrong time and I get that -- well, I guess it's not molecule -- but get that one hit at the right time in the right place, it can give me cancer?

A I think there is evidence that any x-rays do increase the risk of a population, but there's not much that says any individual's risk is very much increased. So, yes, I would agree with you that that is again possible, but extraordinarily improbable.

Q How about we go more to your examples? Let's say while I am eating my charcoal broiled steak I decide to have a beer

In your opinion, are there carcinogens in my beer?

A Not much.

Q But there are carcinogens?

A It depends. Some beers have asbestos in them because they use asbestos filters to filter the beer, so there is that possibility. And there are some beers that are baked, and when they are baked they do occasionally make some carcinogens in the baking process. But, again, it's extraordinarily improbable.

Q But according to your theory, if I drink that one beer and I get that one molecule and it gets me at the right time, I can get cancer?

A Yes, that's correct.

Q How about when I change the oil on my car? That has carcinogens in it, too?

A Yes.

Q And if while I am changing the oil on my car, according to your theory, and I get one molecule on me, if it hits at the right place at the right time, I could get cancer?

A Well, you'd have to absorb that, and you see what you are doing you are taking a whole series of possible risks, avoiding all of the defensive activities which the body has, not explaining what the right time and the right place and all of that means, and then making it appear that we are at risk all the time. In fact, that interaction, that one time

interaction is extremely, extremely rare, considering that we have billions of cells and billions of molecules of exposure, it almost never happens, but it happens sometimes.

Q But it can happen?

A That's correct, it's possible.

Q And it's your theory, when you adhere to the one-hit theory, it's one molecule, that's what does it? One molecule that causes it?

A I know of no one who disagrees that it's one molecule and one molecule of DNA interacting that causes cancer. Cancer is a clonal disease; it comes from a single cell and a single molecule. And I think we all -- I don't know of any responsible scientist who disagrees with that.

Q How about Sominex that used to be on the market, do you think that was a carcinogen?

A I have no opinion about Sominex because I don't know what product you are talking about -- what year and what was in it and so on.

Q How about any Sominex? I think in your deposition we discussed Sominex, do you recall that?

A We talked about Sominex that contained methylpurine When it contained methylpurine, it was well-known that methylpurine caused cancer in animals in two species at a dosage very similar to what people were taking on a daily basis to go to sleep. And that's why the drug was taken off

the market. That was the correct response by the FDA to that. That's exactly what should have happened, it should have been removed from the market.

Q How about asbestos? We all know what asbestos is. I inhale the one molecule of asbestos, that can give me cancer, too, according to you?

A I don't think one molecule, but I think one fiber can.

Q One fiber can give me cancer?

A That's correct.

Q And you jump from the same leap that if one fiber can give me cancer then generally it can give me Hodgkin's disease?

A No, no, no, no. I don't think there's any association between asbestos and Hodgkin's disease.

Q Oh, you have ruled that out?

A Yeah, I don't think there is any association with that.

Q How about this question and this answer at your deposition: "Do you believe that asbestos --

MR. BALDWIN, SR.: What page?

MR. ORTEGO: Oh, I am sorry, Mr. Baldwin. 122.

Q "Do you believe that asbestos is capable of causing Hodgkin's disease?" "I think that there is some association, but it's because asbestos is so terribly common and because Hodgkin's disease is so terribly common. I would doubt it myself, but stranger things have happened. After all,

there is no reason why asbestos should cause cancer, but it does."

A That's correct. I agree absolutely with the answer I gave then. There is no association on a causal basis. There is an association because both diseases are quite common.

Q How about wood stains? In your opinion, if I stain some wood at home, does that have carcinogens in it?

A I don't know what kind of wood stain you are using.

Q How about stripping compounds? If I strip the wood off because I want to stain my furniture at home?

A Again, I don't know what you are using. If you are using methylene chloride, that's a possibility.

Q Can that cause cancer, one molecule of that?

A I would say that it can, yes.

Q And it could cause Hodgkin's disease, one molecule of that?

A I think that's a possibility, yes.

Q Do you know what toxaphene is?

A Who?

Q I guess I'm not too good at pronouncing it. Toxaphene? Or "toxaphene"?

A Toxaphene, yes.

Q And that's used in dipping sheep and cattle, isn't it?

A It was used. It's not used very much now, but it was

used as a sheep dip, yes.

Q And one molecule of that dip if you are exposed to it at the right place and the right time, according to your theory can cause cancer?

A Yes. It's extraordinarily improbable, but possible.

Q Now the same would be true for some other substances that we commonly use. Polychlorinated biphenyls, or PCBs, can you tell the Jury what those are?

A Nobody uses polychlorinated biphenyls commonly, Mr. Ortego. I mean, that's really not fair. Commonly? That's a material that was in transformers up on poles. It's been illegal to use in the United States for ten or more years, and I sure wouldn't say that it's common to use that.

Q Well, it wouldn't it be fair, sir, that prior to 1978 that PCBs were the fluid that were in many capacitors and many transformers all over the United States?

A But that's not commonly using it. I don't know anybody who goes out and commonly uses PCB containing capacitors for anything.

Q Well, if I took a part in my old TV set, sir, and I had a capacitor and it broke open, it would be PCBs in there, wouldn't there?

A Well, I think you can see how improbable it is. That's what I am saying, it's possible you might do that, but that's pretty improbable.

Q How about nitrosamines, things that are found in beer, wine and bacon, the preservative?

A I'm sorry, I -- I don't recognize your --

Q I'm not too good at pronouncing --

A I guess not. I don't recognize your pronounciation.

Q Nitrosamines?

A There isn't any such chemical.

Q Are there nitrate type chemicals found in bacon, beer, and wine?

A In cured bacon in which nitrates have been used, there may be nitrosamines, if that's what you're talking about.

Q And it might be nitrosamines in wine and beer?

A In American wine and beer, yes. In European and German beer, no, because they don't allow any of the materials to be used which cause the nitrosamines. And in wines, I can't recall seeing anything, although it's certainly possible.

Q Nitrosamines can cause cancer, in your opinion, can't they?

A One -- dimethylnitrosamine is the only one that can cause cancer; and, yes, that certainly falls in the same category.

Q And one molecule of eating my bacon that had this in it could get me at the right time, can't it?

A Oh, I think almost everybody in the United States knows

that that's a risk. It's certainly been all over the newspapers for the last five or six years.

Q So you think I am taking a risk when I have bacon of getting cancer?

A I think that's a risk, yes.

Q And with your logic that I am also taking a risk when I have bacon to get Hodgkin's disease?

A It's a risk.

Q Aflatoxins, they are found in peanuts, aren't they?

A They are found in some peanuts. They are natural mycotoxins which are found in some food, and they fall in the same category.

Q And when you say they fall in the same category, if I eat peanuts that have aflatoxins in it, that could be one molecule of cancer that can hit me in the right place and the right time?

A Yes, I think that that's correct, and that's one of the reasons that peanuts are monitored to make sure they aren't contaminated with aflatoxin. That's the kind of thing that they should be doing is looking to see that you don't eat peanuts with aflatoxins on them, and that's exactly what's done.

THE COURT: How do you monitor peanuts?

THE WITNESS: You take the peanut, Your Honor, you

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extract it. And aflatoxin is extraordinary fluorescent. The FDA does it on a regular basis. They are very careful about that, because it's a well-known issue. They won't buy peanuts -- the government won't buy it for the surplus programs unless they are aflatoxin-free.

(Mr. Ortego continuing:)

Q How about my gold fillings? If I have a gold filling in my mouth, now the gold can give off carcinogens in my mouth, can't it?

A Absolutely not.

Q How about gold and platinum, do you think they can be carcinogenic?

A I think platinum is carcinogenic. We know that it can be used to treat cancer, and under special circumstances, platinum salts and gold salts, but not the gold that's used to make your fillings can be carcinogenic. They have both been shown to be carcinogenic in animal species.

Q So I guess certain gold and certain platinum could cause cancer too?

A Oh, but see you never encounter those except in a manufactured product. You are talking about sysplatinate (pho), which is a chemical used to treat cancer, and we know that almost every chemical that can be used to treat cancer will also cause cancer. So that's one. The gold compounds that are used to treat arthritis are also known to be carcinogenic

in some species. The problem is that there is no other compound that can be used for that purpose. When you are in that position, you have to make a risk assessment and you have to decide whether you want to use it or not.

Q So when you are in that position that if you take that as a medication and you get the one molecule, you could get cancer or Hodgkin's disease.

A But you could die of your arthritis, and that's where the judgement has to be made by the patient. Not by the doctor, not by the drug company, but by the patient whether he wants to take that risk when he's informed.

Q How about if I go for a general anesthesia? I go for an operation and they give me general anesthesia, can I get carcinogens that way?

A Some general anesthetics, for instance the halogenated hydrocarbons have such a risk, yes. But again, the dosage is relatively low, given in a short period of time, and it's not a big risk, but it is a risk.

Q It is a risk, because that one molecule at the right time can give you Hodgkin's disease, according to your theory?

A That's correct.

MR. ORTEGO: If I could just have one second, I have to get some papers, Judge. I'll continue.

(Brief pause.)

Q Now, Doctor, would you agree -- you've talked about a lot of studies -- would you agree that certain foods that we eat contain mutagens, cancer-causing substances, and there is reputable, scientific literature that says that?

A Yes.

Q And isn't there literature that says that even mushrooms can cause cancer?

A I don't know what you mean by "even mushrooms." I -- I think I would agree that mushrooms may contain carcinogens. I see no reason why they shouldn't. I also know that mushrooms contain anti-carcinogens, and so -- maybe yes, maybe no.

Q How about celery, in your opinion could that contain carcinogens?

A I don't have an opinion about celery.

Q You remember reading an article --

A By Bruce Ames, yes.

Q And that article says that there are carcinogens in celery.

A It also says there are anti-carcinogens in celery and in cauliflower and in broccoli and so. So, you know, you can't take just a piece of the article. That's an article on carcinogens and anti-carcinogens in foods, and he makes the point that if you eat certain foods you cancel out the effect of the carcinogens. That's exactly what we

are talking about.

Q But according to your theory, I eat certain foods, like grilled steaks, grilled burgers, mushrooms, I could be ingesting -- peanuts, if the wrong type of peanuts -- I can be ingesting carcinogens?

A I guess I would recommend you eat it with broccoli and cauliflower, which would protect you.

Q Okay. So I should have my mushrooms and my steak and I could eat the cauliflower to protect me. But --

A Right.

Q -- if I eat that hamburger, Dr. Teitelbaum, and I have those mushrooms, and I have my beer and I have a little peanuts, I am ingesting millions of molecules of carcinogens, aren't I?

A Yes. And we certainly have lots of cases of cancer, some of which may well be due to your dietary indiscretions.

Q So if one of those molecules in that lunch I just had, which sounded better than I really had, that one molecule, if that hits me at the right time, according to your one-hit theory, I can get cancer?

A I would agree with that.

Q And if I can get cancer, according to your theory, from eating that wonderful lunch, that one-time deal, I can also get Hodgkin's disease?

A It's a possibility. Very, very improbable, but possible.

Q According to your theory, possible?

A Very improbable, but possible.

Q We spoke about this earlier, but you never spoke to Mr. Greenhill or any member of his family?

A That's correct.

Q You never spoke to his doctors and you never spoke to his family?

A That's correct.

Q The only way you knew him was through his medical records?

A And his deposition, that's correct.

Q You knew nothing about his exposure to 2,4-D, did you?

A Except what he said in his deposition.

Q Wouldn't it be fair to say before you rendered your opinion that our product caused Mr. Greenhill's Hodgkin's disease or cancer, you had no idea how much of the product he was exposed to?

A I agree with that.

Q So when you rendered your opinion you didn't know whether he was exposed to one drop or three hundred gallons? You have no idea?

A I knew that he had worked for the Forest Service. I knew the years he had worked for it, and I knew he had used 2,4-D, and that's enough.

Q Wouldn't it be fair to say all you knew was the

following -- Page 86: "Would you tell us your understanding of the exposure of Mr. Greenhill to herbicides?" This was at your deposition when you rendered your opinion. "The only information I have is that he worked with Tordon 101. I have no other information that was supplied to me by Mr. Baldwin's office, and someone else will have to discuss his exposure."

A That's correct.

Q And the reason why you rendered your opinion about that our 2,4-D caused his Hodgkin's disease is because you think one molecule got him at the right time, isn't that correct?

A I think that because he was exposed while working over a period of at least two and perhaps three cutting seasons, he had a sufficient opportunity to have many exposures, and that one of those was a contributing cause to the occurrence of his lymphoma and his death. That's exactly what I believe, that's correct.

Q That's your opinion today, but when you rendered your opinion in this case, when we asked you what your opinion was when we took your deposition, you didn't know how much he was exposed to.

A I knew --

Q The only thing you knew was that he was exposed to Tordon 101?

A I don't know today how much he was exposed to. I know

how long he was exposed. I know he was exposed. I knew then that he was exposed more than twenty days. I knew that he fell into the category which was described in Hardell's work. All of that I did know. I do not know today how many gallons he used, nor have I found anything in any document which would give an answer to that question.

Q Okay. But you say you knew how long when you gave your opinion?

A Yes. He had been exposed from 1976 until approximately 1978.

Q But you didn't give that in your answer when we asked you?

A I don't think anybody asked me what years he was exposed -- ever.

Q You knew -- you didn't have a complete occupational history of him at that time, did you?

A That's correct. I gave you what I did know, which is that he had worked in a camera department, that he had worked in the Forest Service, that he had worked in a lumber yard, and that there was some history of having worked for a month or a very brief period of time in a gas station.

Q Okay.

A Today, that is the exactly the same occupational history which is in his deposition.

Q When you rendered your opinion you knew about his other occupational exposure through the documents that Mr. Baldwin sent to you?

A That's correct.

Q You, yourself, did not ask him what other molecules of carcinogens he might have been exposed to?

A I never examined him, so I had no information beyond what I have given to you before.

Q Isn't your appraisal when you make these diagnoses that things cause cancer, isn't it your belief, Doctor, that it's very important to have a complete history of the individual before you make this type of decision?

A Correct.

Q But you didn't have a complete history of Mr. Greenhill's occupation when you implicated our product?

A I had as complete a history as was available at that time.

Q Now you also feel it's important when you evaluate what causes cancer in a person to know their hobbies and their personal habits?

A That's correct.

Q You didn't have that information when you rendered your opinion?

A Yes. But I do now, and there is nothing about his hobbies or his personal habits which would contribute

significantly to the causation of his cancer.

Q You know now, but you rendered your opinion first and verified the information later?

A Yes. I would agree even if I had known, let's say, that he worked with lead soldiers, I would still say that his exposure to the 2,4-D was by far the more probable contributing cause than the working with lead soldiers. I don't think that would make any significant difference, and there is no history of his having worked with any other significant toxic material; there just isn't any.

Q You never spoke to him. He was alive when you were retained. You chose not to speak to him and ask him these questions? Is that correct?

A I was never asked to interview or examine him. And I was asked to do nothing until 1985, at which time I was asked to evaluate his records.

Q When you say you were never asked, he wasn't your patient, was he?

A Certainly not.

Q He was just a legal file that Mr. Baldwin asked you to evaluate?

A No, that's not fair. He was a human being who had a disease, and I was asked whether I thought that his history explained how he got the disease. That's what I was asked.

Q Well, would it be fair to say that you didn't treat

him, he wasn't your patient, you evaluated and gave whatever information Mr. Baldwin sent you -- you evaluated and rendered your opinion on what Mr. Baldwin sent you?

A I would agree with that. That's the only information I had. That's what I indicated at the beginning of my direct examination.

Q Okay. Mr. Greenhill smoked, didn't he?

A Yes. But for a very brief period of time between age 14 and 17. He stopped at age 17, if I recall correctly.

Q How many molecules of carcinogens did he inhale?

A A lot.

Q What percentage of those carcinogens, in your opinion, contributed to him getting cancer?

A Perhaps some. Perhaps they are the ones that set him up so that when your 2,4-D came along, that's what kicked him off. That's what we are talking about, being set up so that the one hit takes place in the right time at the right place. He certainly didn't get Hodgkin's disease at anytime close to or remotely related to his smoking between age 14 and 17.

Q He had an occasional beer, too?

A Yes.

Q What percentage of those carcinogens set him up for his Hodgkin's disease?

A Perhaps some.

Q What percentage of his smoking or drinking this occasional alcohol contributed to his getting Hodgkin's disease?

A I think a very, very, very small percentage, but I think it is possible that they made some contribution.

Q Mr. Greenhill had x-rays in his life, didn't he?

A All after he had his disease, so far as I could tell.

Q But at your deposition didn't you state that he had x-rays?

A After he had his disease. I can't find any x-rays in there before that.

Q When did Mr. Greenhill get his disease?

A Late 1978, probably.

Q Do you recall being asked this question?

MR. BALDWIN, JR.: What page?

MR. ORTEGO: Page 101.

Q "Do you know if Mr. Greenhill went to a dentist?" "I have Dr. Walters' records. I am sure he went to a dentist." "Do you know how many x-rays he had taken?" "No." "X-rays are carcinogens, aren't they?" "Yes. Just to clarify the question, I have Dr. Walters' records and it goes back to 1957, and I do not recall that I found a single chest x-ray or anything that would be of any consequence at all in that record. So we at least have that."

So you are aware of Dr. Walters, his dentist, aren't you?

A Dr. Walters was his doctor, and he didn't have any x-rays.

Q Fine. Dr. Walters was Mr. Greenhill's doctor at one time, correct?

A That's what I get from the records I had going back to 1957.

Q Okay. What percentage of the food that Mr. Greenhill ate set him up or caused his cancer?

A I think it's just as likely that the food protected him as that it caused anything. I think that now we are talking about the issues of anti-carcinogens, and that what he ate may very well have negated all of the beer, all of the cigarettes and everything except the 2,4-D.

Q So it's the 2,4-D that stands out for you?

A It's what stands out for me. That's why I've said that I think that it is a significant contributing cause to his disease, that's correct.

Q How about coffee, could that have set him up, too? That's a carcinogen.

A No, it's not a carcinogen, and I don't agree with that work. I don't think anybody else responsible agrees with that work. Perhaps you do, but I really don't.

Q No, I don't.

A No, I don't either. I am glad we agree on that, anyway.

Q That's about it, though.

A Well, that's good. That's a step in the right -- we will go out and have coffee afterwards.

Q No, we won't. Mr. Greenhill was a landscape gardner --

A Yes.

Q -- before he worked at the Forest Service, isn't that correct?

A For a brief period, yes.

Q What percentage of his cancer was contributed by his exposure to chemicals when he worked as a gardner?

A Well, that may be one of the reasons he was set up when the later exposure came along. I would certainly agree with that. That's a possibility.

Q Couldn't the molecules from those chemicals that he probably used as a landscaper give him Hodgkin's disease?

A Well, he probably used the same 2,4-D that he used later, and I would think that would be a contributing cause. Yes, I would agree with that as a possibility.

Q What happened if he used someone else's herbicide, or 2,4-D, could that have given him cancer?

A Well, I don't know that that's so. And it's certainly possible that it contributed, but I don't think that it caused it in and of itself, because I think he needed this last set of exposures to the chemical that we are talking about, the Dow Tordon, in order to kick things off. That's what I think.

Q That's what you think, okay. So you can't tell us what percentage of his cancer was caused by the landscape gardening, can you?

A I don't think any significant percentage of his cancer. I don't think he had cancer then. I don't think there is any evidence he had cancer then. I think that it may, however, have contributed to preparing the cell for that final hit. I would certainly agree with that.

Q Now Mr. Greenhill also worked at Copeland Lumber, didn't he, before --

A Yes, he did.

Q -- he went to the -- and that's before he ever went to the Forest Service?

A Yes. But he describes that he never worked with the wood. He worked in the offices as an estimator or something of that sort. He had no exposure to wood at that point.

Q Well, he was in the place with wood. If he worked with wood, we talked about this today, but could that increase his exposure, increased his Hodgkin's disease?

A I think his deposition makes it very clear that he did not work with the wood there, and I have no opinion about that. I don't believe that there is any reason to think that it would have made any contribution, based on what he said in his deposition.

Q Well, let's go back to the wood. If he worked with wood

during his lifetime, you told us about studies for that, would that increase his risks of Hodgkin's disease?

A It may well have prepared him for the final hit, that's a possibility.

Q For the final hit. Schoolteachers have a higher rate of Hodgkin's disease. Aren't there papers about that?

A The most recent papers say that that's not correct, as a matter of fact, and you will find that -- I think it is in one of the papers that we looked at that Hardell quotes where it turns out that there isn't any increase in schoolteachers, there isn't any increase in physicians, there isn't any increase in nurses. All the people who are around people who generally have Hodgkin's disease do not have increased risks of Hodgkin's disease.

Q There are studies out there, aren't there, that say that schoolteachers, physicians, nurses and other occupations --

A On -- I'm sorry.

Q -- have a higher incidence of Hodgkin's disease?

A Only social class studies. What they show, and this is what Hardell was addressing himself to, that people who have higher incomes, higher levels of education, smaller families, and are higher in the birth order have a higher risk of developing Hodgkin's disease. As I read it, it seems to me Mr. Greenhill doesn't fall into any of those categories. So I don't think any of those risks apply to him.

Q Now --

A He wasn't a schoolteacher. He was, you know, none of those things.

Q -- you really don't know when Mr. Greenhill got his first cancer cell, do you?

A That's correct.

Q For you, you have to speculate to tell us right now when that first cancer started, wouldn't you?

A I think we all would have to speculate on that.

Q So it could have actually been years, maybe ten years before he ever worked at the Forest Service that that one cell of cancer could have been growing in his body?

A It seems very improbable since the presentation was bony and it caused him difficulty very early on. I really think that's unlikely. It's possible.

Q It's possible?

A It's possible, but I think it's very, very improbable, given the nature of his disease, which was extraordinarily aggressive and gave him bony disease, which is very rare right at the beginning.

Q But for you to determine when the cancer started in his body would be speculation, wouldn't it?

A That's correct.

Q Now he did something that was known as "timber bucking." Do you know what that is?

A Yes, I think so.

Q And he did timber bucking in 1972 and 1973?

A Yes.

Q And that's an increased risk factor?

A Yes.

THE COURT: What is that?

Q Why don't you tell us what timber bucking is?

A Well, it's a cutting and pulling out of timber from a stand.

THE COURT: All right.

Q What percentage of his cancer was contributed by doing this timber bucking?

A I don't believe he had his cancer then. I think it may have contributed to his being set up so that that final hit triggered things from your product. That's exactly the kind of thing we are talking about here. Now you have got the pieces in order.

Q And the final hit that you say was triggered off with my product, you don't know whether or not the cancer cell was in there before he was exposed to our product, do you?

A I think it's very improbable based on the nature of the disease that he had.

Q I don't want to belabor this, but you can't -- of all these other items I went through -- the mushrooms, the coffee, all these other things we went through -- the steak, the

cigarette smoke --

A I don't accept the mushrooms, and I don't accept the coffee. Cigarette smoke I will accept.

Q Okay.

A Okay.

Q You can't really tell us what percentage of these different things contributed to his cancer, can you?

A I think that there is a possibility that many of these things contributed to setting him up. None of them caused his cancer in and of itself. It took your product coming along to push him into the point where he got the disease.

Q Would it be fair to say, though, he was exposed to trillions and trillions of cancer-causing molecules through his lifetime before he ever was exposed to our product?

A You can make any assumption of numbers you want. I don't think there's anybody who has ever done, an attempt, even, at estimating that for any normal human being in the United States.

Q You can't tell us what percentage of all these things contributed to his cancer because it would be absurd to speculate about that, wouldn't it?

A I think it would be absurd to speculate about it, yes.

Q Now, we talked about it a little earlier. The United States Environmental Protection Agency regulates the products in this country, certain products, isn't that correct?

A No, not really. What it does is it regulates the uses of the product, and by regulating the uses of the product the product itself comes under regulation.

Q The EPA, or any other government agency, doesn't require cancer warnings on beer, do they?

A No, but they do on gasoline.

Q How about wine, do they require cancer warnings on a bottle of wine because it has carcinogens?

A No, but it's an issue that is currently very much in the EPA's discussion, and they certainly now put a warning regarding nutrition in pregnancy and I think that there will be a cancer warning in the future -- not too distant future, either, on the other. That's an FDA -- incidentally, an FDA requirement not an EPA requirement.

Q How about the charcoal grills, are there any warnings on that that when you use them you can get cancer?

A I don't recall ever seeing such a warning.

Q And it's possible that these things can put carcinogens in your body, but there's no warnings for those products?

A That's correct.

Q The EPA tells the manufacturers of 2,4-D, and there are others besides Dow, what goes on their labels, don't they?

A No, no, not at all. What the EPA does is it approves what the manufacturer puts on the label. The manufacturer can put anything it wants, and then the EPA will decide

whether that's adequate or not.

Q Okay.

A For instance, if the language that Dow has in these two reports were to have been put on there, I am certain that if the EPA knew why it was put on there they would have approved it. Dow certainly had that option, and didn't put it on.

Q Let me ask you this, is there any -- there's no 2,4-D label today as you sit here now that the EPA requires a manufacturer to place a warning "Causes cancer in humans" or "Causes Hodgkin's disease in humans," is there?

A No, I don't know of any such requirement at the present moment. But I think if you put it on there, they'd probably approve it.

MR. ORTEGO: Could I have just one second?

(Brief pause in proceedings.)

(Mr. Ortego continuing:)

Q Are you ready, Dr. Teitelbaum?

A I'm certainly ready.

Q I just wanted to make sure. It's getting hot in here. Mr. Greenhill had bony discomfort before his Hodgkin's disease was ever diagnosed, didn't he?

A I think you'll have to ask me a more specific question, because I don't think he had bony discomfort.

Q Well, didn't he have severe back pains before the

Hodgkin's disease was ever diagnosed?

A He had disc disorder, and he had the result of a fall in his upper back prior to his Hodgkin's disease, at approximately two years earlier, as I recall.

Q But he had bone pain?

A No, I don't think it was bone pain. I think it was thoracic pain, and it was disc type pain, and disc type pain is not bone pain. Disc pain comes from irritation of the nerve roots, and it's not bone pain. It's a very different kind of pain.

Q What is bony Hodgkin's disease?

A It's Hodgkin's disease which settles in the bone.

Q And that's quite an advanced stage of Hodgkin's disease, isn't it?

A Not necessarily. It can be the presenting stage in some cases, but it's very unusual. In most patients when it presents with bone involvement, it's classified as a 4-B, and it is a very serious prognostic sign. But it can be, according to DeVito and also according to Kaplan, the presenting sign and the only sign.

Q Isn't it a fact that it was your opinion at your deposition that the bone pain he was experiencing, the pain in his back he was experiencing, was actually the Hodgkin's disease before it was ever diagnosed?

A I think that's a possibility.

Q And that he was disabled for a prolonged time because of the bony discomfort he had in his back before anyone realized it was Hodgkin's disease?

A Well, that's certainly from the time when he went to Dr. Teeter to the time that the diagnosis was made in the hospital, that's correct. I don't think there's any question that there was a misdiagnosis between the time that he went to his general practitioner and the time he got admitted to the hospital. That's a period of about three months or so, and they were just incorrect in what the diagnosis was. I don't think there is any question about that.

Q Well, isn't the reason that they were able to finally diagnose it is it was so bad in the bone -- his bones were so bad by the time they diagnosed Hodgkin's disease, he was in very late stages? He was in Stage 4?

A By definition, when you find Hodgkin's disease in the bone you have to put it in Stage 4, even if it's the only finding that you have. So, that's a Stage 4 by definition. I don't think it has anything to do with temporal disease. It has to do with the aggressive nature of the disease and the unusual presentation which this man had. It's much more common to have the lymph nodes come up in the neck first.

Q Let's talk about Hodgkin's disease generally here. Isn't it fairly common in young adults like Mr. Greenhill?

A It's more common between the ages of 15 and 25. It is

considerably less common at the age of 32 than it is, let's say, at the age of 27. And at the point that he got the disease, he's already on the bottom of that first peak.

Q But he was within one of the peaks, wasn't he?

A At the very tail end of it.

Q And men more than women get Hodgkin's disease in those peaks, isn't that correct?

A Sure, because that's the statistical study says more men than women, and more people between 15 and 30 than at other ages, except later in life.

Q You don't treat people for Hodgkin's disease now, do you?

A No.

Q You are only a consultant?

A That's correct.

Q Now isn't it your opinion that 95 percent of all Hodgkin's disease is idiopathic or the cause is unknown?

A I will agree that the cause is unknown. What you mean by idiopathic is that the cause has not been determined. It does not mean that there is no cause, and you have laid out a whole series of causes which may, in individual cases, be responsible. And I would certainly agree that in individual cases they may be responsible. And if we looked carefully at those so-called idiopathic cases, more and more of them could be defined as being due to a clear cause.

Q Okay. But as it stands now, 95 percent of all Hodgkin's disease there is no cause attributed to it?

A There is no cause that has been looked for; therefore, there is no cause known.

Q Well, wouldn't it be fair to say that when someone gets a disease a doctor does his best to look for the cause of the disease if he can find it?

A No, sir, that would not be fair, and it's not true.

Q So most doctors treat the disease and don't worry how it came about?

A No. When it comes to cancer, unfortunately most physicians do not make an exhaustive study of the cancer, and do not make an attempt to understand the epidemiology or the factors which are present. It's more and more now in occupational cancer that this interest has arisen, and more and more occupational cancers, like asbestos causes cancers, like benzene causes leukemias, that have been defined. But that's come from occupational medicine and toxicology and not from family physicians.

Q Well, based on the current level of diagnosis, probably 95 percent are idiopathic?

A I would agree with that.

Q Today would it be fair to say that the most readily accepted, established cause of Hodgkin's disease is a virus?

A No, I wouldn't agree with that. The most recent book

that I quoted to you before lists wood right up with viruses.

Q Wood?

A That's right, exposure to wood, particularly because of the chlorophenols, and it gives three possible reasons: because of infectious agents which may be associated with wood; because of chemicals which may be associated with wood; and because of antigenic stimulation which may be associated with wood. All three of those are present in the '87 edition of McElwain and Selby.

Q But there is a strong pool of doctors who say it's viral, isn't it?

A Well, they have been saying that for about ninety years, and nobody's proved it yet so I would say that there's a prejudice towards it, but there's very little scientific information. There's not nearly as good information as there is about the chloronhenoxy acids.

MR. ORTEGO: Judge, if I were allowed five minutes, I think I could wrap this up by limiting some of these things so we can all get out. I'd appreciate it.

THE COURT: Do you want five minutes?

MR. ORTEGO: I'll be greedy and take ten, if it's all right.

THE COURT: Be back in the jury box at five minutes till four.

MR. ORTEGO: Thank you, Your Honor.

Q If you rendered an opinion on medical records that did not belong to Mr. Greenhill, would that have been a serious error?

A No, not particularly, unless they had something of consequence.

Q Let me show you what is marked as Exhibit No. 1, which is your deposition exhibit that you brought to your deposition, medical records that you looked at. These were some of the medical records that you perused at your deposition when I would ask you questions.

A I have no way of answering whether these have anything to do with Mr. Greenhill at all. They don't look at all familiar to me.

Q Well, in fact they aren't Mr. Greenhill's records and the records that we discussed at your deposition and I asked you questions from, and the records you brought weren't Mr. Greenhill's records.

A These are not records which I supplied to you. I'm sorry, these are not my records. I have a copy of my records here, and these are not the records which I gave to you. I have no idea where you got those.

Q Those records, Mr. Moss, is he another legal file of yours?

A I never heard his name.

Q And those records -- Mr. Moss is a much older man than

(Recess at 3:44 p.m., until 3:55 p.m.; open court, jury and all parties present.)

THE COURT: Please be seated. You may continue.

MR. ORTEGO: Thank you, Judge.

(Mr. Ortego continuing:)

Q I believe you said earlier, Dr. Teitelbaum, as we discussed at your deposition that Mr. Greenhill had some x-rays taken of him?

A Yes.

Q And that you knew that from his medical records is where you came up with that?

A Yes. He had x-rays taken when he was admitted to the hospital, and he had some taken by Dr. Cole somewhere along in there.

Q He also had, you described at your deposition when you were discussing Mr. Greenhill, his dental history, and you described Dr. Walters' records, did you not?

A I think Dr. Walter was his general practitioner.

Q And at your deposition we discussed Dr. Walters?

A I think so, yes.

Q And we attached those records at your deposition, the medical records you relied upon as an exhibit to your deposition, and Dr. Walters' records were in there, weren't they?

A Yeah, I believe so.

Q And that was Exhibit No. 2 to your deposition in which Dr. Walters' records were in?

A I don't know the number, but if that's what the number is that's what was in it.

Q And one of the things we asked you when you came to your deposition in June of this year was to bring all the medical records you had on Mr. Greenhill?

A You never asked me anything. I didn't have any of those things, as you recall. I brought everything I had, but it was not in response to any kind of request because I never got any kind of request from you.

Q What you did bring in fact to the deposition is all the medical records you reviewed in this case you brought with you and we marked them at the deposition, isn't that correct?

A That's correct, whatever I had at that time.

Q And the medical records is what you relied upon in forming your opinion, is that correct?

A In forming my opinion about what?

Q Mr. Greenhill's disease and the cause of his disease?

A No. I relied on Mr. Greenhill's medical records to describe what happened to Mr. Greenhill medically. I don't think I relied on them at all to supply the cause of this disease. I don't think there's any discussion of that in any medical record.

Mr. Greenhill, wasn't he?

A I haven't the faintest idea whose records these are. They are not Mr. Greenhill's. They have nothing to do with this case. I don't know anything about them.

Q As a matter of fact when I asked you this question at your deposition --

MR. BALDWIN, SR.: What page?

MR. ORTEGO: Page 101.

Q "Do you know if Mr. Greenhill went to a dentist?" "I have Dr. Walters' records. I am sure he went to a dentist." "Do you know how many x-rays he had taken?" "No." "X-rays are carcinogens, aren't they?" "Yes. Just to clarify the question, I have Dr. Walters' record and it goes back to 1957, and I do not recall I found a single chest x-ray or anything that would be of any consequence at all in the record. So we at least have that."

Take a look at those records that are in front of you, when I was asking you questions and you were referring to out of your deposition, isn't it a fact that Dr. Walters is in that client's file and there is no Dr. Walters even in Mr. Greenhill's file?

A Excuse me. I don't know who Mr. Moss is. I -- I don't have any record. I don't know this man. I don't know anything about it.

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Q Those are the records that were attached to your

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deposition as Exhibit 2, and you referred --

A These are not Mr. Greenhill's records, and I have no idea where they came from.

Q They are not, are they? And look through quickly, is Dr. Walters the dentist in 1947 when Mr. Greenhill was a boy, that's really Dr. Walters', when you went through those records that you personally brought to the deposition, you were referring to the wrong man's medical records?

A Excuse me. These are not Mr. Greenhill's records.

Q I know that.

A They have nothing to do with this case. I don't know who Mr. Moss is, and I really do not know where you got this.

Q I got those, the Court can take notice, it's attached to your deposition as Exhibit 2, and I'll read the lines. Is there a Dr. Walters in there, a dentist Dr. Walters? Take a look.

A I don't see it (examining file). Well, I do not see it, and I do not recognize these records. I do not know anything about this patient.

Q So if the exhibits which were attached to your deposition which you produced, those records, if you relied upon them, would have been a mistake, wouldn't they?

A These records don't have anything to do with Mr. Greenhill. I don't know what --

THE COURT: Just a minute. Let me see those

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records.

MR. ORTEGO: They don't, Your Honor. They have nothing to do with Mr. Greenhill. (Tenders exhibits to the Court.)

THE COURT: I am looking at Defendant's Exhibit 1.

MR. ORTEGO: Which is Deposition Exhibit No. 2, Your Honor.

THE COURT: Where did these -- this is a Joseph Moss.

MR. ORTEGO: That's right. At the deposition of Dr. Teitelbaum --

THE COURT: Well, let me ask a question a minute. Are you stating to the Court that these exhibits, this Defendant's Exhibit 1, was a part of the deposition of Dr. Teitelbaum?

MR. ORTEGO: Yes, it was, Your Honor.

THE COURT: Mr. Baldwin, is that correct?

MR. BALDWIN, SR.: Your Honor, I don't know. At that deposition there were boxes of documents furnished. They may well have been. I have never seen them before.

MR. ORTEGO: Judge, I think there were four exhibits or so, or a little more, at the deposition.

THE COURT: Well, are you stating that the --

MR. ORTEGO: Yes, Judge.

THE COURT: -- that the witness testified from a

series of documents of a person other than the Plaintiff, Mr. Greenhill, in this case?

MR. ORTEGO: Yes. Yes, Your Honor.

THE COURT: Well now, the witness says he's never seen these, this Defendant's Exhibit No. 1 before.

MR. ORTEGO: They are attached to his deposition, and we have a certified copy of the court reporter. These are the exhibits he produced. The exhibits were given to the court reporter at the deposition.

THE COURT: Who gave them to the court reporter?

MR. ORTEGO: She took them from the deposition. She marked them and took them. I never touched them.

THE WITNESS: I never touched them.

MR. ORTEGO: And, Judge, I was at the deposition and when those documents were brought in by Dr. Teitelbaum I took the documents. He put them on the table, and I looked at them.

THE COURT: Where are the medical records of Mr. Greenhill that the witness had before him when his deposition was taken?

MR. ORTEGO: That was Exhibit 4, and he discussed those records as well at his deposition.

THE WITNESS: Your Honor, I have never seen that record before, and my office sent three boxes of material down. The Defendants asked that that be left and then would

go through it. I have no idea what was in those boxes.

THE COURT: Have you ever seen this exhibit before?

THE WITNESS: Not that I can recall, Your Honor. I don't know who Mr. Moss is, and I have no recollection at all of that.

THE COURT: Have you ever testified from this Defendant's Exhibit 1 before with reference to a man named Joseph Moss?

THE WITNESS: I have no idea who Mr. Moss is. I have never had anything to do with him.

MR. ORTEGO: Judge, just for the deposition (sic), I did not take the deposition. I handed that to the court reporter when Mr. Teitelbaum gave it to me and had her mark it.

THE WITNESS: I didn't give them anything, Your Honor. There were three boxes there.

THE COURT: Well, Mr. Teitelbaum says he didn't give that to you.

MR. ORTEGO: Fine, Judge, I won't -- I won't pursue this anymore.

THE COURT: Well, where did you get it? Where did you get those records?

MR. ORTEGO: Dr. Teitelbaum at his deposition, Your Honor. They were put on the table, I reviewed them, and then we questioned him.

THE COURT: I mean, I don't want any hanky-panky here in this court. There is not --

MR. ORTEGO: There's no --

THE COURT: There's not going to be any.

MR. ORTEGO: No, Judge, I am not being hanky--

THE COURT: And if I find out there is some going on --

MR. ORTEGO: There was not, Your Honor.

THE COURT: -- there will be a hereafter to this session --

MR. ORTEGO: I give my word as an attorney.

THE COURT: -- today.

MR. ORTEGO: No, Judge, there was not. These were the deposition exhibits that were marked. I was there and I watched it. I'll -- I'll withdraw this line of questioning anyway, because if it's upsetting the Court it's not worth it.

THE COURT: It's not upsetting me. I am just wanting to be sure that the proper reports that this witness examined are the reports that are being given to him now.

MR. ORTEGO: Judge, that was the exhibit that was marked. It came back from the stenographer. I personally looked at those exhibits at the deposition, and I was as surprised as you were when I saw them. And then my partner asked him questions at the deposition, and we handed

those and asked if he relied on those records, and he relied on those records. That's why they were individually marked at the deposition.

MR. BALDWIN, SR.: Well, I can say as an officer of the court, he never mentioned the fact at this man's deposition about any records belonging to a Dr. Moss, nor did he ask him any questions about it. His deposition is here and speaks for itself.

MR. ORTEGO: I just asked at his deposition, asked: "Did you rely on these records? Do you have any x-rays?" And Dr. Teitelbaum looked through Exhibit 2 and told us about Dr. Walters. That's where that came from, Judge. I don't want to cause any trouble with the Court.

THE COURT: Were any questions ever asked of this witness when his deposition was taken about anyone named Joseph Moss?

MR. ORTEGO: Not by name, Judge, not by name. I asked him to review the records and asked what he had.

THE COURT: Well, who took the deposition for the Defendants?

MR. ORTEGO: Mr. Pierce.

THE COURT: Where is he?

MR. PIERCE (from the floor) I am here, Your Honor.

THE COURT: Don't leave.

MR. PIERCE: I won't.

THE COURT: All right. Go ahead.

MR. ORTEGO: I have no further questions at this time, Your Honor.

REDIRECT EXAMINATION

BY MR. BALDWIN, SR.:

Q Dr. Teitelbaum, relating to those documents there in front of you, when you -- where was your deposition taken?

A In the Hilton at Hobby Airport in Houston.

Q And had the Defendants made known to you that they wanted certain documents and records?

A And we sent everything we had in our office that had to do with Mr. Greenhill down, in several boxes.

Q Were there several boxes of documents?

A There were, indeed.

Q Literally hundreds of documents?

A That's correct. And everything was indexed by page and by name, and if that was in there I haven't the faintest idea how it got in there.

Q At the time of the deposition did the counsel for Dow Chemical go through each of those documents and mark them and say, "Mr. -- Dr. Teitelbaum, what is this document?"

A No, he did not.

Q Did they ask at the end of the deposition that all the documents that were furnished to them be left there for them?

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A They did.

Q Now, those documents in front of you, have you ever -- referred to --

THE COURT: You are speaking of Defendant's Exhibit 1? I want to be sure we have the record on this.

THE WITNESS: Yes.

(Mr. Baldwin, Sr. continuing:)

Q Defendant's Exhibit No. 1 is relating apparently to a patient, Moss. Did you ever refer to those documents in answer to any question about Mr. Greenhill's condition?

A I have never seen these before that I can recall. I don't know who Mr. Moss is. I haven't the faintest idea how they got into this, other than that somebody put it in a box by accident.

Q Is your testimony today based on the medical records of Mr. Greenhill that you reviewed?

A Absolutely.

Q And I have observed your testimony -- it's pretty thorough about your knowledge of the medical records of Mr. Greenhill?

A Yes. And I have the medical records at your office, and I'll be happy to bring over that file, if the Court wants to see them.

Q Now, going on to another matter. You were asked to evaluate this case by myself?

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A Yes.

Q In connection with the question of whether or not 2,4-D was the causative problem in Mr. Greenhill's death?

A That's correct.

Q After you had reviewed the records, and if you had felt that it was not would you have told me?

A Absolutely.

Q And do you often do that?

A I certainly have.

Q Now as to the question of smoking, I believe you told the Jury that smoking causes cancer, in your opinion?

A. That's correct.

Q What are the facts with reference to whether a person who smokes quits smoking and does not smoke for a period of in excess of ten years --

A The --

Q -- what then are the risks of that person contacting cancer as a result of the smoking, as compared to the general population?

A At the end of five years, he's back to the expected cancer risk for his age. By the end of ten years, there is no question that he would be perfectly normal in his risk.

Q So in other words, if Mr. -- let's say Mr. Greenhill was my age, which he was not, wish that he was, and let's say that I don't smoke. But Mr. Greenhill had smoked from --

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age 14 to 17, and I believe he died at age 38, and quit smoking from 17 to 38, and I'm 38 and I don't smoke. Is what you are saying that his risk of contacting cancer is the same as mine?

A Correct.

Q Now on these questions of the warnings, you were asked the question if the EPA ever accepted these recommendations made here by what I call the "Hazard Study," or if the State of California did and made changes on the warning requirements?

A That's correct.

Q And here would be the other recommendations where it said the warnings were inadequate. I'll ask you, sir, if Dow ever accepted those recommendations --

A No, they didn't.

Q -- and changed their warnings?

A They didn't.

Q And tell the Jury whether or not the question of warnings and what goes on a warning are minimum requirements?

A Yes, they are. They have to have at least the minimum that's in the warning text.

Q And if Dow had wanted to put on its warning after that Hazard Study told them that their warnings were inadequate back in 1980, could they have gone to the EPA and say, "Mr. EPA, we think our warnings are inadequate because the Hazard

Study told us, and other things that we know. We want to change it, and we want our warning to show that 2,4-D might cause neurological problems, it might even cause cancer, and it might cause death, and we want to put that on our warnings. Would there have been anything to prevent Dow from doing that?

A No.

Q Did they do that, to your knowledge?

A No, they did not.

Q And is there a document, a Dow document, 20 UU, that says,actually talking about these impurities they found in the process in the Ramsey Test, "Precautions, such as wearing protective clothing, must be taken to prevent skin contact"?

A Yes.

Q Used the word "must." And this is Dow talking?

A That's what it says.

Q Did they ever put that on their warnings?

A No.

Q And he was talking to you about I believe a patient's gold treatment might cause cancer?

A Yes.

Q At least would a responsible physician inform that patient that if he took the gold treatment for his arthritis that it might cause cancer?

A Yes.

Q And would that patient be informed --

A Yes.

Q -- of his risk?

A Yes, he would.

Q And have the choice to make?

A He would.

Q And did Mr. Greenhill have such a choice, and was he informed of the risk in this case?

A He was not, no.

Q One final question: whether or not you call it malignant lymphoma, Hodgkin's disease, or just lymphoma, would that change your opinion that you have given here today that the cause of death of Mr. Greenhill was a result of his exposure to 2,4-D?

A No.

Q Is there anything that you have heard or occurred during the questioning of Mr. Ortego that would change your opinion that you have already told this Jury that in your opinion the cause of death of Mr. Greenhill was his exposure to 2,4-D?

A No, it would not.

MR. BALDWIN, SR.: I have no further questions.

MR. ORTEGO: Just a quick recross, Your Honor.

RECROSS EXAMINATION

P-1694

BY MR. ORTEGO:

Q Dr. Teitelbaum, that report in 1980 that came out, that was years after Mr. Greenhill allegedly used our product, isn't that correct?

A The report was in 1980, which is approximately a year and a half afterwards, that's correct.

Q Besides Dow, there is no other manufacturers of 2,4-D in this country that adopted those additional warnings, isn't that correct?

A So far as I know, you are correct.

MR. ORTEGO: No further questions, Your Honor.

MR. BALDWIN, SR.: May this witness be excused?

THE COURT: Not yet. You may step outside. You may step outside --

THE WITNESS: Thank you.

THE COURT: -- but don't leave.

THE WITNESS: Okay.

(The Witness retiring from the courtroom.)

THE COURT: Call your next witness.

MR. BALDWIN, SR.: The Plaintiff rests, Your Honor.

THE COURT: Are the Defendants ready to call their first witness?

MR. ORTEGO: Your Honor, I have some motions I would like to make outside the presence of the Jury.

THE COURT: All right, take the Jury outside.

(Jury out at 4:15 p.m.; open court continues, all parties present.)

THE COURT: Are you ready to present your motions?

MR. ORTEGO: Yes, I am, Judge.

THE COURT: You may proceed.

MR. ORTEGO: The Teitelbaum issue, if you want me to clear that up I will because I see the Court is upset, and there was no hanky-panky, and I want to make that quite clear to the Court. I would not do that nor would I care to do that. I have the lines of what happened at the deposition, Judge.

Simply put, Mr. Teitelbaum brought -- his assistant sent some of the wrong medical records, and at that deposition he referred to those medical records. And the only point I was trying to make, and I think it is proper to do that, and I have the lines in the deposition where these were marked and how they got there and when they were marked. There was no hanky-panky involved. I just want the Court to know that.

THE COURT: Was there anything said in that deposition about the medical record of Mr. Moss?

MR. ORTEGO: No. What was said is as follows, Judge:

MR. BALDWIN, SR.: What page, please, Counsel?

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MR. ORTEGO: 49: "Can you now show us the totality of the medical records that you reviewed in formulating your opinion?

"It's right here.

"Could we please mark that as Exhibit 2?

"Exhibit 2 was marked for identification by the reporter as Deposition Exhibit 2 and is attached hereto."

THE COURT: And are Exhibits 2 the records of Mr. Greenhill?

MR. ORTEGO: No, Mr. Moss. Exhibit 4 are some records of Mr. Greenhill.

"What was supplied to you at the time you were contacted?

"The medical records were supplied to me at that time.

"Which medical records were supplied to you?'

"The folder file that you have looked at before.'

"Let's identify it.

"MR. BALDWIN: Exhibit 2."

I'm sorry, that's 69 through 70.

THE COURT: Well, now I am looking here at Defendant's Exhibit 1 which was given to the witness a moment ago.

MR. ORTEGO: It says "Trial," Judge. Trial Exhibit, I marked. There is another sticker on it here.

THE COURT: I don't see it. You can find it for me.

MR. ORTEGO: It's here, Judge (indicating). This is the Trial Exhibit sticker. I can get another copy, but it's Deposition Exhibit 2. I put this on top when I marked it as Defendant's 1 for trial. I will get you another copy, Judge. I have another copy. Do you have another copy of Teitelbaum 2, please?

THE COURT: Well, were any questions ever asked of Dr. Teitelbaum concerning Mr. Moss?

MR. ORTEGO: No.

MR. BALDWIN, SR.: I can state there were not. I was present at the deposition.

MR. ORTEGO: No, there weren't, Judge, but what was done was we asked him to look at Exhibit 2 and asked him about x-rays -- what x-rays did he take? He went to the records, and we asked him did he have any x-rays.

MR. BALDWIN, SR.: Where is that, Counsel?

MR. ORTEGO: Okay, we will go through the whole thing slowly.

THE COURT: Why would you have asked the Doctor about the medical records of Mr. Moss?

MR. ORTEGO: Judge, he showed up with a bunch of things, didn't rely on much, and I wanted to know what his opinion was. He went to his records, Judge. When we asked

THE COURT: I don't see it. You can find it for me.

MR. ORTEGO: It's here, Judge (indicating). This is the Trial Exhibit sticker. I can get another copy, but it's Deposition Exhibit 2. I put this on top when I marked it as Defendant's 1 for trial. I will get you another copy, Judge. I have another copy. Do you have another copy of Teitelbaum 2, please?

THE COURT: Well, were any questions ever asked of Dr. Teitelbaum concerning Mr. Moss?

MR. ORTEGO: No.

MR. BALDWIN, SR.: I can state there were not. I was present at the deposition.

MR. ORTEGO: No, there weren't, Judge, but what was done was we asked him to look at Exhibit 2 and asked him about x-rays -- what x-rays did he take? He went to the records, and we asked him did he have any x-rays.

MR. BALDWIN, SR.: Where is that, Counsel?

MR. ORTEGO: Okay, we will go through the whole thing slowly.

THE COURT: Why would you have asked the Doctor about the medical records of Mr. Moss?

MR. ORTEGO: Judge, he showed up with a bunch of things, didn't rely on much, and I wanted to know what his opinion was. He went to his records, Judge. When we asked

him a question, he said, "Let me look . . . "

THE COURT: Is this in the deposition?

MR. ORTEGO: Yes. I will read the lines that are in the deposition that I can find.

THE COURT: All right, read what's in the deposition about Moss, if there is anything in there about him.

MR. ORTEGO: His name is never mentioned, Judge.

THE COURT: Read to me what is said about what he relied upon to make an opinion.

MR. ORTEGO: (Reading)

"Can you show us the totality of the medical records that you -- "

MR. BALDWIN, SR.: What page, Counsel?

MR. ORTEGO: 49:

"Can you now show us the totality of the medical records that you reviewed in formulating your opinion?

"It's right here.'

"Could we please mark it as Exhibit 2?

"(Exhibit was marked for identification by the reporter as Deposition Exhibit 2, and is attached hereto.)"

MR. BALDWIN, SR.: There is no reference that that is Moss?

MR. ORTEGO: No, there has never been a reference that it was Mr. Moss, and he produced them at the table. He took them out of his box.

him a question, he said, "Let me look . . . "

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"Can you show us the totality of the medical records that you -- "

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MR. BALDWIN, SR.: There is no reference that that is Moss?

MR. ORTEGO: No, there has never been a reference that it was Mr. Moss, and he produced them at the table. He took them out of his box.

"What was supplied to you at the time you were contacted in 1985?"

MR. BALDWIN, SR.: Where are we now?

MR. ORTEGO: Now we are on Page 69.

"The medical records were supplied at that time.

"Which medical records were supplied?

"The folder, the file that you've looked at before.

"Let's identify that.

"MR. BALDWIN: It's Exhibit 2. It's already been marked.

"Was the entire Exhibit 2 supplied to you at that time?

"I cannot answer that question. I do not know. I can't tell you what was supplied or what was not. My assistant only indexed it completely this year, so I don't know when each piece came in."

Then we talk about the records later on, and I will get that for you in a second, Judge. (Locating document.)

MR. BALDWIN, SR.: And his answer -- I think you ought to read the rest of his answer.

MR. ORTEGO: Go ahead.

MR. BALDWIN, SR.: (Reading) "I can't tell you what was supplied or what was not. My assistant . . ."

THE COURT: What page and line are you reading

from, Mr. Baldwin?

MR. BALDWIN, SR.: Page 70, Line 6: "I cannot answer the question. I do not know. I can't tell you what was supplied or what was not. My assistant only indexed it completely this year, so I don't know when each piece came in."

And, Your Honor, I think --

THE COURT: Wasn't it obvious to you before today, Mr. Ortego, that these medical records of Moss had nothing to do with this case?

MR. ORTEGO: What was obvious to me, Judge, today, is that some of the records he relied on today --

THE COURT: That's not what I asked.

MR. ORTEGO: Yeah, Judge, I knew. I knew that he had made a mistake and brought some of the wrong records.

THE COURT: Why did you present those to him here today?

MR. ORTEGO: Because I wanted to impeach him, Judge, to show that he relied on some records that weren't appropriate. And what I did was during the direct -- I can read it to you.

"Do you know if Mr. Greenhill went to a dentist?

"I have Dr. Walters' records. I am sure he went to a dentist.

"Do you know how many x-rays he had taken?

"No.

"X-rays are carcinogens, aren't they?

"Yes. Just to clarify the question, I have Dr. Walters' record and it goes back to 1957, and I do not recall that I found a single chest x-ray or anything that would be of any consequence at all to the record, so we at least have that."

So at the deposition he was making a mistake an relying on things from someone else's medical records. And we just asked the question, I looked at it, I saw what he marked was Moss's thing, and I just wanted to show the Jury and bring out that he did make a mistake and is capable of making a mistake like anyone else. That's all I wanted to do, Judge.

MR. BALDWIN, SR.: He didn't advise the witness at the time of the mistake. He never advised me until this moment.

MR. ORTEGO: Let me tell you what happened. I will tell you right now. I looked at the exhibits. I wasn't taking the deposition. I saw that some of these records were incorrect, and that's the time I noticed it, the end of the deposition. Judge, here is Deposition 2 (tendering).

THE COURT: All right. I don't like the way it's been handled, but I am taking it at face value that nothing has been done that -- well, I am not going to take it that

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far. I'll just let it drop where it is. Go ahead and present your motion. Excuse the witness if he cares to leave -- if you are through with him, if everybody is through with Dr. Teitelbaum.

MR. ORTEGO: To be excused finally, Your Honor? I don't have any problem with that.

THE COURT: Be excused finally. Proceed with your motion.

MR. ORTEGO: Yes, Your Honor. Your Honor, the Defendant Dow Chemical Company moves for a directed verdict pursuant to the Federal Rules of Evidence 50(a), as well as the other applicable Federal Rules. In this particular case, the Plaintiff has failed to prove a prima facie case. He has proved no evidence of negligence, breech of warranty or any evidence of punitive damages. And I think that Mr. Baldwin will agree that even in his opening he said it was a strict liability case. There was no mention of punitive damages, nor is there any evidence of breech of warranty or negligence. So I ask that those counts be dismissed.

With regard to the strict liability statute, Your Honor, I also move that we be directed a verdict in this matter specifically with regard to Rule 702, 703, and 403. And I go back to what my motion was originally, to limit Dr. Teitelbaum's testimony, that just because an expert says it's so it is not necessarily so. And the theory that

Dr. Teitelbaum propounds is "is likely to cause, can cause." Only once did he ever mention medical probability or producing cause. His theory is not based on the data that is normally relied upon on experts. He admitted that 95 percent of all cases you can't diagnose the cause, and it does not go to the weight of the evidence and it would require the jury in this particular case to completely speculate as to the causation issues here in this case, and it should not go to the jury because it does not go to the weight. Therefore, I move for a directed verdict on all counts.

MR. BALDWIN, SR.: May I respond?

THE COURT: Yes. Are you seriously contending anything on punitive damage?

MR. BALDWIN, SR.: Well, Your Honor, I would like for it to stay in the case at this point.

THE COURT: Is there any evidence?

MR. BALDWIN, SR.: And I will cover that, yes.

THE COURT: Go ahead.

MR. BALDWIN, SR.: First of all, before I make any statement in response to his motion, I would urge the Court that we at this point join in the application that the Court apply the law of the State of Oregon, and his motion, I presume, should be governed thereby. But I think obviously there is evidence to support --

THE COURT: Some great similarities, is there not?

MR. BALDWIN, SR.: Very similar to Texas. They apply strict liability, 402 (a) variety. The question is whether the product is defective and unreasonably dangerous, the same as in Texas. They, I think, apply proximate cause, which I presume the Court will instruct the Jury on. Failure to warn is a specie of defect and strict liability in that state.

So I think that the Plaintiff has met his burden under that law by showing that the product was defective and unreasonably dangerous on two scores: one, that it was a defective product because it was hazardous; it would cause a serious illness, and in this instance, cancer; second, because there was not an adequate warning. And I think the evidence is clear on that, that this Defendant failed to warn of the potential dangers in the use of this product as evidenced by the witnesses read in the deposition testimony, which was first read to the Court -- I forget the witnesses' name.

MR. BALDWIN, JR.: Tipton and Kier.

MR. BALDWIN, SR.: Tipton and Kier. One of the two said that there just wasn't enough information on that product for the public to understand how to use it and the risk involved, something to that effect. The Hazard Report made by a third party says the labels are inadequate. The labels themselves are, if you view them, are inadequate

because they don't warn of the neurological problems, they don't warn of the possibility of cancer, they don't warn of the possibility that they might kill.

So I think the evidence is clear, and the Plaintiff has made a prima facie case that the Defendant is responsible and they should owe the Plaintiff under the law of strict liability.

Now as to the question of punitive damages. I think at this point there is evidence on the issue of willful conscious disregard for the rights of others as evidence by the Krummel Report. There is a report where Dow found impurities in their product that this witness, at least, has described as some of the most toxic impurities known, and the type of impurities most likely to cause cancer, yet Dow has never told a soul about that, to my knowledge. They certainly didn't put it in their literature. They certainly didn't publish it in the literature. They made no effort to inform the outside public of the fact that prior to 1978 their products contained those impurities; and that to me exhibits a conscious indifference to the rights of others.

As a result of that study, the Krummel Study, they did another study on the impurities where the last document I read to this witness said that the skin must be protected against these type impurities and, obviously, against 2,4-D. And, yes, that was a 1980 document, but -- I mean, '79

document -- but it exhibits the state of mind of Dow. Even though their on in-house people are telling them they have a product so dangerous that they must wear protective clothing and the skin must not come in contact with it, they have not yet made any effort to inform the public or to inform users such as Mr. Greenhill. And I think that goes to the state of mind of Dow and it shows their malicious and willful disregard for the rights of others.

So I think at this point at least that the punitive damage question ought to be held open.

MR. ORTEGO: If I could just respond to one thing particularly on the punitive damages, Your Honor.

THE COURT: Yes.

MR. ORTEGO: If you look at the evidence that he has, I don't think the Krummel document speaks for what he says it does, but if you look at the dates, it postdates Dow's sale of the product that the Plaintiff would have used. There is no evidence of punitive damages in this case, and it's only speculation that can be drawn from the remarks made by Dr. Teitelbaum, and the cross-examination showed it was speculation. He doesn't know exactly what the EPA has and what the EPA doesn't have. And I think there is no prima facie case for punitive damages particularly in this case, and I think we should get a directed verdict on that.

THE COURT: I am going to direct a verdict for the

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Defendant on the issue of punitive damages, but I am overruling the rest of the motion.

MR. BALDWIN, SR.: Your Honor, are you doing that in accordance with the law of Oregon?

THE COURT: Y'all are kind of changing positions on me here now.

MR. ORTEGO: For the record, Your Honor, the law of Oregon has a higher standard for punitive damages than the law of Texas. So your burden under Oregon law would be even more stringent than your burden under Texas' law.

MR. BALDWIN, SR.: I thought he had already ruled on it.

MR. ORTEGO: Yes, I know that. I just wanted to let the Court know it doesn't matter what law applies, the burden under Texas' law would be more -- I will quit while I am ahead.

THE COURT: Of course, you wanted Texas' law at one time, and we --

MR. ORTEGO: Well, I moved, I guess, Judge --

THE COURT: I think you moved to apply Oregon law.

MR. ORTEGO: I did.

THE COURT: And I assume now that both of you want to apply Oregon law?

MR. ORTEGO: Well, I don't know.

MR. BALDWIN, SR.: Yes, Your Honor.

MR. ORTEGO: Well, I have a problem with that, Judge, now I guess is that -- well, I moved for Oregon law and the Court denied it and I prepared my case accordingly under Texas' law.

THE COURT: Would you have prepared it any differently had I gone originally with Oregon law?

MR. ORTEGO: I would think so, Judge, but I can't give you specific instances at this point.

THE COURT: Well, I am going to leave it like it was originally, apply Texas' law. Now, I may be getting boxed in here.

MR. ORTEGO: That is not my intention.

THE COURT: And I don't want to get boxed in.

MR. ORTEGO: May we approach, Judge?

THE COURT: Yes. Well, there is no point. Everybody is gone.

MR. ORTEGO: I don't want it on the record.

THE COURT: Oh, you don't want it.

(At the Bench, off the record discussion, with Mr. Baldwin, Sr., Mr. Baldwin, Jr., and Mr. Ortego.)

(Open court)

THE COURT: We will hold the ruling as to what law applies in abeyance at the moment. The punitive damages, I am adhering to my ruling as to that portion of this motion.

I am overruling everything else except whether or not the law of Oregon or Texas will apply.

MR. ORTEGO: Judge, with one other respect -- I don't know if Mr. Baldwin will agree. You opened up on strict liability only, and I don't know if you want that charge or if you still want the negligence in there; because I don't think there is a case of negligence or a breech of warranty, and I think you might not even want it.

MR. BALDWIN, SR.: Your Honor, you have a copy of our Requested Charge, and so does he, and I did not request a charge on negligence.

THE COURT: I didn't see it, unless there has been a supplement added.

MR. BALDWIN, SR.: There has not been.

THE COURT: All right. Bring the Jury back.

MR. ORTEGO: Judge, I won't have a witness until the first thing in the morning. It's twenty-five to five. I can get a witness in fifteen minutes.

THE COURT: You will be ready in the morning at nine o'clock?

MR. ORTEGO: I will have witnesses lined up to go in and out, Judge.

THE COURT: Do you think we can finish tomorrow?

MR. ORTEGO: I think so.

THE COURT: Since I know what day of the week it is

now.

MR. ORTEGO: Judge, I am going to do my best, and I think we can.

THE COURT: Tell the Jury to come back in.

MR. BALDWIN, SR.: May we know who the witness is, the first witness is, so we can be preparing?

MR. ORTEGO: Absolutely. What I am going to do is give you the same courtesy you gave me, I am going to tell you what I am going to use in exhibits. I am going to call you up and let you know the order. Is that fair enough?

MR. BALDWIN, JR.: That's fine.

(Jury in at 4:35 p.m.; open court, all parties present.)

THE COURT: Ladies and gentlemen, as you heard, the Plaintiff has rested that side of the case, and the Defendant will have its witnesses here at nine o'clock in the morning. We have got some matters to take up out of your presence and have been taking some matters up out of your presence.

It's not yet time to talk about this case among yourselves. I give you the same instructions that I have previously given you, don't discuss it with anybody, don't let anybody discuss it with you. If they do, contact me. Be back in the jury box in the morning at nine o'clock. You may be dismissed for the day.

(Jury out at 4:37 p.m.; open court)

THE COURT: Now, have you all gotten understood now

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who is going to be up tomorrow?

MR. ORTEGO: That is what I am making arrangements on.

THE COURT: Be seated. Well, let's go ahead and get that done now if we can.

MR. ORTEGO: What I am going to do is decide in an hour or so, and I agreed to call Scott, Mr. Baldwin, both of them, and let them know who I am going to call and what exhibits I am going to use, so we can move along quickly tomorrow. Should I call you at the office or at home?

MR. BALDWIN, JR.: Yes, we will be there until seven o'clock. I will be there until seven o'clock.

THE COURT: Anything else this afternoon? We stand in recess until nine o'clock in the morning.

(Proceedings concluded at 4:38 p.m.)

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

REPORTER'S CERTIFICATE

I certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter.

December 28, 1987

ANN E. (LIBBY) CRAWFORD
OFFICIAL COURT REPORTER

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ANN I GREENHILL, Individually and on Behalf of the Heirs of the Estate of James Edward Greenhill, Deceased,	◊	
Plaintiff,	◊	NO. M-79-79-CA
VS.	◊	Marshall, Texas
DOW CHEMICAL COMPANY,	◊	December 2, 1987
Defendant.	◊	8:55 A.M.

TRANSCRIPT OF TRIAL PROCEEDINGS

BEFORE THE HONORABLE SAM B. HALL, JR.,
UNITED STATES DISTRICT JUDGE,
AND A JURY.

VOLUME 3 of 3

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(continued)

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I N D E X

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STEVEN I. HAJDU, M.D.	5	54
JAMES J. BUTLER, M.D. (By Deposition)	91	100
ANDREW J. WATSON	120	140

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DECEMBER 2, 1987

8:55 A.M.

(Open court; jury not present)

THE COURT: Please be seated. I have been handed a Requested Special Instruction this morning by the Defendant in which the Plaintiff has an objection. So we will hear this motion at this time. Who wishes to present it? Mr. Brown, I think it bears your signature.

MR. BROWN: On behalf of the Defendant Dow Chemical the Defendant has requested what has been marked and provided the Court as Defendant's Special -- Requested Special Instruction No. A. This goes to the matter which occurred yesterday in court in the presence of the Jury, primarily the questions from the bench regarding whether or not there was, I believe the term was used, "hanky-panky" involved in regard to the medical records which were handed to Dr. Teitelbaum of an individual not -- other than Mr. Greenhill, I believe a Mr. Moss.

Outside the presence of the Jury, I believe through the use of the deposition of Dr. Teitelbaum, it was determined that the exhibit was in fact marked at the deposition, was in fact handled by Plaintiffs' counsel, was reviewed by the witness himself in that he handled the exhibit, located the records involved, that is the record of a Dr. Watson regarding x-rays from dental care, and

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that also here before the -- in front of the Jury during the testimony there was testimony, as I recall, from the witness that Dr. Walters was Mr. Greenhill's family physician, I believe was the witness's recollection.

I believe outside the presence of the Jury it was determined that in fact the proper procedures were followed, that this in fact was an exhibit which the witness did see, he had handled, thumbed through to in fact find the very record that he testified from not only on deposition but that he again referred to or was the basis of his statements in court that Dr. Walters was a physician of the deceased, when in fact, I believe it is undisputed, that the records simply were not such records.

This evidence, of course, was introduced only for the purpose to test the reliability of the witness as far as what was the basis of his opinions. Certainly the review of the medical records was a substantial foundation for his opinions given in this courtroom. And, therefore, we feel because the Jury was not privy to the discussions before the Court, outside their presence, which in effect cleared up this matter as far as whether this exhibit was properly marked, Defendant's concern is that there is prejudice to the Defendant Dow Chemical in that all the Jury heard was from the Court a concern -- is there something out of order, is there hanky-panky, implying someone may have done

something wrong.

We feel that this is a curative instruction to cure that prejudice or whatever might be in the minds of the jurors as they were not privy to what eventually was shown to the Court; and in that regard, request the Court to read before we put on our case in chief the Requested Special Instruction No. A.

THE COURT: Thank you.

MR. BALDWIN, SR.: Your Honor, I just have this comment, that the Jury heard what went on and the Jury has the opportunity to evaluate what went on. I think to give an instruction would be a comment on the weight of the evidence. They have waited until after Dr. -- they agreed to excuse Dr. Teitelbaum to bring these matters up, that he could very easily have answered; and so we oppose it.

But I would say this, that if the Court feels disposed to give the instruction, I think it should be changed to where it would read as follows: "You are instructed that in regards to the record presented to the witness yesterday of an individual other than Mr. Greenhill, there was no misconduct by any witness or by any party or witness, and proper procedures were followed by the attorneys and the witness at the deposition of the witness, as well as during our proceedings here in court."

Otherwise, it would make it look like Dr.

Teitelbaum did something wrong, and you are instructing the Jury these guys didn't do anything wrong, and I think they did because they asked him about -- they apparently knew themselves that there was some record in there about somebody that didn't have anything to do with this lawsuit. The right thing and the gentlemanly thing and the proper thing as an ethical attorney should have been: "Dr. Teitelbaum, we have records here that seem to relate to some other patient. Do they have anything to do with this case?" And given him a fair opportunity to say that yes, they do, or no, they don't.

But they didn't do that, they hid that fact from Dr. Teitelbaum. You can read the deposition, and the witness's name was never once mentioned. They say I handled the documents. I don't think I did. I was there, but if I did handle the documents I sure didn't see any reference to any other witness; and I am satisfied I didn't.

They have known this, apparently, since that time. They never told me about it. The Court has asked us to exchange documents. They have never said, "Mr. Baldwin, we are going to use these documents." Up until the time they hit the stand yesterday was the first I ever knew about those documents, and I think the first Dr. Teitelbaum ever knew about them. And I think it borders on not fair play. And so I am not prepared to agree that they acted

properly in the matter. But if the Court feels differently and wants to instruct the Jury, then I think the fair thing is to instruct the Jury that the witness also acted properly.

MR. BROWN: Your Honor, might I respond briefly?

THE COURT: Yes.

MR. BROWN: Three brief points: First off, I believe it is within the province of the judge to comment on the weight if he so chooses in federal court.

Secondly, as far as any ethical obligation, I am not aware under our canons of any ethical obligation that would have been put on the counsel for defendant to in fact correct a mistake of the Plaintiff when his counsel was present -- I mean the Plaintiff's witness.

As far as Mr. Baldwin's handling the documents, I don't know that he handled them. I believe that the deposition transcript reads from Mr. Baldwin's statement: "No. 2, that's already in evidence. Here it is." Something to that effect.

Defendant has no problem with the change requested by Plaintiffs so that there will be no question there was no conduct either on the part of Dr. Teitelbaum or any parties.

THE COURT: Mr. Baldwin, prepare the -- present to the Court what you just indicated and I will grant it. But I will read it not at this time but I will read it at

SF-FL-10 PENGAD INC. MUNCIE IN 47302

the time the Court's Charge is given. So prepare what you have just indicated and submit it to the Court.

MR. BALDWIN, SR.: All right, sir.

THE COURT: Call the Jury in. Anything else?

MR. ORTEGO: No, Your Honor. Mr. Baldwin, I am going to introduce 1 and 2, the medical records we talked about and the Death Certificate before I call my first witness.

MR. BALDWIN, SR.: Your Honor, while the Jury is out --

(Jury entering courtroom)

THE COURT: Wait a minute. Go back out. Something has come up, please.

(Jury exiting courtroom)

MR. BALDWIN, SR.: While the Jury is retired it would seem to be an appropriate time to take up the question that was brought up late yesterday afternoon, and that is I told the -- on the question of whether the Oregon law or Texas' law applied. I told Counsel for the Defendant that I would agree that either the Texas' law applied or the Oregon law applied, whichever they wanted. And he was to talk to his client and inform the Court as to what his position was. And I think that we ought to get that matter cleared up.

We are certainly agreeable to let the Oregon law apply. They seemed to indicate yesterday they now wanted

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the Texas' law to apply, and if they will agree to waive any question as to whether it's the proper law that applies, that's all right with me -- to either let the Texas' law apply or the law of Oregon, whatever the Defendant wants to do. But I do think we ought to have it cleared up at this point.

THE COURT: Mr. Ortego, I think you were going to contact your client. I assume you did?

MR. ORTEGO: I did, Your Honor. May we approach?

MR. BALDWIN, SR.: No, I would rather this be on the record, Your Honor.

MR. ORTEGO: You'd rather have it be on the record?

MR. BALDWIN, SR.: Yes.

THE COURT: Yes.

MR. ORTEGO: Judge, I originally filed a Motion requesting Oregon law. I thought Oregon law would be appropriate. I thought it was the appropriate law that would be applied under the significant relationship test as in Texas. I have prepared this case pursuant to Texas' law. I have looked at some of the provisions of Oregon law and Texas law as well, Your Honor, and the state of the art defense seems to be the same in both.

And, Your Honor, at this point in time I will leave it up to the discretion of the Court whether it wants to renew or revise the Motion's previous ruling on the law.

THE COURT: Well, Mr. Baldwin said he is willing to go either way, provided it's agreeable with Defense counsel if you continue going under the Texas' law. Is that agreeable with you?

MR. ORTEGO: May I have a second, please, Judge?

(Off the record discussion at side bar between Mr. Ortego and Mr. Brown)

MR. ORTEGO: Why don't we, Judge, go with the Texas' law? I think at this point I have prepared accordingly, and it might be the right thing to do and it might be easier for everybody.

MR. BALDWIN, SR.: That is quite agreeable with me, Your Honor, provided we have the understanding that they here and now waive any objection that they might have for the Court not following the Oregon law.

MR. ORTEGO: I am not going to waive any objection. Up and to this point in time, I think it's the best thing to do under this circumstance. I don't want my appellant -- I am not going to waive any rights, but I think up and to this point in time it's the right thing to do, since we have all prepared under Texas' law. And I think if anyone ever compares the two laws, we could see if there's any difference. But, I am not going to waive any rights of my client. I think Texas' law --

THE COURT: Well, now I'm in this dilemma, with want

of a better word --

MR. ORTEGO: Uh-huh, I know.

THE COURT: -- I mean, everybody all at once is kind of switched sides here, in one way, and in one way the Defendant hasn't. I don't want to be put in the position of knowing that if we continue applying Texas' law that it is going to be a flagrant overture to have this case reversed and tried over again, assuming that it is appealed.

MR. ORTEGO: I think --

THE COURT: I would be agreeable to keeping it on the Texas' law basis provided that the defense agree to it.

MR. ORTEGO: I think, Judge, the way to put it at this point in time, I agree to Texas' law. If there was any prejudice whatsoever before, I am on notice that it is Texas' law and I will agree to Texas' law at this point in time.

THE COURT: You'd waive any objections you might have to the applicability of Texas' law if this case is appealed?

MR. ORTEGO: Could I have one second, Judge? I am not going to do that without my client.

THE COURT: All right.

(Off the record discussion at side bar between Mr. Ortego and Mr. Makulski)

MR. ORTEGO: Judge, the best I can do is that I will

not waive any rights, but as I state here now I am agreeable that Texas' law should apply in this case at this point in time. And I think that's the best I can do. I don't want to waive any rights that I have, but I am agreeable at this point in time, before summation and before I put my case on, I am trying this case pursuant to Texas' law.

THE COURT: And you are agreeing to try the case before the Court on the basis of Texas' law being applicable?

MR. ORTEGO: Right now, yes, Your Honor, I am agreeing.

MR. BALDWIN, SR.: Well, that to me would imply that he has waived --

THE COURT: The Court is taking the position that by the statement just made by Mr. Ortego that this case will be tried with the consent of all parties by applying Texas' law, and that's the basis upon which we will proceed.

MR. ORTEGO: Yes, Your Honor.

THE COURT: Bring the Jury in.

(Jury in at 9:10 a.m.; open court, all parties present)

THE COURT: All right, the Defense will call their first witness.

MR. ORTEGO: Yes, Your Honor. Before I call my first witness, Your Honor, I'd like to offer into evidence Defendant's Exhibit No. 1, which are certain medical records of the Plaintiff, James Greenhill; and Defendant's Exhibit

No. 2, which is the Death Certificate and attaching correspondence regarding Mr. Greenhill's death.

THE COURT: Any objection?

MR. BALDWIN, SR.: No, Your Honor.

THE COURT: It will be admitted. What is No. 2 again, please?

MR. ORTEGO: That is the Death Certificate, Your Honor --

THE COURT: All right.

MR. ORTEGO: -- and attached letter from doctor.

MR. BALDWIN, SR.: May I see the medical records?

(Mr. Ortego tendering exhibit to Mr. Baldwin, Sr.;)

MR. ORTEGO: Judge, my first witness is just leaving the men's room, I understand. He will be right here.

THE COURT: All right.

(The Witness enters courtroom, and is sworn)

STEVEN I. HAJDU, M.D.

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. ORTEGO:

Q Good morning, Doctor.

A Good morning.

Q Can you please state your full name for the Jury, please?

A My name is Steven I. Hajdu.

Q And how old are you, Dr. Hajdu?

A I am fifty-five year old.

Q And are you married?

A I am married.

Q Do you have any children?

A I have two children.

Q And what does your wife do?

A My wife is a physician in New York.

Q And where do you currently reside?

A My home is on Long Island in New York State.

Q Where did you receive your undergraduate degree, Dr. Hajdu?

A I finished my high school education, and from there I entered medical school in Hungary in 1952. And I almost completed my medical education in Hungary in East Europe.

Q Is there a reason why you did not complete your medical education in Hungary?

A Yes, there is a reason.

Q Can you tell us why?

A The reason is that in 1956 the Hungarian people and students were involved in an uprising against Communist Russia. And I'd been a senior medical student at that time in the Hungarian medical school, just north of the Yugoslovian border, and I'd been elected to be one of the

student leaders fighting against the Russian Army.

Q And is there a particular reason why you then left Hungary?

A Well, we succeeded at the end of 1956 to throw out the Russians from Hungary, but ultimately Kruschev sent back another army and we were defeated. And during the winter of '56 and early part of '57, the workers and students continued the activities against the Russian invading army; but when the snow melted away, we had no chance because the hill country was open to them. And we had to make a decision, all of us, that we stay there and die or try to find a way out of the country.

Q Did you flee the country?

A Yes. Ultimately, I chickened out and left the country in early spring of '57.

Q Where did you go after you left Hungary in '57?

A Because of my city was just on the other side of the Yugoslavian border, I crossed the border to Yugoslavia where I was a guest of the Yugoslavian state in a confined setting for about eight months.

Q And where did you go to finally complete your medical education?

A With the help of some American citizens who were working for such an organization in that part of the country and the world at that time, I'd been brought out from Yugoslavia and

put back in medical school in a French university in Western Europe in Belgium.

Q And did you complete your medical education there?

A I did. I had to repeat the clinical subjects, beginning with pharmacology and two or three other subjects, gynecology and so forth, and graduated from that school with distinction in 1960. And after that I elected to serve one year in the same university as intern.

Q After you completed your internship, what did you do?

A During my internship I met American students in our school, and shortly after I arrived from Yugoslavia to Belgium, I received an American immigrant visa with no date on it. And I had the option to enter the United States as political refugee with that visa, and I used that. And although I had a job in cancer hospital waiting for me, I decided to come over and take a look at what this country is all about.

Q And where did you go when you came to the United States after you graduated medical school?

A I chose to go to Jacksonville, Florida. Out of the offers I received, I found the offer from the Baptist Hospital in Jacksonville, Florida is the best offer for my continuing education as a resident physician.

Q What is a fellowship, Dr. Hajdu?

A The fellowship is a sort of honored position to a person

who want to specialize to be expert in certain areas in medicine, and usually offered to trainees in the residency programs in surgery and pathology and chemotherapy, to spend a year or two years or a number of years in a specialized institution to learn about certain things seriously.

Q Can you briefly tell us the different fellowships that you've had in the United States?

A I've been invited to go, after two years of training in Jacksonville, Florida at the Baptist Hospital, to go up to New York and be a fellow at the Memorial Sloan-Kettering Cancer Center. And from --

Q What year is this, Dr. Hajdu?

A That is '63 and '64. I accepted that because from very early time, even back in Europe, I felt that my area of interest is in or about cancers.

Q How long did you stay at Sloan-Kettering in New York?

A That was a one-year fellowship. And after that year, and during that year, I took the New York State license exam for physicians and I received my license to practice medicine. And after that year, I had been offered another fellowship in Cleveland, Ohio.

Q What did you do in Cleveland, Ohio?

A In Cleveland, Ohio I'd been there for three years, and I had a cancer fellowship from the American Cancer Society and the Public Health Service of the United States to complete

my education along the same line, and carrying out additional training in clinical pathology.

Q Why don't you tell us when you talk about clinical pathology, what is a pathologist and what does a pathologist do?

A The pathologist is a physician who after being a physician will continue to study the etiology of diseases.

Q Stop one second. What does the etiology of diseases mean?

A Well, different diseases are caused by different things, and in many situations we do know because of research work in the field what are those causes. And it is the duty of pathologists to work in this area and constantly be alert to find new etiologic causes of old and new diseases, and constantly be alert to pass on that information about the causing agents and the etiology of diseases to other physicians. That's basically one role of the pathologist.

Q What are the other roles, Doctor?

A The other role is that the pathologist is a consultant to a number of physicians and institutions as a diagnostician. It is the role of the pathologist to decide what type of disease a human being has. The person may enter in the office of a doctor, but actually the type of tumor, for example, a person has or doesn't have is going to be decided by a pathologist. In many cases the patient doesn't even

know that. And, of course, a number of other things pathologists must do, like teaching and research.

Q Pathologists get involved with treatment as well?

A Yes, pathologists are involved in treatment in several ways. Among the most important contribution of pathologists to treatment is by discussing the case or the problem with the physicians, and very often members of the family, when the pathologist is called upon to make a diagnosis. The pathologist is part of the team in institutions when ultimately somebody will undertake the actual physical treatment. Pathologists are consultants to chemotherapists, surgeons, and radiation therapy, when it comes to tumors.

Q Dr. Hajdu, what is an attending pathologist?

A The attending pathologist is a title that physicians carry at major institutions, or tumor hospitals like Memorial Sloan-Kettering Cancer Center in New York, or at MD Anderson Tumor Hospital in Houston, Texas, is the highest title in qualifications. It is equal to senior full professorship in a medical school.

Q What professorships do you have?

A After I been invited to return to Memorial Sloan-Kettering Cancer Center from Cleveland in 1966, I had been upgraded as "assistant professor at Cornell University Medical College in New York City; and from there I obtained the higher and higher titles, and at present time I am a

full professor in teaching at Cornell Medical School in New York City.

Q What, if any, certifications do you have?

A I am certified by the State Board of New York to practice medicine as a physician. I am certified by the Ohio State Board as a physician, and I am certified by the American Board of Pathology in anatomic and clinical pathology.

Q Let's stop there. What does it mean when a doctor is certified, and what is anatomical and the other type of pathology you just mentioned?

A Certification is, in this country, is carried out by certain organizations under the supervision of the American Board of Medical Specialists. This organization is umbrella organization that is overseeing the physicians who are practicing in surgery, or in radiation, or pediatric or pathology, are qualified physicians to attend to patients and diagnose and treat patient's problem. And the anatomic and clinical pathology are two parts of the same Board examination.

Q What are, very briefly, Doctor, those two types of pathology? Do you take exams? Or does this work?

A The anatomic pathologist is a physician pathologist who is primarily interested in the etiology and diagnosis of cancer, and tumors, and other diseases under the

microscope when a biopsy is obtained from a patient.

The clinical pathologist is a physician who is primarily interested in the patient's internal problems, how the patient's immune problem is working, how the patient's immune system is working, how the patient's obtained and why an infection, for example, what are the blood problems, or chemical problems of the patients. That's the clinical pathology.

Q Doctor, are you certified in both of those types of pathology?

A Yes, I am certified by the American Board of Pathology in anatomic and clinical pathology.

Q Let's go back -- let's not go back, let's come to today. Tell us exactly what you do today, and where you work, and what your duties are.

A I am a senior attending physician and pathologist at Memorial Sloan-Kettering Cancer Center in New York City, and I am on the staff of surgical pathology. I am on the staff of the autopsy pathology, and I am the head of one of the 27 departments in Memorial Sloan-Kettering Cancer Center.

Q For most of the folks who don't know about the Sloan-Kettering, can you tell us what type of hospital it is, where it is and a little about the hospital?

A It is a tumor hospital and is an old one dating back to

late 1800s in New York City. And it is a tumor hospital very much like the tumor hospital in Houston, Texas. It is a referral center where we receive patients and patients' problems from other physicians and other institutions from across the country for second opinion or for treatment, and from around the world.

Q How large is the hospital itself?

A It takes up three city blocks in New York City, and it's 26 story of each building. And we have in the hospital unit 650 bed for cancer patients, and we are seeing in our outpatient clinic nearly half a million cancer patients per year.

Q And what --

A It is the biggest cancer hospital in the United States.

Q What exactly do you do with these cancer patients at Sloan-Kettering?

A I am a consultant to physicians and institutions. Patients are referred to us, and when patients are approached any one of us it is required by the bylaws of the institution that I, myself, or a colleague of mine, an associate of mine, must review the medical records of the patients from wherever the patients come from, the radiology films and other laboratory findings, the operative findings, what was done to the patient, and ultimately to review the biopsy material, the tissues removed from the patient, or whether the patient

has got cancer and whether it was diagnosed correctly by somebody, that disease, some other place.

Q You talk about this team approach, you are the head of a team. What does the team do, who is on the team, and what do you do on a daily basis?

A The team, in almost every patient's situation at our institution, is composed of four parties. One is an oncology pathologist, like myself.

Q What is an oncologist? Tell us what that is first.

A The oncology pathologist who specialize for tumors, or cancer problems, and the other is an oncology radiologist, a radiologist in radiation therapies, at the same time in many situations, who is a radiation therapist for cancer.

The third member of the team is an internist, or medical oncologist, who is most often known as a chemotherapist. And the fourth member of the team is an oncologic surgeon, a surgeon who are doing nothing else than surgery on patient who got tumor, or cancer.

Q How many people are on your team in total?

A This basic four are the four that I outlined, although we may call in others as needed. And in an institution like ours, we are walking distance with our patients and the patient's room from each other. In every case, whenever we make a decision and collectively design what should be done to the patient, whether patient should stay with us, whether

a patient will have surgery or chemotherapy, it is decided by this team. And the pathologist is one of the four people in every team who actually is the, as locally call them, is the policeman over others, or traffic controllers. The pathologist is the one who is supposed to direct attention of others where it is needed.

Q Do you actually see patients?

A Yes, I do.

Q How do you see them? What do you do?

A Through this system of ours that in every patient's problem is reviewed by attending physicians, and one of those physicians will be always an oncology pathologist, that's the routine, daily operation. And recently, in the last few years, hardly a week goes by that I don't get a call from one of my colleagues or directly from members of the family from the country who would like to talk to me or see me, because they learned about what I am doing or they learn about that I made the diagnosis in somebody in the family, and they want to talk to that person, in this case myself, who made the decision whether the patient will have an extra several years chemotherapy and radiation or whether we have to take off somebody's leg because of a condition that calls for that.

Q Let me ask you this, is Sloan Memorial Hospital Kettering a teaching hospital?

A It is a teaching hospital, at the same time a research hospital.

Q What do you do with regard to the medical school and the research at Sloan-Kettering?

A The institution, the Memorial Sloan-Kettering Cancer Center, is a private cancer institution, are two parts. It is built almost the same way the tumor hospital, MD Anderson Tumor Hospital, is structured in Houston. There is a hospital unit. There we have our 650 beds with patients, and the clinics. The second component is a research unit. And many of ours have dual position: inpatients' care and in research. And right across the street from us is our medical school, the Cornell University Medical College. So this two are in the same structures, same city block, and the medical school is across the street.

Q Do you teach medical students at Cornell Medical School with regard to cancer?

A Yes, I do. Up to present years, I had for many years every year twenty students who worked practically daily with me in pathology. And now that I am getting older and other responsibilities I have to fulfill, I lecture. As a fact, just two weeks ago I lectured to our students.

Q Very briefly, what other professional positions have you held besides the medical college and Sloan-Kettering? What other hospitals? Are you a consultant to other hospitals now,

and what are the positions?

A I am a consultant to a number of hospitals and institutions across the country, and institutions in foreign countries, like the Cancer Institution in Canada. I am consultant to University of Chicago, and I am consultant to a practicing group here in Texas. I am consultant to local hospitals, in small and big hospitals, all the way to California, and I am an advisor to the city and state Public Health Service, and to the commissioner of the State of New York in cancer matters.

Q Very briefly, Doctor, can you tell us what professional societies you belong to, and what role you have in them?

A I belong to at least a dozen or so professional associations, and the associations are ranging from societies for pathologists in the United States, and then international associations, to association of surgical oncologists and clinical oncologists.

Q What is oncology, and what is an oncologist?

A Oncology is the field or science of neoplasms. In the broad sense, it is the field of science of tumors, or cancer. The oncologists are the physicians who are caring about patients who are having one or the other of those three thousand cancers, and whether they are surgeons, radiation therapists, medical oncologists or oncology pathologists, is just a sort of minor difference.

Q What are these societies that you are in, or a member of, deal with oncology?

A The oncology societies, as well as the other associations, meet regularly in local settings, usually with the support of the American Cancer Society, and at state level, at national level, and international level. And those people who are senior in these societies, like myself, are called upon to chair different sessions and different meetings, and oversee the proper discussion by younger physicians, and supervise the conclusion reached and made by others.

Q What positions have you held, besides the ones you mentioned, in these societies?

A I am the past, one of the past presidents of the American Society of Cytopathology. I am the past chairman of the American Association for Pathologists in control of practice of laboratory medicine in the United States, and I am the vice-president of the International Board of Cytopathology, and I am the chairman of the certifying body of cytopathologists.

Q What is cytopathology for us first? I should have asked you that first.

A Cytopathology is a narrow, small field but an important field under oncology. It belongs to the anatomic pathology part of pathologists. For example, the cytopathologist's daily routine work will be to review, let's say, polypous, taken

from ladies by gynecologists. And it is the cytopathologist's duty and role to decide whether that lady will need additional examination, follow-up examination, when, and consult with the gynecologist or the gynecologist consult with the cytopathologist to decide what is the next move or best modality of treatment, if treatment is needed.

Q Very briefly, what professional honors and awards have you received?

A I received during the last two decades several honors from my colleagues and associations across the country and from foreign countries. One of the highest ones I treasure, a recent recognition I received from the North and South Carolina Associations of Pathologists, who gave me the honor to receive the Shelley Award of those two state associations.

Q What is the Shelley Award? We don't know.

A It is an annual lectureship award given to somebody on committee who feel worth to receive that award. In this particular setting, they asked me deliver a seminar, a one-day seminar, in Charlotte on sarcomas, lymphomas and Hodgkin's disease.

Q Okay. And do you meet with scientific groups regularly and make presentations or give presentations to those groups?

A That's part of our teaching activities at home and in different parts of the country. I have lectured here in the

State of Texas at least every other year, and all the way from Tokyo to Australia, because we feel that what we believe in and what we practice we must pass on to other physicians. so they will do the same or will follow what we do. It is an obligation, with some hardship to fly in from one place to the other and sitting on those small chairs in the airplane.

Q Now, are you the editor of any learned, scientific journals?

A I am.

Q And what does an editor do, and what scientific journals are you involved in? Which ones are you the editor of?

A I am on the editorial board of a number of medical journals, and consultant to at least a dozen others. I am the associate editor of the American Journal in Cytopathology that is devoted exclusively to early detection or detection of cancer at the cellular form. And I have been just elected to be the co-chairman of the oldest pathology journal, Acta Scandinavica (pho).

Q You've served on boards and committees on cancer issues?

A Yes, in several, as outlined, and it's ranging from local teaching to international meetings, and through the various committees as oncology societies and societies in pathology are structured, we are in constant communication with other societies. The committee chairman is usually the

liaison that's in the others, like surgeons, like radiation therapists, and I served in that capacity in many societies.

Q Briefly, and I hate to do this all the time, get your resume, your C.V., and describe the areas of research you have done in the past twenty years in cancer.

A When I been in Jacksonville at the Baptist Hospital, I begin to think about infectious agents and viruses as causing agents in a number of things, and I continued that type of work when I had my fellowship up in New York. It started out from an experimental work in liver. There on I went to Cleveland where we had a feeling at that time that some of the gynecology cancers may be caused by viruses, like Herpes, and things like that; and I continued my work on that area.

On return to New York, I returned to my old interest, because, first of all, I got invited because I needed somebody interested in sarcomas, lymphomas and Hodgkin's disease. So when I return in 1967, from there on in my clinical research and in basic research I spent, whenever I had time for research, after hours and during weekends, on research involving sarcomas or connective tissue tumors.

Q These are cancers?

A Yes, many of the connective tissue tumors are, unfortunately, a form of cancer.

Q Have you authored any scientific medical books on any of

these areas?

A I did.

Q What subjects are covered in the books that you have authored?

A My first book I wrote with my wife --

Q Maybe I can help you a little.

A -- a fellow doctor, is on the cells, or the cytology of connective tissue tumors that includes soft tissue tumors, bone tumors, and lymphomas, with the inclusion of Hodgkin's disease. That was published in the mid-seventies on the science of connective tissue cancers.

The second one is this blue book that was published on soft tissue tumors I wrote in 1979. It is dealing with soft-tissue sarcomas exclusively. The oncology part and the pathology part of that, and it is today regarded as the first textbook on that subject.

The third book I published last year. It is a comparative review of all the cancers that one can find in soft tissues and connective tissues. It is written with the intent to point out to physicians the difficulty that is involved in the diagnosis of some of these tumors, and the overlapping clinical and microscopic appearances of some of these tumors.

The fourth one is in preparation right now by my publisher, hopefully it will be out in '88, is dealing with

the cell biology aspect of these tumors, sarcomas, lymphomas and including Hodgkin's disease.

Q And it includes Hodgkin's disease. Now, those are the books, the three books you have there. Have you authored any chapters of books edited or put out by other scientists?

A Yes, I been invited to contribute to the books of others in surgery and oncology in at least a dozen or more occasions. And I have a chapter on the same topic in a medical oncology book edited by Professor Caulibrasy (pho) from Rhode Island University; and I have a chapter in a surgical oncology book with the chairman of surgery from Memorial Sloan-Kettering Cancer Center that is about to be released from Philadelphia.

Q And what do these chapters deal with?

A The oncology chapter deals with the background, the evolution, the development, the appearance and distribution of connective tissue cancers in the human body, and link the microscopic appearance, as pathologists see it, with the clinical appearance. The same is for the other one, basically from the surgeon's point of view.

Q Have you authored any scientific articles that have been published, in addition to your books and the chapters?

A I did.

Q Approximately how many, and what were the subjects?

A Oh, something in the range of 200, or by now, if it

would be updated, over 200.

Q What topics do you deal with in your over 200 articles?

A Almost all of the articles are dealing with or another form of the cancer. Most of them are dealing with connective tissue cancers, sarcomas.

Q Now, what is a peer review publication and journal?

A The peer review is a type of review process that is very much needed. Members of the editorial boards of medical journals have editors, co-editors and editorial board members; and a manuscript or an article written by somebody will be submitted to at least two members of the board for review. And if that is found to be such an article that it carries some information that should be known by others or should be permitted to be published to call attention to the substance of that article, the editorial board will publish it. Now that is different from letters that are sent to editors from different parts.

Q Are you a part of this peer review?

A Yes.

Q Approximately how many times have you published books or articles for the scientific-medical community in which Hodgkin's disease is discussed?

A At least three dozen, or probably more occasions, because it is a connective tissue tumor, so it belongs to that --

Q It is a connective tissue tumor?

A -- particular area.

Q Approximately how many times have you published books, articles or scientific materials involving lymphomas, generally?

A It's about three or four dozen different contributions.

Q Approximately how many times a week or a year, whatever it is best for you to put it in, have you diagnosed Hodgkin's disease and participated in the treatment and investigation of Hodgkin's disease?

A I diagnose Hodgkin's disease about three or four cases per week. It may be more than that. That is my feeling about it. And with that of course I see about twice as many lymphomas per week, about six or seven lymphomas of non-Hodgkin type.

Q Now the pathologists, as you stated, as part of this team you diagnose the disease, you participate in seeing if there is a cause, and you also are involved in the treatment?

A That is the pathologists at our institution, all the major tumor hospitals, is part of the team that is designing the treatment and the type of treatment the patient will receive, whether it is surgery and what type of surgery, whether it is radiation therapy and surgery, or medical oncology treatment and surgery, and to what extent. Yes, it is my daily duty.

Q Have you testified as an expert in any other litigations

that you know of?

A I testified in about eight or nine cases during the period of twenty-five years.

Q When is the last time that you recall testifying?

A I testified last time here in Texas about three or four years ago in a federal court in Austin, Texas.

Q Approximately how many of those nine times over the last twenty-five years, how many times have you testified for plaintiffs and how many times have you testified for the defendant?

A Most of the time I testified against doctors and institutions in behalf of the patients or the survivors of the patient.

THE COURT: Mr. Ortego, let's try to stay as close to the lectern as we can.

MR. ORTEGO: I'm sorry, Judge, I was wandering.

THE COURT: We all wander at times.

(Mr. Ortego continuing:)

Q We went over this, and I want to go over it one more time to make sure we get it right. A patient comes in to Sloan-Kettering, he is referred to you by another doctor, what goes on when you are diagnosing the cancer, the etiology, are you participating in all of those functions?

A I have to. That is my duty to fulfill every day, and every case I am approached by my colleagues or outside parties

who are referring to me cases from across the country. As I indicated to you earlier, in all the institutions, including ours, just like at the tumor hospital in Houston, a team approach is the prevailing approach and is the proper approach to diagnosis and management of patients. Nobody knows everything, therefore the team is safeguarding the patient's rights and the patient's right to be treated the most appropriate way.

Q At this time I am going to show you Defendant's Exhibit 5 which is your Curriculum Vitae. Would you tell the Jury what that is?

A It is my C.V. that is not completely update. There are some missing parts because my secretary had no time to work on it. She got pregnant and delivered the baby and took off for six months, and I have no secretary for six months.

Q Why do you maintain a C.V., or resume or whatever?

A It is a document that is required by the educational office in all institutions and the medical school to be filed an updated form of this document, with the performance and contribution of the physician members of the staff at the end of every year. And at the same time it gives a cross-section of one's background.

Q What, just briefly, what is missing in the resume if you had a chance to update it?

A My lectureships and contributions to various societies'

activities in 1987 are not included. My honors and awards I received from others in '87 is not listed, and the published articles or the articles that were submitted for publication and accepted for publication by various medical journals are not complete. It's not un-to-date. There are several other things there, should be there at the end of the year.

MR. ORTEGO: Your Honor, I now move Dr. Hajdu's C.V. into evidence.

THE COURT: It will be admitted.

MR. ORTEGO: And I request that Dr. Steven Hajdu be qualified as a physician and expert in the areas of diagnosis, etiology and treatment of Hodgkin's disease, lymphomas, and cancers generally as they occur in humans.

THE COURT: Any objection?

MR. BALDWIN, JR.: We have no objection, Your Honor.

THE COURT: He will be admitted as such.

(Mr. Ortego continuing:)

Q Do you have any occasion to do any work or do any review about a man named James Greenhill?

A Yes, I did.

Q What did you do with regard to James Greenhill?

A Somewhere early part of this year, in February or March, I been called by Dr. Pierce to -- and asked me whether I am

willing to review some medical records and some doctors' notes and some other documents about a case that patient had some sort of tumor, or tumor as a problem. And I said yes, I am willing to accept those documents for my review.

Q When you talk about Dr. Pierce you mean someone from my office?

A Yes, from the office of your law firm.

Q And did you review these records?

A Yes, I did. He passed on to me these records early part of this year, and also sent along, as I requested, Mr. Greenhill's statements about his illness, and two doctor's depositions, copies of their statements.

Q Dr. Hajdu, do you have an opinion, within a reasonable degree of medical probability or certainty, as to what disease Mr. Greenhill had up to the time of his death?

A Mr. Greenhill unfortunately had a very advanced Hodgkin's disease diagnosed in the summer of 1979. And he was treated for this disease, and I think the doctors who cared for him did an excellent job that he was alive with such an advanced disease for seven years, although unfortunately and ultimately he died with the disease. So he had Hodgkin's disease.

Q What do you base your opinion on that he had Hodgkin's disease?

A Well, the documents I received from various hospitals

and from the doctors' notes I found in the medical records indicated that the patient had Hodgkin's disease diagnosed. As a fact, one of the local doctors, a pathologist, diagnosed his disease as a Hodgkin disease, although some other local doctors, pathologists, had some other thought about this gentleman's tumor. The pathologists had the foresight to use the option for second opinion to send the material, the biopsy material obtained in the summer of 1979, to a major tumor hospital, or one of the major tumor hospitals in the country, to Houston, Texas. And an old colleague of mine, Dr. Butler, who is the fore-eminent authority on the diagnosis of Hodgkin's disease, confirmed the diagnosis on the biopsy material of Mr. Greenhill as Hodgkin's disease in 1979 or so.

In addition, the course of the disease, the way it developed and progressed in the patient as documented in medical records, shows that the doctors, the radiologists, the oncologists, were correct when they felt that the patient had Hodgkin's disease. And ultimately the treatment applied to the patient's disease, the protocol, the patient reacted to the treatment as expected, and the patient died, unfortunately, again with the almost prescribed progression of the disease, the way it spread to the lung, for example.

And finally, as a pathologist I requested during the summer, I assume, the biopsy slides, the microscopic slides

that were prepared from the tissues of Mr. Greenhill. And that was given to me, reviewed it, and diagnosed it that indeed in 1979 the biopsy material removed from Mr. Greenhill's left neck shows Hodgkin's disease.

Q Without getting too technical, what did you review on his slide that made you come to the determination that it was Hodgkin's disease as opposed to another disease?

A Hodgkin's disease has at least four known microscopic forms. One form will rise from the other under the microscope as we see from that cell to that cell. And Mr. Greenhill had one of those four forms, the lymphocytes predominate type of Hodgkin's disease in his neck area. That diagnosis is rendered by Dr. Butler and myself because we recognize the pattern of the cellular changes, the way the cells are relating to each other in the lymph gland, lymph node; and ultimately, the presence of a highly unique type of cell in this setting, we call "Reed-Sternberg cell."

Q Now, I think we had better explain this a little. When you say there is a highly unique cell, is that involved with Hodgkin's disease?

A It is a cell we identify in Hodgkin's disease, and look for it and search for it in the microscoping biopsy material. It has a characteristic appearance, and combining that with the overall cellular changes that surrounds that cell, that lead us to diagnose Hodgkin's disease, one or

another type.

Q Did you find that Reed-Sternberg cell?

A Yes, I did.

Q And did Dr. Butler find that?

A Yes, he did.

Q Can a Reed-Sternberg cell be different for some pathologists not to find?

A Well, I guess we are all different, and different at level of our preparation or expertise, and some may find it, some may not. Some may look for it; some may not. I sincerely hope that all the pathologists who are practicing in tumor hospitals when ultimately most tumors are diagnosed and the fate of patients' decided would recognize in this microscopic material that there are Reed-Sternberg cells on those biopsy slides.

Q And the Reed-Sternberg cells is conclusive that it is Hodgkin's disease when looking at the cells in their whole?

A With the additional components of the pattern and the relationship within those other cells. The two together makes it Hodgkin's disease.

Q Now did you review another report from a Dr. Stolz suggesting early on that another diagnosis besides Hodgkin's disease?

A Yes, I saw that report, and I think his report preceded the gentleman's report, the pathologist's report, who thought

that it was Hodgkin's disease and referred it properly to somebody with higher authority or expertise like Dr. Butler. Yes, I saw that report. He was -- he made a mistake, and I am glad that was not remained unchallenged, because if they follow that diagnosis the patient would have been mistreated.

Q Subsequent to Dr. Stolz's original diagnosis, when does Dr. Butler's diagnosis fit in? How did he get it, and how did that work?

A I think the gentleman you just mentioned, Dr. Stolz, was the primary custodian of the biopsy material, and he was not rendering the diagnosis of Hodgkin's disease. He called it some sort of other type of lymphoma, if I am correct, with all the built-in danger of mistreatment of Mr. Greenhill. And at the same time he was foresighted to consult with another pathologist, and that was the gentleman, Dr. Koenig, I think was the name, who was consultant to the first one. And the second pathologist thought that it is Hodgkin's disease, and having this two different views, they sent the case to Dr. Butler. And Dr. Butler has certainly seen more Hodgkin's disease in the country than practically any pathologist in the United States. He is the dean of the field of lymphomas.

Q Dr. Haidu, we have talked about this for a while. Why don't you tell us what Hodgkin's disease is.

A Hodgkin's disease is a tumor, or tumor-like process, that is involving the lymph nodal system, to begin with, in the human body. It usually begins in one area in the body, and will spread from the lymph nodal structures to surrounding areas, soft tissues and bones, and will travel to distant sites and ultimately will involve the whole body. It is a disease that is very much discussed what is causing it, and with our present understanding, it belongs to the lymphomas, although we like to call it different from other lymphomas; this is why we call it "Hodgkin's disease," and that is the proper way to name this disease.

Q And that disease has been distinguished from other lymphomas?

A It is distinguished and must be distinguished because the natural history of the disease, the way it develops and the way it will progress in certain patients, the way the patient is react to treatment, and the way this tumor, as we feel originated, is different from all or practically most of the other diseases called "lymphomas."

Q Dr. Majdu, do you have an opinion, within a reasonable degree of medical probability or certainty, as to whether Tordon 101 or 2,4-D caused or contributed to Mr. Greenhill's Hodgkin's disease?

MR. GILLAM: Objection, Your Honor, until a foundation has been laid for that opinion.

THE COURT: Overruled.

(Mr. Ortego continuing:)

Q Do you have an opinion, Doctor?

A I have an opinion.

Q And what is your opinion?

A Mr. Greenhill's disease, his Hodgkin's disease, was not caused by any of those chemicals you mentioned. Contrary to that, with all medical probability, Hodgkin's disease, as we understood it for many, many years, almost from the beginning in history of the disease, up to today, we feel that the disease is induced or caused by a viral agent or a virus, or some infectious agents in combination with virus.

Q Tell us a little about Hodgkin's disease -- who it affects, male, female, ages? Can you tell us a little about that?

A Hodgkin's disease is a ubiquitous disease, a world-wide disease. It's affecting the human beings at two peaks, one peaks in age 16 and roughly age 32; that's the highest peak; and second, smaller peak will follow later part of the life in other patients, 55 plus age patients. It is a disease predominately of male sex.

Q When was Hodgkin's disease first discovered, or when was it first documented?

A It was described the first time by a Dr. Hodgkin of England in 1832 when he presented a handful of cases of

this kind of disease to his colleagues at Royal Society meeting, and ultimately that was transcribed and published.

Q And was the disease named after him?

A Honoring him for his identification and description, the disease was named "Hodgkin's disease."

Q Did Hodgkin's disease exist prior to his discovery of it?

A Oh, yes. Hodgkin's disease, just like most other tumors, dating back to ancient time, from the beginning of the origin of the human race.

Q How about lymphomas other than Hodgkin's disease, how long have they existed?

A Oh, back to hundreds of -- or thousands of years. In ancient scriptures and writings back to before the time of Christ people described glandular swellings and enlargement of glands, although it can be discussed that they had some other type of disease, but nevertheless, they did know that glands in different parts of the body do swell up and kill people.

Q Well, we talked about Mr. Greenhill. You read his medical records, and you say he was diagnosed, to your recollection, as Hodgkin's disease in 1979. Did he have any symptoms of the Hodgkin's disease, in your opinion, prior to 1979?

A Well, the earliest I found that one can think about as

a sign of a silent, cryptical, latent disease in his system was at the end of '78, if I am correct, he had some sort of accident on a road or hurt himself, anyway, and had some hip problem or pelvic problem which brought him to some doctors. They did not know precisely what is happening to him. They were thinking about a number of possibilities, but now it is apparent when the disease was diagnosed about six, seven months later as Hodgkin's disease involving his pelvis, his bones in his back and ribs, that actually that pain, that inconvenience that happened to him in '78, was a sign of a progressing disease.

And thinking about the evolution of Hodgkin's disease, he had this disease well before that time.

Q Without suggesting that this is really correct, would your opinion change if Mr. Greenhill had a lymphoma and not Hodgkin's disease?

A No. If Mr. Greenhill had a lymphoma, the signs and symptoms would be more or less the same as it was with his Hodgkin's disease.

Q Without really suggesting it is really so, would you have an opinion whether or not 2,4-D could have caused a lymphoma in Mr. Greenhill?

A There is no scientific evidence in any credible scientific publication that 2,4-D or related phenoxy herbicides causes Hodgkin's disease or lymphoma.

Q Are you familiar with the frequency of Hodgkin's disease and non-Hodgkin's lymphoma in the United States?

A Yes, I am.

Q About what is the frequency of Hodgkin's disease in the U.S. population?

A There are about six to seven thousand cases diagnosed annually. Most of the cases are diagnosed in two big clusters in the country as to geographic distribution. One is the northeast and New England states, Rhode Island area, where we have at least hundreds of prep schools and colleges in one confined area; and the second cluster is in northern California in the San Francisco area. And it is less -- far less common in the Southern states of the United States than these two areas up in the north.

Q When you say it is clustered, what do you mean by that?

A That they are found, Hodgkin's cases, Hodgkin's disease, found far, far more commonly in those areas, as I described, in the New England states, Rhode Island area, and in San Francisco area. And this is in certain ways obviously puzzling to all of us. At the same time it fits into the mapping of an old disease, what we found in the same area in high number, that was poliomyelitis, up to the late forties.

Q What significance is that?

A That poliomyelitis was ultimately proven and the virus

was isolated as a viral infection. It is a paralytic disease that caused the dead and paralyzed many people before we knew about it, what is behind it. But, my good colleague, Dr. Robbins from Cleveland and others with him, isolated the virus for which they received the Nobel Prize.

And Hodgkin's disease it seems is appearing with high proportion in the same area where we found polio at the old time.

Q About what is the frequency of lymphomas in the United States' population?

A About four times or five times the number of Hodgkin's disease, so it would be something in the range of 24,000 lymphomas diagnosed per year.

Q Dr. Hajdu, do you have an opinion, within a reasonable degree of medical certainty or probability, of the medical probability as to when Mr. Greenhill's cancer began?

A As we know his disease, I would say that having that advanced Hodgkin's disease in his pelvis, in his pelvic nodes and pelvic bones as shown on x-ray films, he must have had the disease for a few years before 1979, '78, because the evolution of Hodgkin's disease is, as is described, is a process that is progressing from one type, from one area to the other. And that takes time to reach that stage of a disease what he had, which was the highest stage at that point.

Q Dr. Hajdu, are you familiar with the so-called Hardell papers on Hodgkin's disease and non-Hodgkin's lymphoma?

A Yes, I am familiar with Hardell's papers.

Q What is your opinion with regard to those papers?

A Dr. Hardell's study concerning this particular group of tumors is a type of study that was not verified or repeated by anybody anywhere in the scientific world for the time Dr. Hardell published his study on Hodgkin's disease and lymphomas.

I find it unfortunate that Dr. Hardell was permitted as a young physician out of medical school in his country to get involved without supervision, because in his paper his department head of directors are not listed. To permit to publish a scientific report, what he thought is a correct one, he, himself, since then failed to repeat the same study with a new group of patients and a new cluster of patients. And certainly as time goes by and as we reach the year now of '86, more and more papers and scientific studies are pointing out, and national commissions and committees showed that Dr. Hardell's study had no ground. The Swedish Commission on the Swedish Academy of Science at the highest level, with the supervision of the Nobel committee, released the report in 1984. Checking into it in Sweden, indeed it is true that an unusual high number of patients are suffering from Hodgkin's disease and lymphomas. And the Swedish

Commission, under the Academy of Science, concluded that it is not so. There is no ground to it to believe so. Dr. Hardell's study was refuted by the ministry in Great Britain in the fishery industry when they reviewed the same type of material and exposure histories in England and concluded that Dr. Hardell's type of claim cannot be substantiated in England.

Dr. Hardell's study brought the Kennedy administration and some people in Canada into confrontation in 1983-84 in Nova Scotia in the form of a trial. When Dr. Hardell came to testify the people concluded in Canada --

Q Well, I think we should --

A -- that Dr. Hardell's study has no scientific value. And it can go on and on.

Q He is widely criticized?

A Yes, it is. He is criticized. As a fact, we criticize him very much by his not appearance in 1984 in New York City when under the Academy of Science of New York and the United States, with the sponsorship of Rockefeller University, Columbia University, Memorial Sloan-Kettering, an international symposium was put together by invitation, inviting all those scientists who are involved in work in this area. They came all around the world, all the way from New Zealand, all expenses paid from our sponsor's money. Only one person declined to come, Dr. Hardell.

Q Now, has this study been contradicted?

A No. The symposium proceedings by all the scientists, some 200 of us, been put together and published in the proceeding of that symposium as it was transcribed in early 1985. It is a heavy volume, and it is available to anybody who wants to see it or read it.

Q What is the difference, first of all, between an association and cause, and how does it fit in this picture here?

A Dr. Hardell's claim was that Hodgkin's disease and lymphomas are linked to those chemicals he studied, or thought he found in different parts of Sweden. So the cause is direct linking something to that something that is causing it.

The association is that the things are all around us and with us, and we exist with it or co-exist with it, but at the same time those associating components, agents, viruses and fungi, bacteria, are not necessarily the causative, inducing or causing agent. So it's two different things.

Q What type of associations have been drawn between Hodgkin's disease and other -- and what type of associations have been drawn other than the ones Hardell tried to draw?

A Well, nobody found any form of cause and effect link of the kind what Dr. Hardell was coming up with in his

paper published in 1981 in the British Journal. As a pathologist, I am reading that paper and seeing it over and again, I am very much concerned about Dr. Hardell's understanding basically of the pathology part, what he was writing about. He said there, for example, that out of his sixty patients with Hodgkin's disease in his study, there were only three people with nodular sclerosing type of Hodgkin's disease. Nodular sclerosing Hodgkin is one of the several forms, and it is over fifty percent of the Hodgkin's disease anywhere anytime, practically, will belong to that group. So I don't know how did Dr. Hardell make such a mistake that only three of the most common type of Hodgkin's disease he found in his patients.

Q All right, Dr. Hajdu, a couple of more questions for you.

MR. ORTEGO: Judge, would it be appropriate if I could take just a five minute break so I can wrap up and organize?

THE COURT: Yes, I was going to suggest --

MR. ORTEGO: Thank you. Appreciate it.

THE COURT: --that we take a break, and the Jury be back in the jury box at fifteen minutes until eleven.

(Recess at 10:25 a.m., until 10:45 a.m.; open court, jury and all parties present)

THE COURT: Please be seated. You may continue.

MR. ORTEGO: Thank you, Your Honor.

(Mr. Ortego continuing:)

Q Dr. Hajdu, where we left off we talked about Dr. Hardell's papers. When you say his findings have never been replicated or reproduced, what, if anything else, do you know about his findings with regard to maybe other papers?

A Well, he published his first observation just a couple of years before he was reporting on Hodgkin's disease and lymphomas on soft-tissue sarcomas, and he asserted that soft-tissue sarcomas were found in Sweden in increased number in the area he surveyed, which of course since then was not substantiated by anybody, verified. They all failed to verify or repeat such observation.

Q What about a Dr. Shelia Hoar, H-o-a-r? Are you familiar with that?

A Yes, I am familiar with Dr. Hoar's work.

Q Tell us a little about that. What did she find?

A Dr. Hoar reported roughly a year ago, in 1986, in the Journal of the American Medical Association a study from the cancers area where she felt that she could not verify or substantiate Dr. Hardell's, the gentleman from Sweden, claim in reference to soft-tissue sarcomas and Hodgkin's disease.

The third component of her study included non-Hodgkin's

lymphomas, lymphomas of the other kind, where we have about, as I said earlier, some twenty to twenty-four thousand cases diagnosed per year in the United States.

I am satisfied to see that Dr. Hoar and her team came to the same conclusion when it comes to sarcomas and Hodgkin's disease what many, many other people, scientists, concluded before Dr. Hoar's study.

I am somewhat troubled and short of verification of Dr. Hoar's finding when it comes to the other type of lymphomas and Hodgkin's disease, I would reserve, hold my reserved opinion and view about the validity of her observation in the fixed sense of scientific observation. It has to be verified by others. It has to be proven by others, and I say that, Counselor, because there is one component in her study, with a few others, that troubles me as a pathologist.

The non-Hodgkin's lymphomas are about four to five times the number of Hodgkin's disease in the United States. In Dr. Hoar's study, the number of non-Hodgkin's lymphomas are mathematically about the same number with the number of Hodgkin's disease in her study. And a hundred and seventy-two cases of non-Hodgkin's lymphomas are included in her test material, and some hundred thirty cases of Hodgkin's disease. And that bothers me. I don't know where are the other non-Hodgkin's lymphomas? What happened to them? Why

she did not have those patients, or patient's problem, for her study or available for her study. There are a few other things in addition, but it very seriously troubles me, that something is wrong and it must be verified before I believe in it.

Q Dr. Hajdu, what is your fee for coming to court to testify?

A The same as I receive from my colleagues in consultation, physicians, hospitals and organizations like the American Cancer Society.

Q And what is that?

A Four hundred dollars per hour.

Q One last question, Dr. Hajdu, have you or do you personally use products that contain 2,4-D?

A I do. I use for a number of years in my backyard killing with the spray-on Ortho product, dandelions that I cannot control. They always come out in late spring.

Q Thank you, Dr. Hajdu.

MR. ORTEGO: I pass the witness.

CROSS EXAMINATION

BY MR. GILLAM:

Q Dr. Hajdu, I am not going to ask you about any retainer agreement nor the charge that your hospital may make for Xeroxing, but I assume that you agree from your last statement, or one of your last statements, that it is fair for a

physician, such as yourself, if you are going to leave your practice and come testify in court to be paid for your time? Would you agree with that, sir?

A I sincerely hope so.

Q You expect to be paid for your time, do you not, sir?

A I trust I will.

Q And your expenses as well, would that be true, sir?

A Well, I had to fly here, yes, from New York City, and I have to go back somehow to New York City.

Q And you expect to be paid for your expenses as well?

A Yes, I assume. It's just like with my lecture preparation for scientific meetings, the sponsor will reimburse me for my expenses, photographic and other scientific expenses, yes.

Q You will be paid for those?

A Yes. I do the same, and I assume that I will be likewise here.

Q All right, sir. Now your fee is four hundred dollars per hour, is that correct?

A Correct.

Q And if my math is right, that's thirty-two hundred dollars per day at an eight-hour day, is that correct?

A No, I don't think about my fees that way. My participation is when I have to come down away from my office, I concluded that my average consultation fee, what

I bring in that day, is in the range of twenty-four hundred dollars.

Q Twenty-four hundred dollars per day?

A Per day. So I assume that I am here a day that somebody reimburse me, so my colleague who is covering my office by now, whom I have to pay, is going to be reimbursed from me from that money what I receive for my consultation down here now.

Q Now, Dr. Hajdu, you have been retained by Dow Chemical in this particular lawsuit, have you not?

A No, I been in consultation about this case with representatives, namely Dr. Pierce, of the firm of Rivkin on Long Island.

Q Now let's be fair, Doctor. Dr. Pierce, who -- well, he is not here today but he was here yesterday, is an attorney as well, is he not?

A He has a scientific degree, a doctorate degree, and he is a lawyer, I understand.

Q And he is a lawyer with the law firm, this New York law firm, that is down here defending this lawsuit, isn't he?

A I assume that is the correct situation. Yes, he is a lawyer with the Law Firm of Rivkin.

Q And you understood that when you were retained by Dr. Pierce that you would be testifying on behalf of the

Defendant in this case, didn't you?

A After I reviewed the medical records and I saw there is some misunderstanding about the discussion from one party to the other and I said that I am willing to participate to clear up the misunderstanding, I understood that I am consultant to the law firm. They are representing whomever they represent, yes.

Q The Defendant in this case?

A I think that's the case, yes.

Q And, in fact, Dr. Hajdu, without getting into the specific type of litigation you were involved with before, isn't it a fact that you have also been retained by the attorneys for Dow Chemical to testify on behalf of Dow Chemical in other litigation?

A Your summary of that instance is somewhat incorrect, Counselor, in due respect. I been called on to be consultant in that other case about four or five years ago, or whatever it will precisely be, a number of years, to review medical documents and material in certain medical cases for the same law firm, whomever they represented at that time. And after reviewing certain documents, when I understood from the documents that there is a misunderstanding about those medical cases, I said that if I can contribute any way to clear up the misunderstanding, you can depend on me. This was my role in that situation.

Q And the attorney that you were contacted for in that case again was Dr. Pierce, was it not?

A Dr. Pierce or his colleague. I think he was the one, or somebody else at that point.

Q Again, with this same New York law firm that's here today, is that correct?

A Yes, I think Dr. Pierce and other gentleman was from the same law firm in New York, yes.

Q And you understood that one of the defendants in that lawsuit was Dow Chemical Company, didn't you?

A Yes, I learn about it later, yes. That was one of the several defendant people in that lawsuit, you are correct on that.

Q And you knew that this law firm that we are speaking about represented the defendants, or at least one of them, in that particular litigation, did you not?

A Well, when I got involved in such a way that we begin to communicate about the misunderstanding surrounding those cases, I learn about that this law firm was representing one or several of the defendants in that case, yes, I knew that.

Q One of which was Dow Chemical?

A Yes, I think you are correct on that.

Q Now, Dr. Hajdu, as far as the diagnosis of Hodgkin's disease, as I understand it, you look for what's called a

"Reed-Sternberg cell," but that cell has to be in the proper cellular background or cellular pattern, is that right?

A Correct, Counselor.

Q Now, if you find what looks like a Reed-Sternberg cell but it is not in the correct cellular background or cellular pattern, then that is not called a "Reed-Sternberg cell," is it?

A If you are describing a situation and those two components that are needed to diagnose Hodgkin's disease, the relationship between the cells and that very specific Reed-Sternberg cells are not there, one cannot make a diagnosis of Hodgkin's disease. The cell may look like Hodgkin's disease, resembling to Hodgkin's cell of the Reed-Sternberg type, but it is not called Reed-Sternberg cells in the proper sense of the word. That type of cells we see in a number of conditions, like viral infections such as infectious mononucleosis, in infections caused by Herpes, infections caused by virus, such as the mumps virus, infections caused by other organisms, such as toxoplasma, infections such as caused by the virus that is deposited under our skin called "cat scratch disease." The cat virus is producing enlargement. The cell may look like Hodgkin's disease in all of these viral infections, but it is not Hodgkin's Reed-Sternberg cell.

Q The cell that you are describing then would be a Reed-

Sternberg-like cell, is that correct?

A That's how we like to word it, or so-called Reed-Sternberg-like cell, resembling Reed-Sternberg cell.

Q And the Reed-Sternberg cell, or the Reed-Sternberg-like cell, is also found in non-Hodgkin's lymphoma, is it not?

A Reed-Sternberg-like cells, again imitating, resembling, true that may be found, but it is not Reed-Sternberg cells. The Reed-Sternberg cell is a very specific cell.

Q I understand.

A And that is found in Hodgkin's disease.

Q But the Reed-Sternberg-like cell, or one that is very similar or resembles a Reed-Sternberg cell, is found in non-Hodgkin's lymphoma, is it not?

A To the uninitroduced, it may look like the Reed-Sternberg cell, but that particular cell at that point when it is there just like in all those other conditions called viral infections or pericytic infections are not entitled to be identified by us as Reed-Sternberg cells.

Q They are just Reed-Sternberg-like cells?

A Very much resembling to it. Like two people who are resembling to each other but they are two different people, actually.

Q Doctor, why don't you draw for me, if you would, please, sir, and I understand you told me before you are not a medical artist, but a representation of what a Reed-Sternberg

cell appears like?

A (At easel) There are -- there are a number of microscopic variations in that cell, because that cell is alive and evolved from, we feel, mononucleated single cell, as such. So, the Reed-Sternberg cell can assume, for example in the evolution from that single cell, we see a specific type of cell by behavior, something like that (drawing). That's the outside shell, like an eggshell, of the cell body.

Q And what do you see in the middle?

A In the middle is the cytoplasm, or the intercytoplasmic structures, with the two prominent structures that are about to be separated, although they may still touch to each other. This may be broken here right now or any moment in the evolution of this cell. Two structures that are trying to be very much similar to each other in contour; these are called nuclei, the inner body of the cell. Inside you may see one or several minute structures under the microscope that are called nucleoli.

Now in a later phase, and this will progress to the next one, two more cells assume perhaps an equally typical later phase of that lifetime of the cell is when two mirror image type of structures of that, the nucleoli will be like that (drawing). From time to time there is a slight overlapping or bulging over one of this nuclei over the other, or from time to time they remain fused. It depends on the

lifetime of that cell.

Q Doctor, have a seat. If you have Reed-Sternberg-like cells but in fact they are not Reed-Sternberg cells, under the microscope they can appear very similar to those particular cells that you have drawn, but they are just not in the proper background, is that correct?

A I would say can look alike and be similar, can be quite similar, but again, it calls for some expertise at certain level to distinguish those look-alike cells from this. Just like when you walk and see someone from the back, two people same size, same weight, look the same, but when you go to face to face they are two different people.

Q That's part of the problem in diagnosing of Hodgkin's disease, isn't it, Doctor?

MR. ORTEGO: Object to the form.

THE COURT: Overruled.

(Mr. Gillam continuing:)

Q Isn't that part of the problem in diagnosing Hodgkin's disease, Doctor, that cells appear to be Reed-Sternberg cells when they in fact may be Reed-Sternberg-like cells, and vice versa, depending upon the background that you see?

A That's part of the problem, Counselor, because, see, the evolution process in a disease it's very important to understand, and those who do not see a sufficient number of this type of problems daily, I would say, they may get

trapped in their own direction. This is why it is fortunate that people are referred for second opinion to a tumor institution or to so-called expert before they are treated, so the disease is verified at the highest level.

Q Now, Doctor, if I understand it, you feel, do you not, that a doctor at your level of expertise, at your level, can make a diagnosis of Hodgkin's disease without finding a Reed-Sternberg cell?

A We don't like to make that statement as you just said, Counselor, in my due respect. You do see Hodgkin's-like arrangement of the cells, particularly in the type of lymphoma that Mr. Greenhill had, that the cells are relating to each other, in this particular type of Hodgkin's, in such a way that you have a feeling, as some of the pathologists out in the local hospital area felt, that it looks so, but I cannot find a Reed-Sternberg cell. I cannot find a Reed-Sternberg cell, therefore I cannot make a diagnosis.

Now with proper expertise, proper laboratory techniques, one will find and one is going to find those cells somewhere in the biopsy material, at least one of those cells, as we found in this case.

Q My question, Doctor, to you is isn't it true that you feel, however, that a doctor at your level of expertise, by examining the background and examining the cellular structure, can diagnose Hodgkin's disease without finding a Reed-

Sternberg cell?

A Counselor, to answer straight for that good question, we do not do that. What we are doing is, under that setting what you describe, a Hodgkin disease-type of cellular arrangement, without Reed-Sternberg cell, we will express it that "I suspect Hodgkin's disease, I favor Hodgkin's disease, and I need more verification of the nature of the disease before treatment," which calls for either re-biopsy on another area or the same area, or it calls for deeper technical sectioning of the existing biopsy.

Q Well, Doctor, you recall me coming up to New York City and taking your deposition up there, do you not?

A Yes, I remember, Counselor.

Q And do you recall --

MR. GILLAM: This is Page 23, Counsel.

Q -- do you recall me asking you a question at that time, and read along with me to make sure I read it correctly here: "That if you do not find a Reed-Sternberg cell, but find this cellular background, such as you described you find in Hodgkin's disease, can you make a diagnosis of Hodgkin's disease without finding the Reed-Sternberg cell?" I asked you that question, correct, sir?

A I assume you read it from the transcript, it's correct.

Q And if I read also correctly from the transcript, the answer to your question was: "The simplest answer to your

question is yes, but it's not that simple. You need expertise at that level to decide whether the nodal change is Hodgkin's disease or not." Is that correct, sir?

A And that is what I am saying, Counselor, that you express it in such a way with care, to not over-diagnose the situation, that I need additional proof, that I suspect, and this is consistent, I favor Hodgkin's disease, Counselor, but before I submit that patient to be treated with chemotherapy, I need something more. So the answer is yes. I am the one who is going to indicate that this patient seemingly got, yes, Hodgkin's disease; but let us verify it before -- before we do harm to this human being.

Q And you must verify it by finding the Reed-Sternberg cell?

A Or in a re-biopsy to satisfy ourself with more obvious pattern of growth of the arrangement of the cells.

Q All right. Then let me ask you that: if you re-biopsy and you find the pattern that helps satisfy you, but again you do not find the Reed-Sternberg cell, can you make the diagnosis of Hodgkin's disease?

A We will make the diagnosis, yes, by suspecting it, expressing it is consistent and compatible with Hodgkin's disease. If that satisfies those four people in the team, that because of the clinical setting, because of the age of the patient, because of the radiologic appearance, and

because of other factors that I may consider with the pathologists indicate that this patient got Hodgkin's disease, it is up to that team to decide at that point whether treatment will be initiated based on that consistent diagnosis, consistent with Hodgkin's disease.

At our institution, because we are a reference center, patients are coming with problems, we cannot make a mistake in decision like this, and we will wait for a re-biopsy of the tissue slides and biopsy material to find those cells, because if you have that material available to you, in 29.9 percent of those cases you did not see Reed-Sternberg cells initially, you will have it.

Q Taking everything that you have said into consideration, if you have done your re-biopsy and you have studied everything that you say you study, and all this other kind of thing, when it gets down to the tail end of it, Doctor, after all of that and you have still not found a Reed-Sternberg cell, will you make a diagnosis of Hodgkin's disease, if everything else adds up?

A The pathologists make a diagnosis of consistent favor, or suggestive of Hodgkin's disease, Counselor, and at that point is up to the team of the physicians, based on those components and evidence, medical facts, whether they begin to treat the patient because the patient has a very advanced disease, although the pathologists did not call it Hodgkin's

disease. Again, I am talking about where I practice, there we need a verification, and I do not recall a case when additional biopsy material or deeper cut tissue from the existing biopsy was given to me, or given to my colleagues, we did not find Reed-Sternberg cell. There is -- seemingly, there is no such thing in medicine, you will find it.

Q Is consistent with Hodgkin's disease and favoring Hodgkin's disease the same diagnosis as Hodgkin's disease?

A Not at the same level. When a pathologist make the diagnosis, suspect that disease, then the pathologist state that it is consistent with Hodgkin's disease, or compatible with Hodgkin's disease, that is very close to affirmative diagnosis, but it is not a final, definitive diagnosis.

Q And it leaves room for doubt, does it not?

A It leaves room for that, but above all it indicate to those who received the biopsy that additional proof should be rendered before we harm this patient with radiation or chemotherapy, because our concern is ultimately that one human being, the patient.

Q Dr. Hajdu, you do understand that in this particular case there are other pathologists that disagree with your diagnosis of Hodgkin's disease, are you not?

A Yes, Counselor, I know that some pathologists who were involved in the diagnostic exercise in the same area where Mr. Greenhill's problem developed, they did not diagnose

Hodgkin. Some felt it could be, and I understand ultimately, on re-review of their own material, it's a fact some of the pathologists you considered, asked to review the case for you, changed their diagnosis recently and agreed with Dr. Butler and agreed with me that they have something of a kind that they are suspecting and are accepting as Hodgkin's disease.

Q Doctor, have you reviewed the pathology reports that were submitted to you?

A I did, I assume, all the pathologists' reports from the medical records, yes.

Q As I understand it, you reviewed reports from the clinic up in Denver, did you not?

A I think that's where the patient was, and they came from there and I reviewed report of Dr. Holland, I reviewed the report of a Dr. Morgan, and I understand Dr. Holland and Dr. Morgan were consultant to your law firm.

Q And were actually consults to Dr. Teitelbaum, I believe, Doctor. As far as this goes, did you also review a report from Dr. Stolz that you testified about earlier?

A Yes, I saw that in the medical records.

Q Now, if I understand it correctly, as far as the diagnosis that was made, the diagnosis of Hodgkin's disease --

THE WITNESS: Can I move, Your Honor? I cannot see.

THE COURT: Yes.

(Mr. Gillam continuing:)

Q -- the diagnosis of Hodgkin's disease was made by who, Dr. Butler, correct?

A No, a local doctor, Dr. Koenig --

Q Okay.

A -- who was the second pathologist.

Q Well, then Dr. Butler eventually diagnosed Hodgkin's disease?

A Yes, Dr. Butler received the material from Dr. Koenig, if I am correct about the name.

Q So you have got Dr. Koenig and Dr. Butler diagnosing Hodgkin's disease, correct?

A I think that is the case.

Q And then Dr. Morgan also?

A Dr. Morgan, yes, he is the local pathologist who was retained by either you or a physician who was your consultant.

Q All right.

A Dr. Teitelbaum, yes.

Q And with the addition of Dr. Morgan, you have also yourself diagnosed Hodgkin's disease, is that correct?

A Yes, I did, definitely.

Q Now, were there other physicians, or you have told me there are others that diagnosed non-Hodgkin's, did you not?

A There was a pathologist before Dr. Koenig's second

opinion was sought, a Dr. --

Q Stolz?

A -- Stolz, right.

Q All right. But Dr. Stolz didn't diagnose Hodgkin's disease. He didn't find the Reed-Sternberg cells that you say are necessary to find, did he?

A Oh, I don't know why he did not diagnose it. I don't know Dr. Stolz' level of expertise, but he did not diagnose Hodgkin's, that's correct, yes.

Q From your review of the records, he was a pathologist, wasn't he?

A He signed a pathology report, and I have no reason to assume that he was not a pathologist.

Q Now there was also a Dr. Howland who diagnosed non-Hodgkin's disease, is that correct, initially?

A Yes, that's correct. And Dr. Howland was involved again on the review of Mr. Greenhill's material, as Dr. Morgan --

Q Correct.

A -- that somebody representing your law firm was consulted with them.

Q Well, just like you represent their law firm, correct, the same situation?

MR. ORTEGO: Object to the form of the question, Your Honor.

A No, I'm not --

THE COURT: Overruled.

A No, I am not representing the law firm. I am consultant to.

Q Okay, you are a consultant to the law firm?

A Yes.

Q Now, at the Denver Clinic where Dr. Howland worked, from your review of the reports, he also had two other pathologists, didn't he, look at the records?

A Yes.

Q And that was a Dr. Meyer?

A I think that's correct, Counselor, who saw the slides of material with Dr. Howland and/or Dr. Morgan.

Q And Dr. Meyer didn't find Hodgkin's disease, did he?

A Well, he did not diagnose, let's say that. He did not diagnose Hodgkin's disease, just like at initial phase Dr. Howland and Dr. Stolz did not diagnose it.

Q Well, in fact all of these doctors diagnosed non-Hodgkin's lymphoma, didn't they?

MR. ORTEGO: Objection to the form of the question, a mischaracterization.

A Well, I --

THE COURT: Overruled.

THE WITNESS: Should I answer?

THE COURT: Go ahead.

A As records show this pathologists, I assume they are pathologists, they did not diagnose Hodgkin's disease, and they made a mistake.

Q And non-Hodgkin's disease or non-Hodgkin's lymphoma is a form of cancer, isn't it?

A It is a form of cancer, yes, Counselor.

Q Just as Hodgkin's disease is?

A Correct.

Q Now also at the Denver Clinic, in addition to Dr. Howland and Dr. Meyer, you also noticed in the report from Dr. Howland there was a report from a Dr. Hanley, or a reference to a Dr. Hanley, correct?

A Correct, Counselor. Dr. Howland, Dr. Meyers, Dr. Hanley and Dr. Morgan, who were basically consulting with each other or belonged to the same group by showing this biopsy to each other.

Q Well, you understood that they were all pathologists from the report that you read, didn't you?

A That's how it reads, and they made a mistake.

Q All right, they made a mistake?

A As fact shows, yes, they made a mistake, and I am pleased to know that the patient was not treated on that diagnosis, because the patient would have been destroyed.

Q Dr. Hanley also diagnosed, by the way, non-Hodgkin's lymphoma, didn't he?

A All those doctors, Counselor, on their review on behalf of your firm, Howland, Meyers, Hanley, came to a conclusion that they cannot identify or cannot diagnose Hodgkin's disease. Only one person from that team diagnosed Hodgkin's disease is Dr. Morgan.

Q And the others diagnosed non-Hodgkin's, non-Hodgkin's lymphoma?

A Counselor, I have said and I say again, in due respect, yes, they concluded, and it was a mistake; and pathologists do make mistakes, and I hope that when we make those mistakes it does not harm a human being. By the way, there is another pathologist, Counselor, a Dr. Chu who is on review on record in the second phase of the review. See, these pathologists diagnosed whatever they diagnosed, at your request, and later on they re-reviewed for you, or for somebody, the same material, or related material. And Dr. Morgan, Dr. Howland, Dr. Meyers, Dr. Hanley, and plus one more doctor who was not listed before --

Q That's Chu?

A Dr. Chu, came to the conclusion, somewhere late this summer, on re-review that they are accepting the case and can be best classify the disease, what they did not diagnose correctly earlier, as Hodgkin's disease.

Q Have you reviewed that report as well, Doctor?

A Yes, I did.

Q And in that report, as well as the others, they still didn't find Reed-Sternberg cells, did they?

A If I am correct, that they had a problem with it even now, and honestly, I don't know what is the problem.

Q Well, that's Dr. Stolz, Dr. Hovland, Dr. Meyer, Dr. Hanley, Dr. Chu and a Dr. Ault, they all had the problem, correct?

A They all had problem, and I am, as I said, I am delighted to know that two local pathologists, Dr. Koenig and Dr. Morgan, in the same area where they practice, injected a doubt in the mind of people who are involved in the evaluation of Mr. Greenhill's disease, that there is a doubt about it at the local level of pathologists, who are general practitioners, not two more pathologists, and seek the help of such an authority like Dr. Butler in Houston at the MD Anderson Tumor Hospital.

Q Doctor, this all points to what I am saying, the problem in the diagnosis of Hodgkin's disease is that it is a difficult diagnosis to make, isn't it?

A It can --

Q It can be difficult, can it not?

A It can be extremely difficult from time to time, yes.

Q And you have got one, two, three, four, five, six, seven, eight, nine, ten pathologists that have looked at this particular case that we know of, is that correct?

A Well, as records show, I think all of this gentlemen saw biopsy material from Mr. Greenhill. I am at this point not at ease to speculate whether they saw the same biopsy material, what Dr. Butler saw, what Dr. Morgan saw, what Dr. Koenig saw and what I saw.

Q They certainly saw tissue from Mr. Greenhill, didn't they?

A I assume they did.

Q Okay.

A I have no way to verify whether they saw the correct slides or not. What I can testify to, Counselor, seeing Dr. Butler's report and the way he worded his report and the way my report is worded, that we are talking about the same disease; we are talking about a specific type of Hodgkin's disease, lymphocytes predominant, one of the four forms of Hodgkin's disease

Q And you agree, Doctor, that there has been disagreement in this case among a number of pathologists as to what the diagnosis is, is that true or not, sir?

A There was a disagreement at the local level by general practitioners in pathology, and that is not unusual. This is why people should go to seek second opinion, after a diagnosis was rendered in a general hospital.

Q The local pathologists that are treating these people that come in on a day-to-day basis, those are the people that

you are describing, aren't you?

A Well, I think these are the pathologists who are practicing on those local hospitals or clinics where they practice. They are the local pathologists, yes.

Q People who have the responsibility of treating these people who come in with Hodgkin's disease from whatever locality they are located in, and they have the responsibility of dealing with them from day to day and trying to treat them as best they can, don't they?

A I hope, Counselor, you are correct that indeed the doctors, the local doctors, are doing their utmost to assure the patients about the proper diagnosis and the proper treatment. But in this case, as it was shown from the very beginning, the first two pathologists, by Dr. Stolz and Dr. Koenig who were local pathologists and were involved in the diagnosis and care of this patient, that there was disagreement, I think they did the right thing to refer this case for second opinion. And this is a way of life today, and I encourage it and I am for it.

Q Doctor, no matter whether you have got non-Hodgkin's lymphoma or Hodgkin's disease, you have got a form of cancer, is that correct?

A The cancers you describe are known to us as cancers, although there are some schools and thought, even today, that school, the British School namely in Europe, that

characterize Hodgkin's disease as a granulomatous disease, and they don't call it "Hodgkin's lymphoma." They call it distinctly "Hodgkin's disease," to draw that line between the true lymphomas of the known-Hodgkin type and that disease we call historically "Hodgkin's disease." Because they feel that it is a different disease, and I agree with that.

Q As far as what we believe in this country, and as far as what you believe, you believe Hodgkin's disease is a form of cancer, do you not?

A Until further proof, I accept it as a form of distinctly unique entity, a form of cancer that we separate in behavior, in natural history, and the way the patients react to treatment, from all the other type of things we call "lymphomas."

Q Now, for Mr. Greenhill's case, Mr. Greenhill's Hodgkin's disease or non-Hodgkin's, or whatever it was, was a very aggressive disease, was it not?

A Well --

Q Or is it a very aggressive, progressing disease?

A As records show as of 1979, he had a very advanced disease that extended in his pelvis, in his pelvic area, to his back bone, to his pelvic bone, to his spine, or vertebrae, and to his ribs. So it was an advanced disease, yes, indeed.

Q Dr. Hajdu, let's talk a minute about this Hardell report. It is my understanding that you think the Hardell papers have no scientific value?

A Counselor, that is my personal opinion --

Q All right.

A -- and the opinion of all the others since Hardell published that paper who work in the field, that Dr. Hardell's study when he was talking about cause and effect link between certain things and Hodgkin's disease, cannot be and was not verified by anybody else in the world, and he himself, since the publication of that study, failed to come out with a new second series of conditions, or patients, with the same disease.

Q Dr. Hardell put a link between 2,4-D, the chemical 2,4-D, and Hodgkin's disease, non-Hodgkin's lymphoma and soft-tissue sarcoma, didn't he?

A He listed 2,4-D, he listed some chlorophenols, he listed some solvents and some other things what he tabulated, listed, as the patients been exposed to in the forested area, or wherever they belonged to in Sweden.

Q My question, Doctor --

A Yes, 2,4-D was one of the several things he mentioned.

Q And it was linked to non-Hodgkin's lymphoma, Hodgkin's lymphoma, and soft-tissue sarcoma, was it not?

A That's what he implied, as I alluded to earlier,

Counselor. He just went to far with his interpretation, I think.

Q So your opinion as to the work of his report goes to all three of those, does it not, that you don't think -- or are you telling us that 2,4-D does not cause Hodgkin's disease or does not have a link to Hodgkin's disease, non-Hodgkin's lymphoma or soft-tissue sarcoma? Does your opinion go to all three of those?

A Counselor, as of today, and many, many reports and many, many committees and commissions' works across the United States and the world, no one proved in a scientific, credible way that 2,4-D caused Hodgkin's disease or 2,4-D causes non-Hodgkin's lymphoma, or 2,4-D cause soft-tissue sarcoma.

Q Doctor --

A The proof is missing. A verified proof is missing.

Q Are you telling us that there is no credible publication that supports that, is that correct?

A Correct.

Q Well, do you consider the publications of the National Cancer Institute to be credible publications, or papers issued by the National Cancer Institute to be credible publications?

A It depends what was the study, who did the study, under what condition, and what the scientific community would on review attached to that report.

Q Well, there is peer review in the National Cancer Institute publications, is there not?

A Oh, there is review, yes.

Q Just the same type of peer review that you told us earlier that you have to have to make a report or a publication or an article something worth printing, isn't that correct?

A True. That's absolutely so, Counselor, but at the same time, as I am one of the reviewers of many papers, I do know that my colleagues and my associates do not review every paper that ultimately be published. There are such papers that somehow get to the review process and got in printed form. And there are many papers published in scientific journals that are not reviewed by anybody, although it is published in the journal under the supervision of the editor and chief, in the form of notes, letters and communications.

Q And you believe publications by the National Cancer Institute to be credible publications, do you not?

A Well, it, as I said, with the condition and understanding, what is the subject matter, how the work was carried out, who are the writers, what is the professional standing of the scientists involved in study, I certainly would pay attention to it, yes.

Q Well, you are aware that the Hoar report that you talked

to us about earlier was published by the National Cancer Institute, isn't it?

A It was published by the Journal of the American Medical Association, Counselor.

Q Okay.

A That is a different publication.

Q Well, is the Journal of the American Medical Association a credible publication?

A With the same footnote, yes, I think it is.

Q Well, you would have to --

A You must know -- you must know who are the people who are reporting, what do they talk about, how the study was carried out, and ultimately, once we read the report, we will say exactly what I feel about Dr. Hoar's elegant study, that it needs scientific verification by others. The proof of scientific work must be proven by others, because we cannot accept it because of the seriousness of the matter.

Q And didn't Dr. Hoar's report, Doctor, say that there is a six-fold increase between people that are exposed to 2,4-D and non-Hodgkin's lymphoma?

A In my recollection, Counselor, what Dr. Hoar included in her study, included the same three clusters of tumors of Dr. Hardell's study -- Hodgkin's disease, non-Hodgkin's lymphoma, and soft-tissue sarcoma. And as I indicated earlier when I was answering questions, that Dr. Hoar proved

it in her study that she could not find link between Hodgkin's disease and Dr. Hardell's claim from Sweden. And the same goes for soft-tissue sarcomas, Counselor.

Q And she does find a link between 2,4-D and non-Hodgkin's lymphoma, does she not?

A Counselor, Dr. Hoar's study area involved 2,4-D, involved other chemicals, chlorophenols, involved other type of fungicides, and by her own admission, she said and those who reviewed her papers said that 2,4-D was one of the several things what those people who were included in his study were associated with. There are many, many other things in her study referred to. But ultimately, Counselor, as I indicated to you what is troubling the pathologists in this country from the time the paper came out, that in Dr. Hoar's study a substantial number of non-Hodgkin's lymphomas are missing. She has almost the same number of non-Hodgkin lymphomas as Hodgkin's disease. And, Counselor, there is something wrong. Something is wrong with this design. Something is wrong with the whole first step in the study.

Q And I understand what you tell me and I understand what you said on direct examination and what you have just repeated, but it comes down to the fact that 2,4-D was one of the chemicals that Dr. Hoar in her report said is linked to non-Hodgkin's lymphoma. Now, is that statement correct or not?

A What is correct, Counselor, that 2,4-D was one of the several chemicals for those cluster of human beings Dr. Hoar was concerned about -- one of the many. And I am sure there are many others that nobody ever thought about, because a farmer can be exposed to many things.

Q That was linked directly, in her opinion in her report, to non-Hodgkin's lymphoma, correct?

MR. ORTEGO: Objection. Asked and answered, Your Honor.

MR. GILLAM: No, sir, it has not been answered.

THE COURT: Overruled.

A Counselor, her study concluded that she found link between her non-Hodgkin lymphoma cases and those chemicals that were included in her survey, some sort of link indeed, as you expressed so well, yes.

Q Including 2,4-D?

A 2,4-D was one of the several things, yes.

Q In fact, that was one of the most common, according to her report, is that correct?

A I don't recall that, but it was one of the chemicals. But in her study, I would not go as a pathologist beyond where I stated repeatedly.

Q I understand.

A That something is wrong with the design of that study. Patients with disease are missing from her study, and that

bothers me.

Q And that report of Dr. Hoar, or that one finding of Dr. Hoar's report is the same finding, virtually, that Dr. Hardell came up with in his report, is it not, as far as non-Hodgkin's lymphoma and their association to chemicals?

A More or less the same. See, we don't know precisely what Dr. Hardell's study group patients were exposed to. There is a vague description and reference to those, and whether those were exactly the same or very much the same we don't know. What I am saying, Counselor, is from the beginning of that report we are asking proof and verification of Dr. Hoar's study. Without that, I think we just have to wait and continue good work for the better of our patients.

Q Just like you want verification of Dr. Hardell's report, correct?

A Well, Dr. Hardell's report, as I indicated to you, was verified by many, many people in this country and across the universe, that Dr. Hardell made some mistake or several mistakes.

Q Now, Dr. Majdu, is it your opinion that -- or it is your opinion, isn't it, that non-Hodgkin's lymphoma and Hodgkin's disease are both caused by infectious agents of some sort or another?

A Counselor, the prevalent opinion today in medicine, and

that goes back to many years when it comes to Hodgkin's disease, and this is tabulated from textbooks to textbook, from papers to papers, to book chapters, that Hodgkin's disease, with all medical probability, is caused by an infectious agent or several infectious agents. And we went through that before, that the clustering, the way the patients are clustered with the disease, the way patients presented an immune profile, the way a patient with Hodgkin's disease follow the pattern of presentation of poliomyolitis, the way the patient with Hodgkin's disease are exposed to herpes and infectious mono in a much higher rate than patients without Hodgkin's disease has all indicate that, as I said, with all medical probability, that is an infectious agent induced disease.

And as of last week, the publication of the American Cancer Society, there are two elegant studies, one from Stanford sponsored by the U. S. Public Health Service, and the other one is from Italy, and they are talking about the markers, what they found in Hodgkin's cells and infectious diseases. Similar cells are immunoligically at the cellular level are marking the same way. Now, this is not new because in the Blood Journal, which is a major medical journal from West Germany, Anderson published two years ago -- three years ago a paper pointing out that there is a specific marker in Hodgkin's disease cells called "KI-1 antigen," and in patients

who had infectious mononucleosis, and a number of other viral infections, and that view was seconded just this year in a pathology publication in this country, which is the foremost journal for pathologists in human pathology, stating indeed that there is a marker between cells that are caused definitely and found in infectious, viral infectious conditions, and Hodgkin's disease.

Q Whatever the infection is, Doctor, it is something that comes from outside the body, is it not?

A In most cases when we get viral infection, Counselor, you are correct, it comes from another person or from our surroundings, yes.

Q And if chemicals can be related, and I understand that you say they are not, but if chemicals could be related to Hodgkin's disease or non-Hodgkin's lymphoma, again those would be something that would come from outside the body, would they not?

A Well, I don't know what are you implying, Counselor, in due respect --

Q Well, what I am implying is whatever source Hodgkin's disease comes from, or non-Hodgkin's lymphoma or Hodgkin's disease, as you talked about, it's something from outside the body, isn't it?

A Well, the agent, the viral agent or the infectious agents, must enter somehow, unless somebody got it from the

mother during pregnancy. You are right about it, it must come from somewhere, yes, usually from another person.

Q All right. Did I understand your opinion earlier today to be, and I think I wrote it down correctly, that in your opinion 2,4-D does not cause Hodgkin's disease? Is that your opinion?

A There is no medical evidence for that, Counselor, as we are discussing this matter today. There is no scientific publication in any credible journal or publication to claim that.

Q Is it your opinion, Doctor, that 2,4-D does not cause Hodgkin's disease?

A You are asking a question in the sense of negative. It is -- it is impossible to believe that on the fact and having that evidence what we have. It is possible, surely. Everything is possible. It is also possible that the drinking water or the air plays role in Hodgkin's disease.

Q Well, Doctor --

A But we have, with all medical probability, a direction of thinking, and this is not new, Counselor, in all the textbooks written from Europe and this country on Hodgkin's, are stating that, that Hodgkin's disease, with all medical probability, is caused by infectious agent or agents. And I think in two or three years we will have the absolute proof, almost certain.

Q Doctor, I understand what you are telling me. Do you recall me asking you virtually the same questions during your deposition?

A I -- I --

Q Do you recall me asking you: "Do you know of any literature that says the chemical 2,4-D does not cause Hodgkin's disease?" Do you recall that?

A I recall, and I answer "Why would anybody to do something like that or work on such an obscure project?"

Q Well, Doctor, let's read your response at that time to the question: "Do you know of any literature that says the chemical 2,4-D does not cause Hodgkin's disease?"

And, Doctor, read along with me. Was your answer at that time: "Well, in science in general, to make such a statement would be improper. Scientists cannot rule out any possibility, even if it is a very slim possibility."

And did you further continue and say: "I don't recall anything on that subject, because I think that type of work should not be accomplished, because the possibility should be kept open unless we have absolute proof of something. We must keep our mind open for discussion."

Is that what you said at that time, Doctor?

A Counselor, I just said basically the same, that it is possible -- everything and anything possible; but I am telling you that, as I said then, why would anybody anywhere

to invest time and energy in such a project? We have hundreds of other things around us, chemicals one could take, as I said. We could talk about why the air? Prove that why the air is not causing whatever disease.

Q And to make a statement that 2,4-D does not cause Hodgkin's disease in science would be improper, because there is always that possibility which needs to be explored until that is ruled out, is that correct, sir?

A It is possible, but it is not probable. We talk about the other way, Counselor -- what are the probabilities that such things may cause what? And let us and scientists be concerned about that, not the negative one. Because negative says numberless things may occur to anybody. And again, as a reviewer of scientific papers, of negative claims would come for me, I would be very critical about it and ask the writers to concern about the positive one, what is causing it?

Q And there have been studies on that, as well. Studies to try to show or at least have investigated the link between Hodgkin's disease -- whether you agree with them or not -- Hodgkin's disease and exposure to wood, Hodgkin's disease and exposure to chemicals, Hodgkin's disease and exposure to infectious agents, such as you have talked about. There have been studies in that area, have they not?

A We have plenty of that, and so far in all those studies,

and almost endless number of publications and studies, the conclusion is coming home clear as we get older and older in a few years, Hodgkin's disease is caused by infectious agents.

MR. GILLAM: That's all.

MR. ORTEGO: No redirect, Your Honor.

THE COURT: May this witness be excused?

THE WITNESS: Thank you, Your Honor.

MR. ORTEGO: Yes.

THE COURT: You may be excused. Do you have any witness you can complete by noon?

MR. ORTEGO: Judge, what I think I could do, I have some deposition testimony that I can read now.

THE COURT: Be fine.

MR. ORTEGO: Just one second, Your Honor, and I will get organized.

THE COURT: Let's do this -- I have a matter that has been brought to my attention. We are going to take a recess until 1:30. It is still not time to talk about this case with each other or anyone else, and I expect you back in the jury box at 1:15 and we will continue on at that time. We stand in recess until 1:15.

(Recess at 11:45 a.m., until 1:15 p.m.; open court, jury and all parties present)

THE COURT: Please be seated. Call your next

witness, please.

MR. ORTEGO: Your Honor, we would like to read some deposition lines of Dr. Butler at this point. This is the deposition and answers of James J. Butler, M.D., taken before Laurie V. Carlisle, a certified shorthand reporter and notary public in and for Harris County in the State of Texas, in the offices of M. D. Anderson Hospital, 1190 Holcomb, Houston, Texas, beginning at 2:45 p.m., on the 4th day of August, 1987.

JAMES J. BUTLER, M.D. BY DEPOSITION

"Q Dr. Butler, did there come a time when you were called upon to make a diagnosis of James Edward Greenhill?

"A Yes.

"Q And when was that?

"A That was in June of 1979.

"Q And in what way were you brought into the diagnostic procedure?

"A I got a letter from the pathologist in question with the material that a pathologist needs for the diagnosis.

"Q And who was the pathologist who contacted you?

"A Dr. Koenig.

"Q What did you then do when you received the letter from Dr. Koenig?

"A I looked at the material, had additional sections prepared and after a long study made the diagnosis and wrote him.

"Q In terms of the material you looked at, could you please describe in detail what material you looked at?

"A I received the slides that had been prepared from the lymph node biopsy and paraffin block in which the tissue was imbedded and from which the slides were cut.

"Q What did you do with the slides?

"A I looked at them under the microscope.

"Q Did you stain them or do anything to them other than examine them microscopically?

"A Well, I had the blocks. I had additional sections cut and stained with the routine stain, which is a hemotoxin and eosin. The diagnosis made can be a difficult one, and you need frequently to get only sections to look for the cell that's necessary for the diagnosis of Hodgkin's disease.

"Q And what is the specific cell necessary for the diagnosis of Hodgkin's disease?

"A It's called the "Reed-Sternberg cell."

"Q Did you find these Reed-Sternberg cells in the tissue?

"A Eventually, I did. Very rare.

"Q And did you make a diagnosis of the materials that you saw?

"A Yes, Hodgkin's disease, lymphocytic predominance type.

"Q What is lymphocytic predominant type of Hodgkin's disease?

"A That's the type of Hodgkin's disease in which, as the

name implies, there are many lymphocytes. There are also many histocytes. There is a particular type of variant of the Reed-Sternberg cell called the "L&H cell," and it's very difficult to find Reed-Sternberg cells.

"Q Did you find the variance both in the slides that were sent to you as well as the slides that you had sectioned?

"A I found them more easily in the slides that I sectioned. That's the reason that I generally ask that blocks be sent because we have technicians who are particularly good at cutting the lymph nodes, sections of the lymph nodes.

"Q When you made the diagnosis, did you fill out any reports as to the diagnosis or put into writing in some form?

"A Yes. I made a report and sent Dr. Koenig a letter.

"Q Do you have a copy of the report that you made at that time?

"A Yes, I do.

"Could we please have this marked as Defendant's Exhibit No. 1?

"Q Doctor, can you tell us what the document we have marked as Defendant's Exhibit 1 is?

"A That's my report to Dr. Koenig of the diagnosis on Mr. Greenhill.

"Q And above the place where it says "James Butler, M.D., there is initials. Are those your initials?

"A Yes.

"Q And what was the date when this report was prepared?

"A The 24th of August, 1979.

"Q And does this report accurately reflect your diagnosis after review of the slides of Mr. James Greenhill?

"A Yes, it does.

"Q I note in that report that you mention what you just said, that you found, you easily found, L&H variance of Reed-Sternberg cells. When you say you easily found, could you explain that, please?

"A I found it with ease. I found it without looking. I found it on, I don't know how to say it, except that it's not difficult to find.

"Q In addition, you did find some more typical Reed-Sternberg cells?

"A I found a rare one. It was very difficult in a number of sections.

"Q Were there any other bases upon which you reached the conclusion that James Greenhill had Hodgkin's disease?

"A No. The diagnosis of Hodgkin's is established histologically.

"Q When you say established histologically, could you please explain what you mean by that?

"A The cells present and the pattern are those typical of Hodgkin's disease. A certain pattern, certain cellular make-up that's characteristic of Hodgkin's disease when one

identifies Reed-Sternberg.

"Q Dr. Butler, is this the typical way in which pathologists, skilled in analysis of Hodgkin's disease, come to their conclusions, diagnostic conclusions?

"A Yes, right. There is really no other way to make the diagnosis. There certainly was no other way in 1979.

"Let's mark this as Exhibit 2, please.

"Q Dr. Butler, could you please take a look at what we have marked as Defendant's Exhibit 2? What is that?

"A That is the letter that I wrote to Dr. Koenig in August of 1979 giving the diagnosis on Mr. Greenhill.

"Q By the way, Doctor, when you make your diagnosis are reports of this kind typically made in your activity as a pathologist at the University Texas Medical Branch?

"A Yes.

"Q And are reports of this type regularly maintained in the course of your activities at the University of Texas Medical Branch?

"A It's not really the medical branch. It's the Cancer Center. Medical Branch is in Galveston. Yes, I do.

"Q For both of these questions we are talking about the University of Texas Cancer Center. In your letter to Dr. Koenig you mention that you agree with his diagnosis of Hodgkin's disease, is that correct?

"A Yes.

"Q Dr. Butler, is it fair to say that most cases of Hodgkin's disease are considered idiopathic?

"A Yes.

"Q Could you please explain what idiopathic means?

"A That we don't know the cause of it.

"Q Dr. Butler, is it also fair to say that many investigators in the area have the posture that Hodgkin's disease can be caused by viruses?

"A Along with most of the other cancers, that has been postulated, yes.

"Q Dr. Butler, what is the sex distribution of Hodgkin's disease, if you are familiar with it?

"A It's more common in males. It depends on the age group. Overall, though, it's more common in males.

"Q And in terms of the age group, is it fair to say there is a bimodal curve in terms of Hodgkin's disease in the United States population?

"A United States, yes.

"Q And is one of those two peaks in the bimodal curve in the population between 15 and 35 years of age?

"A Yes.

"Q Was there any particular reason, Dr. Butler, that other than his acquaintanceship with you, why Dr. Koenig sent the materials to you, Dr. James Butler?

"A Not that I know of, except that I am at M. D. Anderson,

and of course M. D. Anderson is a cancer hospital known in the area.

"Q Have you yourself done work on Hodgkin's disease?

"A Yes.

"Q In fact, are you not the Butler of Lukes and Butler?

"A Yes. Right.

"Q And what is Lukes and Butler?

"A That's the classification of Hodgkin's. It's the classification from which the "rye" classification, which was a modification of that classification, was made in the mid-1960s.

"Q Without being immodest, and I know it's difficult for you to answer that, you are among the better known researchers on Hodgkin's disease in this country, are you not?

A Well, as a result of doing that, I think people know my name associated with the classification.

"Q And about how many times are you called upon in a year to make a diagnosis of Hodgkin's disease?

"A Oh, I would say at least a hundred times.

"Q And this in your standard activity at the M. D. Anderson Cancer Center?

"A It is.

"Q Doctor, could you very briefly outline your educational background?

"A I went to the University of -- well, my pre-medical

education was mainly at the University of Tennessee in Knoxville. Then I attended the University of Michigan Medical School, and I interned at Cincinnati General Hospital.

"Q You received your medical degree in '52, is it?

"A 1952. I interned at Cincinnati General Hosptial 1952-53, then I spent three years at the University of Iowa Hospital in pathology as a resident in pathology, one year at the University of Cincinnati in the Department of Pathology, then three years at the Armed Forces Institute of Pathology in the Hematopathology Branch.

"Q Are you certified in pathology?

"A In Anatomic Pathology, yes, in 1958.

"Q And you are certified by what group, sir?

"A By the American Board of Pathology.

"Q And that's part of the American Board of Specialties of the American Medical Asssociation, is it not?

"A It is.

"Q How did you become certified?

"A By taking the examination.

"Q Have you published any materials in respect to Hodgkin's disease?

"A Yes, I have. In addition to the article with Dr. Lukes, I published several articles on Hodgkin's disease.

"Q How long have you been at M. D. Anderson?

"A Twenty-five years.

"Q Doctor, I notice that you brought with you another document. What is that?

"A That's my Curriculum Vitae.

"Could we please mark this as Exhibit 5?

"Q Now, Doctor, what we had marked as Exhibit 5, could you describe what it is?

"A Well, it's a description of my education, training and work I have done while in medicine, and the organizations I belong to.

"Q And what caused you to prepare this document?

"A The University requires you to have a curriculum vitae, and there are certain times when you have to have one to give to people. So it's easiest just to prepare it ahead of time.

"Q And is it fair and accurate representation of your training and activities?

"A It is.

"Q When was this one prepared, do you know?

"A Well, it was updated last week."

MR. ORTEGO: That concludes the questions by our office. The following questions were by Mr. Baldwin.

MR. GILLAM: Your Honor, before we continue this, we have been provided by Counsel a list of lines he wishes to introduce from our cross-examination. If I am correct here,

they intend to offer parts of four pages of our cross-examination. Our cross-examination totals twenty-four pages, and under Rule 32 of the Federal Rules of Civil Procedure, we would like to offer our entire cross-examination at this time.

THE COURT: Under the Rule of Completeness?

MR. GILLAM: Pardon me?

THE COURT: Under the Rule of Completeness?

MR. GILLAM: Yes, sir.

THE COURT: All right.

MR. ORTEGO: Judge, I have no problem. I will read the lines I wish to designate and they can read whatever lines they want after. I don't have any problem with that.

THE COURT: Go ahead and do it that way.

MR. ORTEGO: Okay.

CROSS EXAMINATION OF JAMES J. BUTLER, M.D., BY DEPOSITION

(Read by Mr. Ortego and Mr. Brown:)

"Q And isn't it true it's a diagnosis that reasonable pathologists might disagree on?

"A I think pathologists will disagree on many diagnoses. I think the combination that we've talked about is diagnostic, and I don't think anyone would disagree with this combination.

"Q My question is, don't you agree with me, sir, that there is a diagnosis that reasonable pathologists might disagree about?

"A Are you talking about this individual case?

"Q Yes.

"A I don't think so.

"Q As a matter of fact, you don't propose to tell us or the jury anything about the cause of Hodgkin's disease here?

"An objection.

"Q As you sit here, do you?

"A I don't think anyone knows the cause of Hodgkin's disease.

"Q One other thing, Doctor, would you look at your C.V. and tell me the numbers of papers that relate to Hodgkin's disease that you've written?

"A Seven, eight, nine, sixteen, twenty-two, twenty-three, twenty-five, twenty-seven, twenty-nine, thirty-two, thirty-nine, forty-eight, forty-nine, fifty, sixty, seventy, seventy-five, seventy-eight, seventy-nine, eighty-one, eighty-nine, and then there are others in books. They are the primary articles, and there are some in books, some things like that.

"Thank you."

MR. ORTEGO: At this time, Your Honor, I would like to offer into evidence Defendant's Trial Exhibits 12 a, 12 b and 12 c, which are the exhibits which we referred to during the reading of the deposition lines. It's the report from Dr. Butler regarding the diagnosis of Hodgkin's disease; it's his letter to Dr. Koenig advising Dr. Koenig of the

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Hodgkin's disease diagnosis, and his Curriculum Vitae is "c."

THE COURT: Any objection? They will be admitted. Are those attached to the deposition?

MR. ORTEGO: They were, Your Honor.

THE COURT: All right, they will be admitted. Do you wish to enter at this point --

MR. GILLAM: Yes, Your Honor.

THE COURT: -- your portion of the deposition?

MR. GILLAM: Yes, sir.

THE COURT: All right.

MR. GILLAM: For benefit of the Jury, this is the entire cross-examination of Dr. Butler conducted by Mr. Baldwin right after the questions by those lawyers.

CROSS EXAMINATION OF JAMES J. BUTLER, M.D., BY DEPOSITION

(Read by Mr. Gillam and Mr. Baldwin, Jr.)

MR. GILLAM: Beginning on Page 23:

"Q Doctor, I have a few questions for you. First I want to ask you general questions about Hodgkin's disease. Do you agree that Hodgkin's disease is a form of lymphoma?

"A Yes.

"Q Really, there's no difference between it and other lymphomas except the histologic appearances?

"A That's a very broad statement. Hodgkin's has some characteristics aside from the histological findings. If you mean by that that they are both malignancies of the

lymphoreticular system, they are similar. But Hodgkin's disease has certain characteristics that you don't find in the other types of lymphoma.

"Q You mean by histologic characteristics?

"A No, no, characteristics of the patients' in general, certain immunologic differences.

"Q Like what?

"A That they generally have a defect in long-term reactions, in reactions involving key lymphocytes, that is the lesions, such as a reaction to tuberculosis and other antigens, and chronic antigens such as that.

"Q Do you agree that Hodgkin's disease is a form of cancer?

"A Yes.

"Q Do you agree it's a form of cancer that involves the lymph system?

"A Yes.

"Q Do you agree that it is a form of cancer that's of the soft tissue?

"A Well, I think soft tissue to a physician, to most physicians, would indicate the tissues outside the lymph nodes and other perimeter organs, so that it may involve soft tissue at times, I think the characteristics, it's best stated as involving the lymphoid system.

"Q Well, it does involve other organs at times, does it not?

"A Yeah.

"Q Like the spleen and the liver?

"A The spleen and the liver is both part of what in the old days was called the reticuloendothelial system.

"Q Well, is the spleen a soft tissue?

"A Well, if you mean it's not hard, it's soft in that sense. But in medicine we don't speak of the spleen as being soft tissue. Soft tissue are the tissues from which sarcomas arise, muscle, fibrosis tissue, nerve tissue, like that.

"Q The spleen is not bone?

"A In that sense, it's soft tissue.

"Q Sir?

"A In that sense, you know, in the gross sense, it's not hard.

"Q That's what I am talking about.

"A Yes. Well, of course the bone marrow is part of the lymphoreticular system, so that's an area that you normally find Hodgkin's, you may find Hodgkin's.

"Q When you find it there, it's advanced, isn't it?

"A Yes.

"Q Would you agree that lymphoma is a cancer of the lymph system?

"A Yes, I would.

"Q Would you agree that the cause of lymphoma is the

interaction of some environmental factor to material cells of the patient?

"A What was that again -- interreaction of --

"Q Some environmental factors to the tissue, or cells, of the patient?

"A I don't think we know that.

"Q You can't say that it is or isn't, can you?

"A That's right, it's uncertain.

"Q And the same would be true of Hodgkin's disease, isn't it?

"A That's true.

"Q Don't know whether or not it's the interaction between environment and the cells or the tissue of the patient, do you?

"A I'd agree, we don't know.

"Q As a matter of fact, you don't know anymore about the cause of Hodgkin's disease than you do the cause of other cancers, do you?

"A That's right.

"Q Now isn't it true, then, that, I believe you said this, but I'll ask you again because I'm not sure I asked you specifically, isn't it true that Hodgkin's disease is a form of lymphoma?

"A Hodgkin's disease is a form of lymphoma, yes.

"Q Which we characterize as cancer of the lymph system?

"A Yes.

"Q And do you agree that the typical way of diagnosing, differentiating Hodgkin's disease from other types of lymphoma, is the characteristic Reed-Sternberg cell?

"A You have to have the Reed-Sternberg cell in the proper background of one of the types of Hodgkin's disease. So it's a combination of the cell being in the right background.

"Q And that's this type we are talking about now?

"A This is one of the types of backgrounds that you need, yes.

"Q This is one of the types that you have to have, the Reed-Sternberg, to make the diagnosis?

"A Any type of Hodgkin's, you have to have the Reed-Sternberg in the right background.

"Q I thought that's what I asked you, but maybe you misunderstood me, so let me ask you --

"A No, my understanding of your question was the finding of Reed-Sternberg would establish the diagnosis, and I don't think the Reed-Sternberg alone would establish the diagnosis.

"Q But you can't make the diagnosis without the Reed-Sternberg cell?

"A I'd agree with you, yes.

"Q So you must have the Reed-Sternberg cell in order to make a diagnosis of Hodgkin's disease?

"A That is correct.

"Q Excuse me. If my questions are awkward, I'm not a doctor. And the typical Reed-Sternberg characteristic cell is not hard to identify, is it?

"A I would say that there are different criteria for Reed-Sternberg cells.

"Q I am talking about typical?

"A Typical is not hard, that's right I would agree.

"Q First, second year medical students can do that, can't they?

"A No, I don't think so. I say that because I am involved in teaching. We have fellows in training, pathologists in training, and some of them seem to have some difficulty in recognizing what I think Reed-Sternberg cell is.

"Q I am talking about the typical Reed-Sternberg cell?

"A Yes.

"Q When you teach histology in medical school?

"A Histology in medical school is normal histology. It's only in pathology, and in some medical students speaking, it's difficult enough for pathology, people in pathology to learn to recognize the Reed-Sternberg. I think that the medical students in general if shown a cell and said "this is a Reed-Sternberg," would agree with you. But to have them recognize it, I think it would be very difficult.

"Q What is a Reed-Sternberg?

"A Well, that's a good question, too. There is no

agreement as to what type cell a Reed-Sternberg cell is.

"Q So there is no agreement?

"A You know what it looks like, but the cell of origin isn't known.

"Q So if I understand what you are saying, there is no criteria by which you as a pathologist can identify a Reed-Sternberg cell?

"A No. No, no. The question as I understood it is do we know what the Reed-Sternberg cell is? And that implies to me that we know what type of cell. Is it a lymphocyte, is it a histiocyte, what type of cell is it? We don't know that, but the appearance of the Reed-Sternberg cell we know. So there are two different questions there.

"Q Is that typical?

"A It's typical.

"Q Is it easy to see what the criteria is as far as identifying a Reed-Sternberg from appearance?

"A Right. Yes, the criteria are well-defined.

"Q And what is that?

"A It's a cell that has one or more that has two or more nuclei segments, each of which contains a nucleus, a large nucleolus, which is generally said to be at least a quarter of the size of the nuclear segment in which it is located.

"Q Are Reed-Sternberg cells sometimes referred to as "giant cells"?

"A They are giant cells, yes.

"Q They are very large, aren't they?

"A Yes.

"Q Can you have a Reed-Sternberg cell with only one nucleus?

"A No. Well, we are talking about -- when you talk about a Reed-Sternberg cell to establish a diagnosis, you are talking about the diagnostic Reed-Sternberg cell. There are variants of the Reed-Sternberg cells that have certain meanings. The cell that has the single nucleus, mononuclear cell.

"Q That's one, right?

"A Is one -- is one in which put in the proper background alerts you that this is probably Hodgkin's disease and that you should look longer. Some people call them "look-longer cells." You look longer to find a diagnostic Reed-Sternberg cell.

"Q Well, do you agree that mononuclear forms of Reed-Sternberg cells are found in the typical lesions of Hodgkin's disease?

"A Yes, but they are found in viral diseases, also, so they cannot be used for diagnosis.

"Q So when you said that you had to have two nuclei, you didn't mean that?

"A Yeah, they have to have -- well, I said they have two or

more nuclear segments. They may or may not be joined.

"Q Mononuclear implies one, doesn't it?

"A Right. But I have had -- there are people that say if you section a paraffin, which is the block you put the tissue in, that cells that look like they have separate nuclei will prove to be only one. When you talk about a mononuclear cell you are talking about a nucleus that's round, has a nucleus in it, is not lobated. You have to have nuclear segments for a Reed-Sternberg cell.

"Q But it's generally regarded as one nucleus, mononuclear cell?

"A Mono is. Yes, mono means one. Not all Reed-Sternberg, or at least from the sections you look at, contain only one nucleus.

"Q But they can contain one nucleus?

"A They can contain one lobulated nucleus, right.

"Q So you weren't entirely correct a minute ago when you said they contained two nucleus or more always?

"A Two or more nuclear segments. By common understanding, mononuclear cell refers to, as I say, a round nucleus that contains a single nucleus. When you have a cell that has only one nucleus but is lobated, then pathologists don't refer to that as a mononuclear cell.

"Q And what else is characteristic of the Reed-Sternberg cell?

"A The cytoplasm is. It's generally said to be amphophilic, that's sort of a bluish pink, but it depends so much on the staining characteristics of the case, which goes back to the fixation, etcetera, so that I don't think you can depend on that part of it.

"Q You can't depend on what?

"A The appearance of the cytoplasm.

"Q Would you draw me a gross drawing on this? Let's mark Plaintiff's 1, just a gross drawing of a typical Reed-Sternberg cell, and would you draw another cell out beside it so we can contrast the size, since you said it was a large cell or a giant cell, I believe?

"A That would be a lymphocyte.

"Let's mark on there P-1.

"Q Now what is it? You have written on Plaintiff's Exhibit 1 "R.S. Cell," have you not?

"A Reed-Sternberg, yes.

"Q And "lymphocyte" here?

"A Lymphocyte, yes.

"Q That's typical lymphocyte?

"A Yes.

"Q Where is the nucleus of the lymphocyte cell?

"A Here.

"Q A rather large nucleus?

"A Well, it's not too large, but it's very little

cytonlasm.

"Q Is the cytoplasm the area outside the nucleus?

"A Yes.

"Q And here you have shown two nuclei?

"A No, no nuclei. There are nuclei and the nucleus. Actually that's wrong.

"Q So you have a typical shaped nucleus?

"A Right.

"Q And this type is "U" shaped. Are they always "U" shaped?

"A No.

"Q They may be any type shape?

"A You can have these not joined here.

"Q In that event you'd call it two nucleus, wouldn't you?

"A Two nuclei. You can have multiple. They just have to have the large nucleus.

"Q What is difficult about that for a pathologist to distinguish?

"A It's not difficult if he sees one that looks like that.

"Q That is the one?

"A It's making certain you have one that looks like that.

"Q Do you remember or did you have one like that in this?

"A I don't remember it was exactly like that.

"Q Well --

"A It was close to that. It was a diagnostic cell.

"Q It was not a true Reed-Sternberg cell, was it?

"A Yes, it was. You can't make the diagnosis without it.

"Q I thought you said in your report it was a variant?

"A No, no, a rare diagnostic cell.

"Q Said you easily found L&H variants of the Reed-Sternberg cells?

"A Right.

"Q So you wouldn't characterize those as true, typical Reed-Sternberg?

"A No, they are variants.

"Q Can you read this report, quote: 'The proliferation of lymphocytes and histiocytes with easily found L&H variants of Reed-Sternberg cells'?

"A Right.

"Q And that's not a typical Reed-Sternberg cell then, is it?

"A That's right.

"Q And you cannot on that alone -- on that alone, Doctor, you can't make the diagnosis, can you?

"A No.

"Q The only way you can make the diagnosis is that you found a rare Reed-Sternberg cell?

"A Right.

"Q Is that what you said?

"A That is correct.

"Q Now when you say rare, how many did you find?

"A I cannot tell you. Less than two or less because --

"Q You found two or less?

"A Yes. I don't remember whether it was one or two the first slide.

"Q What you referred to as Reed-Sternberg cells?

"A Yes, diagnostic Reed-Sternberg cells.

"Q And were they in the slides that had already been sent to you or were they in the sections you had cut?

"A The sections that I cut. I think the outside pathologists had a problem, and that's the reason he sent them. He couldn't find them in his slides.

"Q At the very best, this is a sophisticated diagnosis, isn't it, Doctor?

"A Yes.

"Q It's a difficult diagnosis to make, isn't it?

"A Yes.

"Q And isn't it true that it's a diagnosis that reasonable pathologists might disagree on?

"A I think pathologists will disagree on many diagnoses. I think the combination that we talked about is diagnostic, and I don't think anyone would disagree with this combination.

"Q My question is don't you agree with me, sir, that this is a diagnosis that reasonable pathologists might disagree about?

"A Are you talking about this individual case?

"Q Yes.

"A I don't think so.

"Q Well, they did, didn't they?

"A They did not have the slides that I have.

"Q Well, I am talking about making a diagnosis of this case and whatever means at hand. They had the same tissue you had, didn't they? Did they have the same or different tissue than you had?

"A They had the same tissue. They did not have the same slides.

"Q Because you cut your own tissue?

"A Yes.

"Q So at least the pathologists that sent this to you was a Dr. Koenig, a pathologist?

"A Yes.

"Q He wasn't sure what the diagnosis was, was he?

"A Apparently not. Otherwise he wouldn't have sent it.

"Q And as a matter of fact, he had a pathologist look at it himself, didn't he, another pathologist?

"A I think he had all the members of his group look at them.

"Q And their diagnosis was lymph node, left side of the neck, malignant lymphoma, lymphocytic type, diffuse?

"A No, that was not their diagnosis. That's not the letter. That is from the other pathologist. That's not from Dr.

Koenig, if you will notice the signature on that.

"Q I understand that. My question was that it came from the pathologists that he had up there with his group, didn't it?

"A No.

"Q Where did this come from?

"A I don't know if they say. St. Mary's Hospital.

"Q In Arkansas?"

MR. GILLAM: Continue on Page 43.

"Q You see this report from Gerald Stolz?

"A Yes.

"Q Is he a pathologist?

"A He says he is. I don't know him personally.

"Q That was sent to you, wasn't it?

"A Dr. Koenig sent it to me.

"Q It came out of your file, didn't it?

"A Yes.

"Q This is Defendant's Exhibit 4. What is he saying in diagnosis?

"A He says: 'Lymph node left side of the neck, malignant lymphoma, lymphocyte type diffuse.'

"Q Does it say anything about Hodgkin's disease?

"A He just says he can't identify cells that have characteristics of Reed-Sternberg cells, so he didn't see any.

"Q As a matter of fact, he said 'no cells are identified which have definitive characteristics for Reed-Sternberg cells,' didn't he?

"A Right.

"Q And that's what you listed as a minimum criteria for diagnosing Hodgkin's disease, didn't you?

"A Correct.

"Q So that pathologist did not diagnose Hodgkin's disease, did he?

"A No, he didn't.

"Q And Dr. Koenig wasn't sure, was he?

"A Correct.

"Q So now we've got Dr. Koenig as a pathologist --

"A Yes.

"Q -- we've got three pathologists looking at the tissue and three different opinions, don't we?

"A They did not see the sections that I cut.

"Q We've got three doctors looking at the tissue from this man?

"A Yes.

"Q And three different opinions?

"A They weren't looking at the same material, so I don't think they are comparable.

"Q I will reask my question. Was their opinions the same or different than yours?

"A They are different, certainly.

"Q All right. Have you ever heard of a Dr. Kevin Hanley in Denver?

"A No, I haven't.

"Q Or Dr. Meyer in Denver?

"A No, I haven't.

"Q Or Dr. Howland in Denver?

"A No, I haven't.

"Q And if they wrote a report that said it was not Hodgkin's disease, that would still be different, wouldn't it?

"A It would, certainly.

"Q Do you agree, Doctor, that the special literature states that Hodgkin's disease is an environmental disease?

"A I don't know that the literature says that.

"Q You don't know whether it is or isn't?

"A Right. Correct.

"Q As a matter of fact, you don't propose to tell us or the Jury anything about the cause of Hodgkin's disease here, as you sit here, do you?

"A I don't think anyone knows the cause of Hodgkin's disease.

"Q But you do know that Hodgkin's disease is a form of cancer of the lymph nodes?

"A Yes.

"Q And that lymphoma is a form of cancer of the lymph nodes? Is that right?

"A That's correct."

MR. GILLAM: And I believe the rest of the deposition was offered by --

MR. ORTEGO: Will you finish the last two questions? There are two questions left, and you were going to read all the cross.

MR. GILLAM: Those two you already read?

MR. ORTEGO: Yes.

MR. GILLAM: Okay.

MR. BALDWIN, SR.: Your Honor, I object to it if it has already been read.

THE COURT: Go ahead. Read it.

MR. GILLAM: I am going to read it again, sure.

"Q One other thing, Doctor, would you look at your C.V. and tell me the numbers of the papers that relate to Hodgkin's disease that you have written?

"A Seven, eight, nine, sixteen, twenty-two, twenty-three, twenty-five, twenty-seven, twenty-nine, thirty-two, thirty-nine, forty-eight, forty-nine, fifty, sixty, seventy, seventy-five, seventy-eight, seventy-nine, eighty-one and eighty-nine. And then there are others in books. They are the primary articles, and there are some in books and things like that."

MR. GILLAM: Your Honor, that completes the reading

of the entire deposition.

THE COURT: Call your next witness.

MR. ORTEGO: Your Honor, the Defendant calls Andrew J. Watson.

(The Witness is sworn.)

MR. ORTEGO: May I, Your Honor?

THE COURT: Yes, you may proceed.

ANDREW J. WATSON

having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. ORTEGO:

Q Sir, can you please state your full name for the record?

A My name is Andrew J. Watson.

Q And how old are you, sir?

A Sixty-six.

Q And when were you born and where were you born?

A I was born in Davisburg, Michigan, a small town in southern Michigan, August 1, 1921.

Q And what is your educational background, sir?

A I grew up on a small farm in southern Michigan. Following high school I went to Michigan State University and received a Bachelor of Science Degree in Agriculture. Following that I went into the Army, U.S. Army, during World War II for about three and a half years. Went back to graduate school at Michigan State University for three

years and obtained my Ph.D.

Q And what did you receive you Ph.D. in?

A The Ph.D. was in the School of Agriculture in the field of Soil Science.

Q After you received your Ph.D., I guess you are Dr. Watson -- Dr. Watson, what did you do?

A I immediately joined the Dow Chemical Company.

Q And what year was that?

A In June of 1949.

Q What is your current status?

A My current status, I am retired.

Q And when did you retire from the Dow Chemical Company?

A I retired in January of '86.

Q And how many years were you with the company?

A Thirty-six and a half years.

Q What do you do now for a living?

A I am retired, and enjoy every minute of it.

Q Okay. What do you do with your time in retirement besides --

A Mostly volunteer work. I am very active in the local Lions Club, and do, have done, a small amount of consulting for Dow.

Q What type of consulting have you done for Dow since your retirement?

A My consulting efforts have been in the area as a

technical adviser for agricultural chemicals relating to claims in litigation.

Q When you started with Dow in 1949 what did you do with Dow?

A I was a field researcher with weed killers, with herbicides.

Q And did that include 2,4-D?

A Yes. In fact, the very first chemical I ever worked with was 2,4-D with Dow.

Q What kind of field research would you do?

A Well, of course field research with herbicides, especially new products, involves applying these chemicals through usually spray machines to the weeds and crops on which you are studying.

Q And what would you do with the data?

A The data accummulates, our reports would be prepared at the end of the project, and they would be reported into the company and they in turn would be used for -- normally, they would be used for application for registration to the Environmental Protection Agency.

Q And the type of things you were testing, what were you testing about these weed killers?

A Well naturally as you are developing new products you had to test for efficacy and safety of them on the crops and the effect on the weeds, the effect on the plants.

Q How long were you in field research?

A I was in field research until 1966.

Q And that time between 1949 and 1966 were you working in the field testing the efficacy of these herbicides?

A Yes. And much of the time with 2,4-D.

Q Would that be about approximately seventeen years?

A Yes.

Q Have you personally actually used them and applied them?

A Yes, I have, but most frequently during that period especially I was working with 2,4-D products.

Q Did you mix them?

A Yes.

Q Why don't we talk about what is a herbicide or a weed killer?

A Herbicides are, technically, are any chemical that will control weeds or will kill plants is the term for herbicide.

Q How does it work?

A Well, 2,4-D in particular is what I would like to address. First we need to realize that plants have a naturally occurring chemicals in their systems which control the growth of the plant. And those chemicals are known as plant auxins.

Q Can you spell that for us?

A A-u-x-i-n-s. And they regulate the growth pattern or the growing system of the plant. 2,4-D is a synthetic plant

growth regulator, and that's what these things are called, "plant growth regulators." And 2,4-D is a synthetic material which is very, very active as a plant growth regulator, and when 2,4-D is applied to sensitive plants, it acts as the plant growth regulator, it overrides the normal plant growth regulating system and the plant just goes -- sort of goes wild. Normally it's overly stimulated, terminal growth stops, the plants tend to twist and curl and the leaves curl. And if anyone has applied these chemicals to their lawn, to dandelions in their lawn, you have observed the twisting and curling. And following this, normally the conductive tissues of the plant are blocked and the plant slowly dies.

Q Now is certain herbicides or weed killers like 2,4-D selective?

A Yes.

Q What does that mean?

A It means that it affects some plants much more than other plants, and 2,4-D in particular is very active, highly active. In the sensitive plants to 2,4-D are the broadleaf type plants, in contrast to grass-type plants.

Q After you left the field research what did you do at Dow next?

A I joined a group known as the Agricultural Product Development Group, and in that group I was primarily responsible for coordinating research programs with other

field research people, as well as university research people.

Q What type of university research people would you coordinate with?

A Well, in the area that I was working, frequently we would work with the university people, like Texas A&M researchers, or other university research people who were interested in the same projects and programs that we were.

Q How long were you in the ag development group, agricultural?

A I was there until 1974.

Q Now when you say you were doing this research, this was for the efficacy or the effectiveness of the product?

A And the response of plants to our herbicides.

Q After 1974 where did you go next with Dow?

A I was still in the Agricultural Products Department, but I served as a technical adviser for the department as it related to herbicides.

Q What type of technical advice would you give?

A Well, I was involved primarily at that time, or during that period, with the technical aspects relating to product damage complaints and claims, troubleshooting, you might say.

Q Can you give us an example?

A As it relates to, oh, possibly there would be a complaint of spray drift from an aerial application of 2,4-D into a sensitive crop.

Q Can you tell us what spray drift is for those of us who don't know?

A Alright. Of course, in this part of the country much of the spraying is done by aircraft as they spray range and pasture in particular. Very small amounts of liquid are used, oftentimes maybe from one to five gallons of spray per acre. The particles are very small as they come out of the aircraft, and of course if there is a cross wind or a little wind, these particles tend to be blown and move with the wind. And if there isn't extreme care under those conditions, they can move into a soybean field or a peanut field which -- and those crops are highly sensitive to 2,4-D.

Q And are those the type of things that you would investigate?

A Yes. As well as crop injury cases or even efficacy cases where it would not -- it didn't control the weeds properly. There usually was a reason, and that was what I was attempting to find out.

Q Besides getting involved in those property damage cases have you ever been in any personal injury cases?

A Very few. I have worked on a few. I have testified in one or two.

Q What was the basis of your testimony in those one or two cases?

A As it related to efficacy of the crop -- or efficacy of the product.

Q Okay. Just so we let the jury know, are you an expert on the human effects of 2,4-D?

A Absolutely not. I have not done testing. I have not done work in the toxicology or human effects area.

Q How about animal effects of herbicides?

A No, I've not worked in that area.

Q You are not a doctor?

A I am not a medical doctor.

Q You are not a cancer --

A Let's make that clear.

Q Okay. Okay. You are not a cancer doctor or a toxicologist?

A Absolutely not.

Q Okay. Are you familiar with any analytical research or manufacturing process or the tox labs?

A Well, I am not a chemical engineer. I am not a process chemist, so I am not an expert in that area, no.

Q Do you know any testimony or do you have any testimony about how Mr. Greenhill died?

A No, I do not.

Q And do you know what caused his cancer?

A Absolutely not.

Q When you started with Dow -- now we know what you're

not, let's talk about what you are. When you started with Dow in 1949 what was 2,4-D used for and 2,4-D products?

A 2,4-D was first used commercially back in 1945, so that the whole program with 2,4-D was just nicely getting going and getting momentum. But at that time it was already being used extensively on small grain crops, such as winter -- spring weed in the Great Plains area, used on corn and grain sorghum, sugarcane, pastures and rangeland -- many of the uses that are in current use.

Q Okay. And what kind of weeds back in '49 were they trying to get rid of?

A Well, with 2,4-D of course they were still after the broadleaf weeds, and wild mustards in the Great Plains area, and pigweed, ragweed, dandelions in lawns, and all the typical jimsonweed, the common, broadleaf type weeds.

Q And the type of testing that was done during those years again?

A Well, the testing, of course, was on plants, depending on whether we were working on rangeland or whether we were working in crops, the type of testing varied; but of course you were looking for our chemical, studying the dosage and the timing, the proper time to put them out, how to put them out, what the response of the weeds was, and if you were working in a crop, of course you had to evaluate the effect on the crop to be sure you weren't injuring the crop,

either.

Q And tox studies, or toxicological studies involving humans, that would be someplace else at Dow? You had nothing to do with that?

A Yes, I had nothing to do with that.

Q Today, who would use 2,4-D products, and what would they use it for?

A Well, 2,4-D is even way back since '45, and especially since about 1950, 2,4-D products are used very extensively. There are about approximately 55 million pounds a year is used commercially in the United States alone, and about half of that 55 million pounds is used on cereal crops, such as the wheat, the grain crops, corn, sugarcane, grain sorghum. About a quarter of it is used for pasture and rangeland weed control, and the rest is used for utility rights-of-way weed and brush control, highway roadside work, lawn areas, golf courses, all those type of places where you have a problem with broadleaf weeds and grass, or grass crops.

Q Why would you use weed killer, for example like 2,4-D, on grains and corn? What does it accomplish?

A Well, back in the '50s and before we had 2,4-D you'd travel in the Northern Plains area in the spring of the year when they had spring wheat growing and the fields would be solid yellow with wild mustard. You could take an airplane at the proper time and spray a swath through the field and

just release that grain, and the rest of the field would be solid yellow with wild mustard. So it's a matter of controlling the weeds, controlling competition, allowing the crop to provide maximum yields. So you are really trying to increase your crop, your yield, your food production. It's a production technique that's very efficient and it's very economical.

Q Prior to 1970 was 2,4-D regulated by the Government?

A Yes, 2,4-D has always been regulated.

Q Who regulated it, to your knowledge?

A Prior to 1970 the United States Department of Agriculture was responsible for regulating and registering 2,4-D type products.

Q After 1970 who became responsible?

A The responsibility was turned over to the Environmental Protection Agency in 1970, and they have been responsible since that time.

Q What did the U.S.D.A. require when it was responsible?

A Well, the typical things, as one would expect. You had to provide information on the composition of the material you are selling, you had to show that what you were selling was what was on the label, also you had to provide data on the efficacy, that it would do what the label says it would do, you also had to provide toxicology information to show that the product was safe to use as labeled.

Q Who supplied the data to the U.S.D.A. on 2,4-D products?

A It comes from various sources. Most of the -- much of the data on 2,4-D to support label comes from the manufacturer himself. Of course at that time there were several manufacturers. Data came from different places. But in addition to that, our university people were extremely interested in developing 2,4-D, because it was the first time that we'd had a new, organic chemical that was practical for good weed control. So much of the data came from detailed studies from university people. Their reports normally are published in scientific journals, and that data, as well as company data, funnels in to the Environmental Protection Agency to provide the data package to support label registration.

Q And the type of data on 2,4-D that you worked on would be the efficacy, correct?

A Yes, and crop safety.

Q Could 2,4-D products be sold to the public without the EPA approval?

A No, not legally.

Q During your thirty-seven years with Dow, and to your knowledge now, has 2,4-D been approved by the use of the Government?

A Yes.

Q Is it still approved today?

A Yes, it is.

Q Is ~~2,~~4-D products still widely used in the United States and the world?

A Yes, we discussed that, right.

Q Can any member of the public, general public, go out and buy a product, a 2,4-D product?

A Any 2,4-D product that's 2,4-D by itself, they can. And many combinations with other chemical products they can. There are some that they cannot.

Q Okay. Did you go on a shopping trip this week in Marshall?

A Yes, I did.

Q And what did you do?

A It was interesting to me, Monday afternoon when I got in town I was curious to see if these products, such products as we are talking about, were available to the general public here in Marshall. So we went on a -- I went on a little shopping trip and found these products available on the shelf available to the public in several stores.

Q Okay. At this time I am going to give you a shopping bag and help you with it.

MR. BALDWIN, SR.: Your Honor, we have never seen any of this, and it wasn't listed on the Witness List.

MR. ORTEGO: It's demonstrative evidence, Your

Honor. I am not introducing it into evidence.

THE COURT: Go ahead.

(Mr. Ortego continuing:)

Q Can you tell us what you bought and where you bought it?

A Well, first -- first I found products at the Wal-Mart Store right on the shelf, open to the public, and there we picked up four different 2,4-D containing products. First of all here is one called "Spectricide," which is a liquid weed and feed type of product. It has 15 percent nitrogen, and it also, according to the label, contains 2,4-D.

Q And who manufactures that?

A This product was manufactured -- it's manufactured for the Kenco, K-e-n-c-o, Chemical and Manufacturing Corporation at Jacksonville, Florida.

Q And does that have an EPA registration number on it?

A Yes, it does. The EPA registration number is 2217-681-8845.

Q And does it have any warnings on it?

A Yes, it does.

Q What does it say, if you can read it?

A I've got to find them. The cautions that relate to handling properties say as follows: "Keep out of reach of children. Caution. Statement of practical treatment: in case of contact, wash skin with plenty of

soap and water, and for eyes, flush with water for fifteen minutes and get medical attention."

The caution, the precautionary statements themselves, as it relates to humans, it says: "Caution: Harmful if swallowed. Avoid contact with eyes, skin or clothing. In case of contact, immediately flush eyes or skin with plenty of water. If irritation develops, get medical attention. Do not inhale. Avoid contamination of food or feed stuffs."

Q Okay, put that one down. What is the next one that you found?

A The next product is also Specticide brand of lawn weed killer, and it has on the label: "For dower weed, dandelions, chick weeds, clover plant and ground ivy."

Q Okay.

A And this is one that you would dilute with water and spray on your lawn.

Q Is the warning similar on that as in the other product?

A The warning appears to be exactly the same. It says: "Danger. Corrosive. Causes eye damage. Do not get in eyes or on skin or clothing. Wear goggles and face shield when handling. Harmful if swallowed or inhaled. Avoid exposure to spray mist. Wash thoroughly after handling."

Q Okay. Does that have an EPA registration number on it?

A Yes, it does. That's also supplied by the chemical and manufacturing corporation, the same as the previous product. And the registration number is EPA Registration No. 2217-597-8845.

Q Let's see, briefly we will go through the others that you found.

A This is an aerosol can, actually, for -- and it's called "Weed-B-Gone Jet Weeder," by the Ortho brand. This product also contains 2,4-D, as well as some other weed killers. The -- if I can find the -- the cautionary statement reads as follows: "Avoid contact with the skin, eyes and clothing. Wash hands after use."

Q Okay.

A And then it has a note for physicians. For emergency information there is a call number for the company. This product is put out by the Chevron Chemical Company in San Francisco.

Q Okay. It also has an EPA registration number?

A Yes. The EPA registration number of this product is No. 239-2334-AA.

Q Okay.

THE COURT: What is the significance of that number?

THE WITNESS: The significance of the EPA registration number identifies and demonstrates that that

product has been registered and approved by the Environmental Protection Agency. And once that product is approved, the EPA assigns that number so that the manufacturers can indicate such on the product.

THE COURT: All right.

(Mr. Ortego continuing:)

Q Just briefly go through the other products you had, and you don't have to read all the labels. Tell us what you got and where you got it, too, by the way. I don't think you told us where you bought some of this other stuff.

A All these that I've shown so far have been -- were on the shelf at Wal-Mart.

Q Okay.

A This was a Wal-Mart product also. This is a Weed-B-Gone similar to the aerosol, but this is a ready-to-use with a little pump bottle that you use on your lawn for dandelions, just pump it, ready to use. And it's also by the Chevron Company, and the EPA Registration No. is 239-2499-AA.

Q And the warning, we won't bore the Jury.

A They are similar. Very similar.

Q They are similar?

A Very similar. Then we went nextdoor to Brookshire's, right in the grocery store, and it was interesting because on the shelf right across the isle from the produce department.

Here we have the Ortho Weed-B-Gone, the same product that we picked up or bought there at the Wal-Mart Store. And I am sure it has the same EPA registration, because it's the same product.

Q Okay.

A Another product from Brookshire's was one, a Spectrum brand of product called "33-Plus Lawn and Weed Killer." And And it too was one that would be diluted with water and sprayed on your lawn to control dandelions and a whole list of weeds that are shown here on the label.

Q Without reading it, does it also have an EPA registration number?

A Yes. The EPA registration number of this product is 2217597-10[illegible]. And this product is manufactured for the Spectrum Home and Garden Products by the Subigigi (pho) Corporation.

Q Do you have anymore in there, Mr. Watson -- Dr. Watson? We will go through them just quickly because I think you have done enough.

A I have one different one. We picked up two products at the Kroger Store right here in town. One was the same we just discussed, this 33-Plus Lawn and Weed Killer. But one that's a different package and a different company from Kroger's is one put out identified as "Green Light Wipe-Out Broadleaf Weed Killer." This too has 2,4-D in it, and it

would be used similarly to the other products we talked about. This product, EPA registration number of this product [redacted] 569-123-ZA. And this is put out by the Green Light Company in San Antonio.

Q Thank you.

A That's all.

Q I'll take that from you. Just put that back in. (Removing box and tendering to Mr. Gillam) Now, all of these products that you bought 2,4-D is one of its active ingredients, correct?

A Yes, it is.

Q Does Tordon 101 have 2,4-D as one of its active ingredients?

A Yes, it does.

Q What other active ingredients does Tordon 101 have besides 2,4-D?

A The product Tordon 101, in addition to 2,4-D, there is a newer chemical known as picloram.

Q Is Tordon 101 available to the general public like these other products?

A No, it is not.

Q And why is that?

A Because Tordon 101 is what's known as a restricted use pesticide, and that is a term applied or determined by the EPA for certain pesticides that need special handling. And

Tordon 101 needs special handling because the picloram that's in the product is extremely active. On some weeds and plants it is at least ten times as active, as far as the weed killing properties, as 2,4-D. And besides, 2,4-D degrades quickly in soil. Picloram lasts in the soil for extended periods of time. So because of this, in order that users can handle it safely as far as not killing undesirable, or desirable, crops and plants, they need special training. So it does require certified applicators with special training in order to buy it and use it.

Q What would happen -- what would be the difference of picloram if it got on a bean crop? Or how does that work?

A Well --

Q When you say it's persistent in the soil, you'd better explain that.

A I will try to explain it. First of all, say you were applying it to a pasture and it drifted into another field, 2,4-D would normally degrade in the soil under warm, moist conditions in two or three weeks. If there was any significant amount there, picloram could last even into the next season. So if peanuts or soybeans were planted the next year, you could get a carryover effect. So, it needs to be handled properly, and that's why they require special training through certified applicators.

Q Who has the final say in what goes on the labels of

these products containing 2,4-D?

A EPA is the controlling agency as far as labeling is concerned.

Q In addition to using 2,4-D in the research area, have you personally used the product over the last thirty-seven years?

A Many, many times, various products.

MR. ORTEGO: I pass the witness, Your Honor.

THE COURT: You may cross-examine. You haven't run across anything that will kill fire ants, have you?

THE WITNESS: It's not 2,4-D.

CROSS EXAMINATION

BY MR. BALDWIN, SR.:

Q If you do, I know some local citizens that would run you out of town. Now, Mr. Watson, how long were you with Dow?

A I worked for Dow for approximately thirty-six and a half years.

Q The proper name is "The Dow Chemical Company"?

A That's the correct title, yes.

Q And what's your background, your --

A I am a soil scientist by academic training.

Q Would that be close to a botanist?

A I've had botany. I have had some botany, quite a lot of botany.

Q Is that the study of plants and soils and grasses?

A Plants and soils and crops. I am really an agronomist, which means a specialist in crops and soils.

Q You don't pretend to be a toxicologist?

A Absolutely not, sir.

Q Or a medical doctor?

A That's right.

Q And you are not rendering any opinions here today about the toxicity of 2,4-D as it applies to human beings, are you?

A That's correct.

Q Now you were with Dow how many years?

A Thirty-six and a half years.

Q You are now retired?

A Yes, sir.

Q But you still do consulting work for Dow?

A Yes.

Q And you charge them, don't you?

A Yes, sir.

Q And what's your rate?

A I get fifty dollars an hour.

Q Plus your expenses?

A Plus expenses.

Q Now when did you come to Marshall for this trial?

A I came Monday.

Q You've been here since Monday?

A Yes, sir.

Q Do you know a Mr. Newton?

A I've known Dr. Newton professionally --

Q Dr. Newton, excuse me.

A -- through the years through the Weed Science Society of America.

Q Is he here in Marshall?

A I saw him this morning.

Q The first time you've seen him?

A Yes.

Q Where did you see him?

A I saw him at the hotel.

Q Do you know a Dr. Chezezs (pho)?

A I do not.

Q Or Dr. Reed?

A I do not.

Q Have you seen Dr. Reed since you've been here?

A No. I do not know Dr. Reed.

Q I believe you told us that -- told me earlier -- do you remember when we took your deposition?

A Yes, sir.

Q That 1981, I believe it was, you joined the Litigation Department of Dow?

A Yes, I did.

Q And you stayed in the Litigation Department of Dow from 1981 to 1986, didn't you?

A Yes, sir.

Q And you spent all your time working on lawsuits, didn't you, or complaints?

A I worked on complaints, claims, and some lawsuits, yes.

Q You either worked on lawsuits or potential lawsuits, didn't you?

A I worked on claims and litigation, yes.

Q Full-time, didn't you?

A Yes, sir.

Q And you worked on cases involving claims where 2,4-D had harmed individuals, didn't you?

A No, sir.

Q You never worked on a case where it was alleged that 2,4-D harmed an individual?

A No, sir.

Q You didn't tell us that you worked on such a case in Maine and another one in Tennessee?

A I did not testify in those cases. I --

Q Well, you knew about it. You knew about them?

A Yes, yes. I do recall the one in Maine, right.

Q And you were consulted about it, weren't you?

A I consulted as far as -- this was a spray drift case, and I did testify, not testified, but I worked in the area

of the effect of the spray drift on the property and on the crop.

Q Whatever you did, you worked on a case involving a personal injury to a human being involving 2,4-D, didn't you?

A It was an alleged -- it was an alleged problem, yes.

Q And you did another one in Tennessee where the claim was that it was a neurological damage that was caused? Isn't that what you told us on your deposition?

A Yes.

Q All right. And so you worked full-time in the Litigation Department on the litigation team of Dow Chemical Company until you retired in 1986, didn't you?

A I worked essentially full-time in the property damage area with the agricultural chemicals and the effects on plants and crops.

Q I say you worked full-time with the Dow litigation team, didn't you?

A Yes, I did.

Q All right. Now you are Mr. A. J. Watson, it is?

A Yes, I am.

THE COURT: Mr. Baldwin, let's take a break a minute. I think we need a fifteen minute break. Be back in the jury box at twenty minutes till three.

(Recess at 2:25 p.m., until 2:40 p.m.; open court, jury

and all parties present)

THE COURT: Please be seated. You may proceed.

CROSS EXAMINATION CONTINUES

BY MR. BALDWIN, SR.:

Q Mr. Watson, I was about to hand you a letter that has been marked --

MR. ORTEGO: The number, Mr. Baldwin?

MR. BALDWIN, SR.: 20 j.

MR. ORTEGO: 20 j.

Q -- and ask you if you recognize that?

A Yes, I recognize it as a Dow letter.

Q Well, it shows -- you received a copy, doesn't it?

A Yes, I did.

Q And as a matter of fact, it appears to me it was addressed to you?

A Yes.

Q And does it have a Dow stamp on it?

A Yes, it does.

Q A stamp that says "Dow" with a number behind it?

A Yes.

Q Is that right? A Dow stamp similar to the one on this document, which is Page 19 of the Hazard Report? Is that not correct?

A That's a different number.

Q Well, is that a Dow stamp?

A It appears to be. I don't know for sure, but it appears to be, yes. It's got a Dow -- says "Dow" and some numbers.

Q Now your letter says: "As promised, following are my thoughts pertaining to the phenoxy RPAR situation." What does "RPAR," that acronym, stand for?

A The -- our -- the intitials, or the letters -- the initials "RPAR" stands for a term that relates to the Environmental Protection Agency called "Rebuttable Presumption Against Registration."

Q All right. And y'all were kind of having a controversy along about that time with the EPA, weren't you?

MR. ORTEGO: Objection; Your Honor, form of the question.

THE COURT: Overruled.

A I wouldn't -- I'd -- I wouldn't say it was a controversy.

Q When it refers to phenoxy, it's talking about 2,4-D, among other things, isn't it?

A Yes.

Q It says: "Fortuitously, we recently had a discussion with registration personnel on the status of 2,4-D and silvex." Is that another phenoxy?

A It's in the -- it's another chemical in the phenoxy family of compounds, yes.

Q " -- which helped focus some of the issues." And it

says: "It was the consensus of registration personnel," that would be the Dow registration personnel, wouldn't it?

MR. ORTEGO: Objection, the document speaks for itself, Your Honor.

THE COURT: Overruled.

A I -- I am not following you --

Q All right. Can you read with me the first sentence --

A -- Mr. Baldwin.

Q -- in the second paragraph? "It was the consensus of registration personnel," referring to Dow personnel?

A Yes.

Q " -- that 2,4-D is no longer on the "front burner," front burner being in quotes, "but instead will be evaluated according to generic standard criteria."

Now, what did he mean when he was talking about 2,4-D being on the "front burner" with the EPA?

MR. ORTEGO: Judge, I am going to object to what someone else means. He knows what he knows and not what someone else knew.

THE COURT: He can testify if he knows. If he doesn't know, he can so state.

(Mr. Baldwin, Sr. continuing:)

Q Mr. Watson, this letter was written to you, wasn't it?

A Yes.

Q Did you understand what the man meant when he wrote it

to you?

A Yes.

Q What did he mean, then, when he said it was on the front burner?

A He meant that 2,4-D, the -- any continuing registration questions with 2,4-D and 2,4-D products with the EPA would relate to the generic compound itself. In other words, the 2,4-D itself.

Q Well, he referred in the next sentence about the toxicological properties of 2,4-D, didn't he?

A Yes.

Q And you, even as a botanist, know that toxicological properties means that it might be harmful, don't you?

MR. ORTEGO: Objection, Your Honor. This is beyond the scope of this witness's expertise.

THE COURT: If he knows.

Q Do you know that, sir?

A Well, I -- I -- it's -- I think the document speaks for itself here. I -- I am certainly not a toxicologist, and --

Q Didn't I hear you say you were a Ph.D.?

A Yes, sir.

Q Do you know what the term "toxicological properties" means?

A Yes, I do.

Q Well, what does it mean?

A It means the effect of chemicals on animals.

Q Adverse effect?

MR. ORTEGO: Objection.

A Any type of effect.

THE COURT: Overruled.

Q Then it goes on and it says: "Since a major potential question on 2,4-D will likely concern the 1966 FDA oncogenicity study." Doesn't that relate to a study that the FDA did in 1966 about cancer?

MR. ORTEGO: I am going to object again, Your Honor. He is not familiar with this type of area, and he is not a toxicologist and not qualified to interpret these studies.

THE COURT: He can testify if he knows. If he doesn't know, he can so state.

A I do not know, and I am not qualified to -- to even discuss the toxicological properties of these compounds.

Q Do you as a Ph.D. know what the word "oncogenic" means?

A It relates to cancer.

Q All right. And do you as a Ph.D. know what they mean when they say "a 1966 study of the FDA on oncogenicity"? Wouldn't that mean to you, or just a plain old everyday person, that that was a study relating to cancer in 2,4-D?

MR. ORTEGO: Judge, I am going to object. It calls for this witness to speculate. He already says he is not familiar or qualified to deal with this, and now he is asking him to speculate.

THE COURT: Overruled. You can answer the question if you can. If you can't, you can so state.

A Well, it -- it so stated that it's referring to that study, and that's as far as I can say.

Q All right. Then you can agree with me, my question, from the outset -- they were talking about a study, a cancer study, about 2,4-D and cancer that the FDA ran in 1966, isn't that true?

MR. ORTEGO: Objection, Your Honor. It assumes facts not in evidence, and it's been asked and answered. It's argumentative.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Isn't that true?

A Well, it stands -- it speaks for itself, that it relates to that study.

Q Well, can you answer my question, please, sir?

A All right, it just speaks for itself.

Q Let me just ask it one more time very simply. Does or not this letter relate to a cancer study that the EPA did in 1966 relating to 2,4-D?

MR. ORTEGO: Objection. Asked and answered, Your Honor.

THE COURT: Overruled.

A That's what the document states that.

Q So you agree it does?

A Yes.

Q All right. Now, it says a little bit further, so at least in 1966 somebody was concerned that 2,4-D might be a carcinogen, weren't they?

MR. ORTEGO: Objection, Your Honor. It calls for speculation.

THE COURT: Overruled.

A Well, this is out of my area.

Q But, can you answer my question, sir? This is plain, English language here.

A That --

Q Doesn't it suggest to you, Mr. Watson, that in 1966 somebody in the Government, at least, was concerned about 2,4-D being a carcinogenic agent?

MR. ORTEGO: I will object again, Your Honor.

THE COURT: Overruled. Answer if you can, sir.

A It indicates -- it indicates that in the report, in the letter, yes.

Q All right. And then it says: "It was felt that prior to committing to a two-year study with new production material

we should obtain some indications as to the potential of impurities to cause increased toxic effects in chronic studies." Do you see that sentence?

A No, I don't.

THE COURT: Are you still on the first page?

A I don't see it here, sir.

Q It's on the first page in the last paragraph near the bottom. "It was felt . . . "

A I see -- I see the statement.

Q You see it now?

A Yes, I see the statement.

Q So there they are talking about impurities causing toxic effects, aren't they?

MR. ORTEGO: Judge, I am going to object again. This witness is being called to speculate for the document. The document speaks for itself. He is not a chemist, he is not a manufacturing processor, and Mr. Baldwin is asking him to interpret this document.

THE COURT: Mr. Watson, was this letter written to you by someone at Dow Chemical?

THE WITNESS: Yes, it was written to me by a man at Dow Chemical, yes.

THE COURT: All right, overrule the objection.

THE WITNESS: He was the development manager.

THE COURT: Go ahead. Overrule the objection.

(Mr. Baldwin, Sr. continuing:)

Q Who was it written by, Mr. Watson?

A Mr. Len Smith.

Q And who is he?

A At that time he was the product development manager in the Agricultural Products Department.

Q And it was written on Dow stationery, was it not?

A Yes.

Q And it was dated January 26, 1979, was it not?

A Yes.

Q And it contains the Dow stamp that we have already talked about, does it not?

A Yes.

Q And it contains what some people refer to as a "Dow man number," does it not?

A Yes.

Q And what is a Dow man number?

A That's a number assigned by the company to identify a particular person.

Q And what is the Dow man number on that document?

A "022777."

Q What's your Dow man number?

A That's my number.

Q Sir?

A That's my man number.

Q All right. Now then let's go back to the document. It does talk about impurities in 2,4-D, and having increased toxic effects, does it not?

A It mentions impurities. I don't -- I can't interpret what it says about that.

Q Well, it says the word "impurities to cause increased toxic effects." Do you see those words?

A But we need to read the entire sentence. "It was felt --

Q Please feel free to.

A -- that prior to committing to a two-year study with new production material we should obtain some indications as to the potential of impurities to cause increased toxic effects in chronic studies."

Q Now then, that was January of 1979, wasn't it?

A Yes.

Q And I will hand you Plaintiff's Exhibit No. 20 bb.

MR. ORTEGO: Mr. Baldwin, may I see that first so I can see what it is?

MR. BALDWIN, SR.: You have seen it.

MR. ORTEGO: I just want to know your numbers.

(Mr. Baldwin, Sr. tendering exhibit to Mr. Ortego.)

MR. ORTEGO: Okay, I know what this is. Fine, I just didn't know your number system.

MR. BALDWIN, SR.: It's been introduced into

evidence.

MR. ORTEGO: Fine.

THE COURT: Let's go.

(Mr. Baldwin, Sr. continuing:)

Q Have you seen this Krumel Report?

A I saw this report at the time of deposition.

Q And that's a report talking about impurities that were found in the Dow 2,4-D manufacturing process, isn't it?

MR. ORTEGO: Objection, Your Honor, mischaracterization of the evidence. The document speaks for itself.

A This is a --

THE COURT: Overruled.

A This is a report written by two analytical chemists from the Organic Chemicals Research Department.

Q And doesn't it refer to impurities found in the 2,4-D manufacturing process?

A The title -- the title of the report "A Study of the Formation and Removal of Impurities in the Semi-hydrous process for 2,4-D."

Q Now then, can you answer my question?

A Would you repeat your question?

Q Does that document refer to impurities found in the Dow 2,4-D manufacturing process?

A Well, the document speaks for itself; the title itself states that.

Q I can read the title, sir. I am asking you a question.

A I think it states --

Q Does it or doesn't it?

MR. ORTEGO: Objection, Your Honor.

Q Sir?

A The -- the report speaks for itself. It's right here.

Q Then you agree it talks about impurities in the Dow process?

MR. ORTEGO: Objection, Your Honor, argumentative.

A It's in the title --

THE COURT: Overruled.

A It's in the title of the report.

Q I understand what's in the title of the report.

A Yes, yes.

Q But I am asking you if you can answer my question?

A Yes.

Q Yes what?

A Yes, it relates to impurities.

Q All right. And that was just a couple of months before this letter in January 1978 talking about impurities in the Dow manufacturing process, wasn't it?

A What's the date on the -- I didn't catch the date of the report.

Q October of -- just a minute and I will get it here. October 27, 1978, about two months before?

A Yes. Yes.

Q This letter here still talking about impurities in the 2,4-D, is that right?

A Yes.

Q And this document talks about impurities in the Dow process going back to 1977, doesn't it?

MR. ORTEGO: Objection, Your Honor, beyond the scope of this witness's expertise, an analytical chemical document, to interpret it.

THE COURT: He can testify if he knows. If he doesn't know, he can so state. For the record, Mr. Baldwin, identify what document you have reference to.

MR. BALDWIN, SR.: Thank you, Your Honor. It's a Krumel Report dated -- I mean, Exhibit No. 20 bb Watson.

Q Let me try to help you in order to save time.

MR. BALDWIN, JR.: Your Honor, that's Trial Exhibit No. 19 a, though.

THE COURT: All right. Is this exhibit already in evidence?

MR. BALDWIN, SR.: Yes, it is, Your Honor.

THE COURT: What number?

MR. BALDWIN, JR.: 19 a.

THE COURT: All right.

MR. ORTEGO: Can I see what you marked?

MR. BALDWIN, SR.: I didn't mark anything.

MR. ORTEGO: Let me see (examining exhibit) Fine.

(Mr. Baldwin, Sr. continuing:)

Q Do you see that report where it says the impurities going back to 1977?

A Yes.

Q And the same report talks about those impurities as being highly toxic. Do you agree that there were highly toxic impurities in 2,4-D?

A I certainly do not. Again, I am not a -- I am not a toxicologist. I am not capable of evaluating or even judging that matter.

Q Well, can you read with me, sir, on this same exhibit: "2,4-D dichlorophenol." That's 2,4-D, isn't it?

A No, that is not 2,4-D.

Q Is that one of the impurities?

A That's one of the -- that's not an impurity.

Q What is it?

A That's one of the components for making 2,4-D.

Q All right. "50% NaOH and chloroacetic acid are highly toxic and corrosive raw materials." Does it say that?

A That's what it says, yes.

Q And it says: "When handling, the protective clothing should include lab coat, rubber gloves, goggles, and when possible, all operations were performed in a fume hood." Is that what it says?

A That's in the research laboratory, yes.

Q Now he asked you about warning labels in the EPA. I hand you another Dow document which is marked "20 uu."

MR. ORTEGO: Is that Trial Exhibit 20 uu or Deposition Exhibit, Mr. Baldwin?

MR. BALDWIN, SR.: Trial Exhibit 20 uu, as far as I know. I don't see any other number on it.

(Mr. Baldwin, Sr. continuing:)

Q And that talks about these same impurities, doesn't it? And it says: "Precaution, such as wearing protective clothing, must be taken to prevent skin contact." Do you read that?

A I'd have to read the whole page. I don't even know the content of this document.

Q Well, that's where after they found these impurities in the manufacturing process, they ran some tests to find out how toxic they were.

MR. ORTEGO: Objection, Your Honor. Mr. Baldwin is now testifying.

THE COURT: I sustain the objection for the question asked, or to the statement made.

MR. BALDWIN, SR.: Withdraw the statement.

(Mr. Baldwin, Sr. continuing:)

Q Just read the document. It speaks for itself, sir.

A (Examining) Okay.

Q Now that statement makes the statement we talked about, does it?

MR. ORTEGO: Objection to the form of the question, Your Honor.

A What statement are we -- please repeat. I'm not --

Q "Precautions, such as wearing protective clothing --

THE COURT: Overruled.

Q -- must be taken to prevent skin contact."

A That's what the report says, yes.

Q Now, you said something about the Dow label and the EPA. To your knowledge, did Dow ever go to the EPA and say "We want to put on our label that this product should never come -- "that protective clothing must be worn"?

A That was -- Dr. Baldwin, that never was a product. That was what the -- what that refers to is a trace contaminant.

Q It was an impurity that was found in the process, wasn't it?

A Yeah. But the testing was done on the compound itself.

Q Nevertheless, it was in the 2,4-D manufacturing process, wasn't it?

MR. ORTEGO: Objection, Your Honor, argumentative.

THE COURT: Overruled.

A That's what the report indicates, yes.

Q This is an impurity found in the 2,4-D manufacturing

process, which meant that the product contains this impurity in it?

A May I see those documents again? I am not sure those are even the same compound.

MR. ORTEGO: Objection, Your Honor.

THE COURT: What is the objection?

MR. ORTEGO: The objection is it's not the testimony it's in the compound. The document speaks for itself and it doesn't state that. And I think the witness has answered that, was trying to answer that.

THE COURT: Overruled.

(The Witness examining documents.)

A Okay, what was your question again, Mr. Baldwin?

Q Doesn't that relate to the impurities that were found in the Dow manufacturing process?

A The report refers to the handling precautions that a laboratory person would have to have if they were handling this contaminant in the pure form.

Q Right. But that contaminant is the contaminant that was found in the manufacturing process, wasn't it?

MR. ORTEGO: Objection, Your Honor. It's beyond his expertise at this point.

A It is beyond my expertise, and I don't --

Q What does it say it relates to?

THE COURT: Just a minute.

A I can't -- I can't -- I'm confused. I can't -- I can't --

THE COURT: Can you answer the question, sir?

THE WITNESS: No, I can't.

THE COURT: All right.

MR. BALDWIN, SR.: I will go to something else.

THE COURT: Go to something else.

(Mr. Baldwin, Sr. continuing:)

Q In any event, whatever it relates to, do you know of any occasion where Dow went to the EPA and said "we want to put on our label language that said 'this product must not come in contact with the skin'"?

A I would have to refer to the product label. What product are we talking about, sir?

Q Tordon 101.

A The label would speak for itself, and I don't recall whether that statement is on the Tordon 101 label or not.

Q All right. Well, let me shorten this. Did you ever -- did anybody in Dow ever show you this report?

A I don't ever recall seeing that document before.

THE COURT: Is that 20 uu?

MR. BALDWIN, SR.: Yes, 20 -- well, it's 19 a, Your Honor.

THE COURT: All right.

MR. BALDWIN, SR.: It's the Krumel Report.

THE COURT: Let's be sure and designate these documents --

MR. BALDWIN, SR.: I appreciate it, Your Honor.

THE COURT: -- so we know what we are talking about.

MR. BALDWIN, SR.: I get lax about that. Appreciate your reminding me.

(Mr. Baldwin, Sr. continuing:)

Q So you never saw the document I just identified as 19 a before?

A I don't recall ever seeing that document.

Q Even though you were in the legal department, no one ever --

MR. ORTEGO: Objection, Your Honor.

A I don't recall seeing the document.

THE COURT: What is your objection?

MR. ORTEGO: Whether he is in the legal department. This is an analytical lab laboratory. It doesn't matter at one time he was in the legal department. There is no reason why he would have to see that. That's argumentative.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Now one other thing. This exercise you went through bringing these products up here I presume was to demonstrate to the Jury that anybody off the street can go buy them, is

that your purpose?

A That's what it indicates, yes.

Q Do any of those products contain picloram?

A No, they do not.

Q Tordon 101 contains picloram, doesn't it?

A Yes, it does.

Q And it contains 2,4-D?

A Yes, it does.

Q You didn't bring us any Tordon 101, did you?

A No, I did not.

Q And nobody -- to make it clear -- you are not trying to leave the impression with this Jury that anybody off the street can walk in and buy Tordon 101 off the shelf at Wal-Mart?

MR. ORTEGO: Objection, Your Honor, asked and answered during direct. He testified they can't.

THE COURT: Overruled.

A That's right, it's a restricted use pesticide.

Q It's a commercial pesticide, isn't it?

A It's a restricted use pesticide, available for purchase and use only by certified applicators who've had that special training.

Q And don't you think that it's important that those applicators who are using this commercial solvent be fairly and adequately warned of the dangers associated with using

it?

MR. ORTEGO: Objection to the term "commercial solvent," Your Honor. That's incorrect.

THE COURT: Overruled.

A That -- that requires an interpretation in the toxicological area that I don't feel qualified to --

Q You don't have any opinion as to whether people ought to be warned about using the product of its hazards?

A The type of warning that's necessary is -- depends on a lot of reports and a lot of studies that go into this. And all those types of studies are provided to the EPA, and when the label, application for label is made, the EPA reviews that data and it's a consensus of the thinking of their scientists as to what type of precautions are necessary.

Q And you and Dow would certainly listen to an independent agent about what kind of information should go on your label, wouldn't you?

A We certainly would listen to EPA, yes, sir.

Q Well, what about some other agency that was a valid, independent agency in the field?

A If we had that information, it would be provided to EPA and it would be judged there totally, with the total data package, as to whether or not that was appropriate for the circumstances.

Q Well, I am talking about you at Dow. Y'all had

suggestions that go into the input of the labels, don't you?

MR. ORTEGO: I am going to object to the "you at Dow." This is one person at Dow who has limited ability to testify in certain areas, and I will object to "you all at Dow" as him referring to the whole company.

THE COURT: Overruled.

(Mr. Baldwin, Sr. continuing:)

Q Mr. Ortego asked you some questions about labels here a minute ago, do you remember that?

A Yes.

Q All right. And my question is isn't it true that you people at Dow have input with EPA as to what goes on those labels?

A Dow has input, yes.

Q And if someone told you or made a suggestion to you about your label, certainly you would listen to it if you felt it was valid?

A I am sure it would be listened to, right.

Q Well, were you familiar with the study run for the State of California by people, an outfit I call "Hazards Outfit"? I can't remember the proper name of it. But here is a copy of the report, at least a blowup of a portion of the report, and I will get you the report.

MR. ORTEGO: My objection is continuing, Your Honor, as it pertains to anything outside his expertise.

THE COURT: Overruled.

MR. BALDWIN, JR.: Here it is, 20 w.

(Mr. Baldwin, Sr., continuing:)

Q 20 w, a report done on 2,4-Dichlorophenoxyacetic acid. That's 2,4-D, isn't it?

A Yes, that's 2,4-D.

Q Evaluation of the Human Health Hazards. Hazard Alert System, Epidemiological Studies Laboratories, State of California, Department of Health Services, Department of Industrial Relations. That's the type of individual you would give some credence to, isn't it?

A Yes, I am sure Dow would listen to an agency like that.

Q And if they issued a report that said "present labels," talking about labels on 2,4-D, "are inadequate," would you at Dow take that into consideration and have at least some conferences about whether you ought to change your label?

A Yes, I think Dow would consider that, yes.

Q Do you know whether they ever did or not?

A No, I do not.

Q They haven't changed their labels, have they?

MR. ORTEGO: Objection to the time frame, Your Honor, and the product.

Q On 101?

THE COURT: He can answer if he knows.

A I don't know. I haven't seen a label in the last two

D-1944

years.

Q Well, if they did they didn't tell you about it?

A Right.

Q Now one final thing. You are not here telling this Jury or trying to render any opinion as to whether or not Mr. Greenhill's death was a result of his exposure to 2,4-D, are you?

A No, sir, I am not.

MR. BALDWIN, SR.: I have no further questions.

MR. ORTEGO: No redirect, Your Honor.

THE COURT: May this witness be excused?

MR. BALDWIN, SR.: As far as I am concerned.

THE COURT: Mr. Watson, you may be excused.

THE WITNESS: Thank you.

MR. ORTEGO: Judge, may I have just five minutes?

THE COURT: Yes.

MR. BALDWIN, SR.: Your Honor, at this time could we offer 20 j, which is the letter he referred to? I don't think I formally offered it into evidence.

THE COURT: All right. It will be admitted.

MR. ORTEGO: Let me see it a second.

THE COURT: 20 j.

MR. ORTEGO: No objection, Your Honor.

THE COURT: It will be admitted.

MR. ORTEGO: Your Honor, that will conclude the

Defendant's case in this matter.

THE COURT: The Defendant rests?

MR. ORTEGO: Yes, we do, Your Honor.

THE COURT: Any rebuttal?

MR. BALDWIN, SR.: I don't think we do, Your Honor. I will just say we don't.

THE COURT: All right, take the Jury out, please, for a minute.

(Jury out at 3:10 p.m.; open court continues)

THE COURT: Both the Plaintiff and Defendant rests on the entire case?

MR. ORTEGO: Yes, Your Honor.

MR. BALDWIN, SR.: Yes, Your Honor.

THE COURT: All right.

MR. ORTEGO: Judge, I would like to move for another directed verdict.

THE COURT: All right. You may proceed.

MR. ORTEGO: Again, Your Honor, as I did after the conclusion of the Plaintiff's case, Dow Chemical Company again moves for a directed verdict.

The first area in which I would like to move a directed verdict is with regard to any allegations in regard to the chemical picloram. As you recall, that is not in this case and should not go to the Jury, because when I asked Plaintiffs sole expert, Dr. Teitelbaum, if it could

cause cancer or Hodgkin's disease or lymphomas, it was his opinion that picloram was not responsible for Mr. Greenhill's injuries, was not responsible for causing his lymphomas, and responsible for causing any injury. He based his opinion solely on 2,4-D. So I think that even Plaintiffs will have to concede that picloram should not be the case, and the sole issue should be on 2,4-D.

THE COURT: I don't recall any requested issues dealing with picloram, so I don't think that's -- I am not going to submit it because it's not here.

MR. ORTEGO: Good. Then I am not going to argue then on that.

THE COURT: You can quit while you are ahead on that one.

MR. ORTEGO: I know when to shut up on that issue, Judge. With regard to negligence, Your Honor, there has been no proof by the Plaintiff on this, plus Mr. Baldwin's opening --

MR. BALDWIN, SR.: He doesn't need to argue that, either, Your Honor.

THE COURT: I think he said earlier that he was not asking for any submission on negligence, and I didn't see any in the Charge.

MR. ORTEGO: That will make my life easier. One final thing, Your Honor. With regard to the sole and

remaining count of strict liability, it is the Defendant's position that the Plaintiff has not met his burden of proof to go to the jury even on a prima facie case. Dr. Teitelbaum, the only expert, himself said it would be idle speculation to say when Greenhill got his first cancer; he has no idea.

Also, he himself named numerous substances which can cause cancer and Hodgkin's disease and lymphomas, all which he says were possible causes for the cancer of Mr. Greenhill. These substances included: cigarettes, beer, wine, bacon, celery, peanuts, diesel fuel, grilled steaks, hamburgers -- a long list of everyday items, which the record shows Dr. Teitelbaum attested that Mr. Greenhill had some exposure to.

Mr. Greenhill also testified to these everyday exposures by Mr. Greenhill. Additionally, Dr. Teitelbaum espouses the one-hit theory of cancer, the right molecule at the right time and the right place can cause cancer. It would be absurd, according to Dr. Teitelbaum, if that's true, it takes one molecule in one spot, to determine what percentage legally is responsible for Mr. Greenhill's cancer. Was it what percentage of cigarette smoke? What percentage of all those carcinogens caused his cancer? And what Dr. Teitelbaum is asking us to do, and should not be allowed, is to speculate which molecule did it? There is all these molecules and one could do it, and this man was exposed to

trillions of molecules.

I don't think we should ask the Jury to speculate like Dr. Teitelbaum does. It should not go to the Jury; it doesn't go to the weight; his testimony really is not legally sufficient to go to the Jury; he has not made out a prima facie case from its proofs on any failure to warn or defect in the product. And I would then ask for a directed verdict.

THE COURT: Overrule the last portion.

MR. ORTEGO: Judge, I also have one other request with regard to the Jury. I have done it in Waco Federal Court. There are seven people on the Jury, and when I was before Judge Walter Smith one of the things he suggested, and it worked out fine, is that if an alternate has sat here for two weeks, why not let them sit in the jury deliberations? And if there is no objection, I would request that Juror No. 7 be submitted and participate in the jury deliberations, if she is still here.

THE COURT: I don't know that I am going to do that. I am going to go ahead and excuse the seventh person at the proper time.

MR. ORTEGO: Okay, Your Honor.

THE COURT: All right. Now I have given copies of the Charge to each of you. I believe you have a Protective Order?

MR. BALDWIN, SR.: Matter, yes, Your Honor.

THE COURT: All right, protective matter at this time. I am just getting it. Let me see what it says. (Examining document) All right, I assume that this has been presented to the attorney for the Defendant?

MR. BALDWIN, SR.: Yes.

THE COURT: It's agreeable?

MR. ORTEGO: It's agreeable, as long as the Court will endorse it and protect my client's interests. And I think for the record --

THE COURT: Is this the original? Is this the only one here that I am looking at?

MR. BALDWIN, SR.: No, there are all kinds right here. I don't know which is the original. My eyes aren't that good. Here is one copy.

THE COURT: Let me just sign, approve this, the one that I am approving now.

MR. ORTEGO: And I spoke with Mr. Baldwin --

MR. BALDWIN, SR.: In view of that, there will not be a Protective Order.

THE COURT: That is correct.

MR. ORTEGO: Okay, in lieu of that. And I did speak to Mr. Baldwin and he has agreed that Dr. Teitelbaum will not dissiminate that report. He has had access to it. And I would request to the Court that -- does Dr. Teitelbaum,

did he ever get the unredacted copy?

MR. BALDWIN, SR.: I don't think so.

MR. ORTEGO: Okay. And at the conclusion of the trial that I get the copy back. I will worry about that later. I withdraw that request.

THE COURT: All right, here is the Order approving it.

MR. BALDWIN, SR.: Your Honor, I have a request. It doesn't rise to the dignity of a motion, but --

THE COURT: We have had a lot of those.

MR. BALDWIN, SR.: I am getting old and feeble, and I sure would like to argue this case in the morning rather than this afternoon. Maybe we can get the Charge worked out and behind us today and come in here fresh in the morning.

THE COURT: Have you gentlemen had an opportunity to look at the Charge yet?

MR. BALDWIN, SR.: No, sir, I haven't.

MR. ORTEGO: I haven't yet, but Mr. Brown has. We will do what the Court wishes. I can sum up in thirty minutes.

THE COURT: I have got a jury, this other jury, and one of the men on the jury here is on the jury coming in tomorrow, Mr. Brian Wright. And I just feel like I have got to try to finish this case today.

MR . BALDWIN, SR.: All right, sir.

THE COURT: So I will be happy to give you thirty minutes to take a look at this Charge -- if it takes that long. If you want to come back in in fifteen minutes, or we can go over it now if you have had a chance to look at it. If you haven't --

MR. BALDWIN, SR.: We have not. Gill has gone to the office to get --

THE COURT: Why don't we just stand in recess until fifteen minutes until four. We all report back here at that time and see if we can take a look at this Charge and try to argue this case this afternoon.

MR. ORTEGO: Sum it up this afternoon?

THE COURT: Yes. All right, we stand in recess until fifteen till four.

(Recess at 3:30 p.m., until 3:45 p.m.; open court, jury not present)

THE COURT: Please be seated. Do each of the attorneys have a copy of the Charge?

MR. BALDWIN, SR.: Yes, Your Honor.

THE COURT: Have you had an opportunity to look at it? What I would like to do is just start with page 1 and try to go down. Number 1 and 2 -- number one, of course this is just the usual opening that we have on any charge. Now, number page 2 is Plaintiffs' page 2, and page 3 is

Defendant's page 2. My page 4 is Defendant's page 3, and then on Plaintiffs' page 3 and number 5, and Plaintiffs' requested on page 4 is my 6. And Defendant's page 4, my page 7. If you have any objection now, speak up as we go along. That is why I am calling it out.

MR. BALDWIN, SR.: These look all right to me, Your Honor. They are just plain, old boilerplate.

THE COURT: Just boilerplate, all of it. My page 8 is Plaintiffs' page 5. My page 9 is Plaintiffs' pages 5 and 6.

MR. BROWN: Your Honor, that's page 9 of --

THE COURT: Yes, sir.

MR. BROWN: -- of the Court's copy? The Defendant will have an objection to the first sentence of the second, complete paragraph, where it states: "When more than one claim is involved."

THE COURT: Are you on my page 9?

MR. BROWN: Yes, Your Honor.

THE COURT: Now tell me again where you are.

MR. BROWN: The first sentence, the second paragraph.

THE COURT: "In the absence of such proof"?

MR. BROWN: No, Your Honor. "When more than one claim . . ."

THE COURT: I'm sorry, I see. Go ahead.

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MR. BROWN: "When more than one claim is involved, as in this case, you should consider each claim and the evidence pertaining to it separately as you would had there been a separate trial on each claim." As we have now gotten this down to just strict liability, I think we need to delete that.

MR. BALDWIN, SR.: Well, there are two counts of strict liability.

MR. GILLAM: Warning and defect.

MR. BROWN: Well, but there would only be one claim, and there would be only one trial on that matter.

MR. BALDWIN, SR.: If it will make them happy, it's all right with me to come out.

THE COURT: Take that sentence out, and just go ahead and start that last paragraph with the words: "In determining whether any fact in issue. . ." Does that satisfy you?

MR. BROWN: That's agreeable, Your Honor.

THE COURT: All right. I don't think that is going to be earth-shattering either way. Page 10, that's a continuation. My page 11 is Plaintiffs' page 6. My 12 is Plaintiffs' 7. My 13 is Plaintiffs' 8 and 9.

MR. BROWN: Your Honor, that's your page 12?

THE COURT: Yes, sir.

MR. BROWN: The Defendant would object to the

third paragaph, the second sentence, I believe, beginning "The law imputes to a manufacturer knowledge of the harmful character of his product, whether he actually knows it or not."

We object to this only to the extent that we would have the state of the art language which holds the manufacturer to the knowledge held by the scientific community at the time.

THE COURT: I think that's in here.

MR. BROWN: Okay, but subject to that being in --

THE COURT: I will make a check by that paragraph on page 12, and I think we will find that I have seen this in this somewhere.

MR. BROWN: Yes, sir.

THE COURT: I usually give it.

MR. BALDWIN, SR.: I thought I saw something marked "state of the art."

MR. BROWN: Yes, there is a later instruction we have requested. But subject to its entry, then --

THE COURT: I think it's in here, your state of the art instruction.

MR. BROWN: Yes, Your Honor.

THE COURT: All right. Thirteen (13) is Plaintiffs' pages 8 and 9. My page 14 is Plaintiffs' 9 and 10. My 15 is Defendant's page 7. My page 16 is

Defendant's Page 8. I beg your pardon?

MR. BROWN: May we have just a moment, Your Honor?

THE COURT: All right. Now these are your instructions I am reading now.

MR. BROWN: Yes. All right, Your Honor, no objections.

MR. BALDWIN, SR.: Wait just a minute, Your Honor. On page 16 we object to the reference to the Hodgkin's disease, and we are going to have that objection throughout. I don't know when you want to be heard on that. But it's our contention that neither the law of Oregon nor the law of Texas allows them or requires us to prove that he died of any specific disease. The question is whether he died and whether their defective product was a producing cause, or whether their failure to warn was a producing cause. And the jury may speculate about whether he died of Hodgkin's disease.

THE COURT: Is this the first time in the Charge on my page 16 that the word "Hodgkin's disease" appears?

MR. BALDWIN, SR.: Yes, Your Honor.

MR. BROWN: I believe it is, Your Honor.

THE COURT: All right, why can't we handle -- I see what he is talking about. Why can't we handle that by taking out on the top of page 16 after the "magnitude

of the danger" period. Take out -- or "if one exists," take out everything beyond that.

MR. BROWN: But, Your Honor, Defendant would concede that whether or not it was Hodgkin's disease may not be the controlling issue, although the full day of testimony today has been on that point, apparently. We believe that the case, certainly the entire thrust of the case has been on cancer. So the Defendant would request that it be changed to read: "Magnitude of the danger, if one exists, that it causes cancer." Certainly that is the issue in this case.

MR. BALDWIN, SR.: I would say "disease" or "death." I mean, I don't think the law requires us to show it caused cancer. I think it has -- I think the evidence is overwhelming in this case.

THE COURT: Overwhelming evidence in here that it causes -- that's your contention, that it caused cancer.

MR. BALDWIN, SR.: Well, that it causes death.

THE COURT: It appears to me that the Plaintiff would want that in here, and I am going to put it in here.

MR. BALDWIN, SR.: All right.

MR. BROWN: Can we also specify --

THE COURT: "If one exists, that it causes cancer."

MR. BROWN: In humans?

THE COURT: That is all we are dealing with, isn't

it?

MR. BROWN: Well, there has been a lot of testimony that what causes cancer in humans may or may not -- or in animals, may or may not cause it in humans.

THE COURT: Well, I am going to assume that we are talking about humans in this Charge, and it causes cancer. Does that satisfy the objection?

MR. BALDWIN, SR.: Well, we are going to have an objection to it, and it is going to be based on this, that I don't think the --

THE COURT: Well, just make it now as we go along. Let's make your objection.

MR. BALDWIN, SR.: That is what I thought I would make it known to the Court.

THE COURT: Yes.

MR. BALDWIN, SR.: And I will try to be very brief. I don't think the law requires the plaintiff to prove that this product causes cancer. I think all the law requires the plaintiff to prove is that this product was unreasonably dangerous, that the warning was insufficient and that was the producing cause of the man's death. Now it happens to be, in this case, that the evidence is that the man died of cancer, and we are claiming that that was the cause of his death. But some juror may get hung up out there, "Well, I don't think 2,4-D causes cancer." And I don't think that

that's our burden.

THE COURT: Well, what else could a juror find?

MR. BALDWIN, SR.: Somebody may get back there and say "We don't think that what he had was cancer, but we think it was caused by 2,4-D."

MR. BROWN: Your Honor, from Mr. Baldwin's opening statement Monday, I quote: "He contacted lymphoma, which is cancer." So the case has been opened on cancer; all of the testimony has been cancer. I think we need to focus the jury's attention on what the case is about, it's about cancer.

THE COURT: I am going to go ahead and overrule the Plaintiffs' objection to the use of the word "cancer" on page 16.

Page 17, which is Defendant's page 9. Page 18, which is Defendant's page 10.

MR. BALDWIN, SR.: Your Honor, we again --

THE COURT: Let me make this comment, Mr. Baldwin. I am going to use "that the product 2,4-D," I am not going to try to pronounce that every time I read this.

MR. BALDWIN, SR.: I don't know why you don't just say "2,4-D."

THE COURT: That's what I just said I am going to say. I am just going to say "2,4-D" throughout this Charge. Any objection?

MR. BALDWIN, SR.: No objection.

MR. ORTEGO: No objection.

THE COURT: Any objection on page 18?

MR. BALDWIN, SR.: Your Honor, again the reference to Hodgkin's disease. Again, you see -- and also the law does not require us to show that the defendant knew that the product would cause that. That is why it's strict liability. Whether the defendant knew it or not has nothing to do with it.

MR. BROWN: Your Honor, we would turn the Court's attention to the basis of our strict liability in Texas 402(a), to Comment (j) under that section which deals basically with this. And I believe this language is, if not directly from Comment (j), it is --

MR. BALDWIN, SR.: I would like to see that language.

MR. KARDISCH: We don't have it.

MR. BALDWIN, SR.: I know you don't have it because I don't think it exists.

THE COURT: You are objecting to Paragraph No. 1 on page 18, Mr. Baldwin, and the word "Hodgkin's disease" in number 4 on page 18?

MR. BALDWIN, SR.: I am objecting to in Paragraph 1 on page 18 to the requirement that the plaintiff show that the defendant knew or should have known that the

exposure to the product would cause Hodgkin's disease. The law doesn't require that. And also I am objecting to the use of the term "Hodgkin's disease."

MR. BROWN: The Defendant has no objection to the change of "Hodgkin's disease" to "cancer," as the Court has previously indicated. Again, primarily this case being one of warning. Without knowledge of the defects, how can a manufacturer warn?

MR. BALDWIN, SR.: I think a more appropriate term would be if we are going to do it do it in the language of my opening statement and the way the case has been tried is whether it would cause malignant lymphoma, and I think that is a much better word than "cancer" to be used throughout there.

THE COURT: Well, couldn't we say "caused the defendant's death"?

MR. BALDWIN, SR.: The Plaintiff's? You mean the decedent's?

THE COURT: Caused the Plaintiff's death?

MR. BALDWIN, SR.: Yes, sir.

THE COURT: Take out the word "cancer," and just say "caused the Plaintiff's death."

MR. BALDWIN, SR.: That's the way it ought to be submitted.

MR. GILLAM: Your Honor, in fact I think that is

our burden is to prove the producing cause of death. If you just produce cause of cancer, then there is no link to logically go up --

THE COURT: Where I put the word "cancer," I am going to change that to "the Plaintiff's death." And I will note your exception to that, if you have one.

MR. BROWN: The Defendant would object. We believe as the case has been tried, cancer would cover both Hodgkin's, lymphoma, all the areas. But the issue is how what caused his death, not that he died.

MR. BALDWIN, SR.: Well, that goes to the -- that's argumentative, the question of what caused his death.

THE COURT: I can't say "Plaintiff's death," because he is not the plaintiff.

MR. BALDWIN, SR.: "The decedent."

THE COURT: The decedent. Caused the death of --

MR. BALDWIN, SR.: Or caused James Greenhill's death.

THE COURT: That it caused Mr. Greenhill's death, on page 16.

MR. BALDWIN, SR.: Are we on 16 now?

THE COURT: I went back there.

MR. BALDWIN, SR.: All right.

THE COURT: Where I had the word "cancer" on the top of page 16, I have changed to "if one exists, that it

caused Mr. Greenhill's death." And on page 18, number 1, I am going to leave number 1 as is, except I am going to change "used by the Plaintiff that exposure to the product caused Mr. Greenhill's death." And number 4, "that the product was a producing cause of Mr. Greenhill's death."

MR. BROWN: Also on number 1, I believe we need make the change "manufactured and sold the product used by Mr. Greenhill."

THE COURT: I'm sorry, where?

MR. BROWN: The latter part of number 1 on page 18 where we have "Plaintiff," probably need to substitute "Mr. Greenhill," once again.

MR. BALDWIN, SR.: Yes. And then on --

THE COURT: I'm sorry, I have lost you there. Are you on page 18?

MR. BROWN: Yes, Your Honor, number 1 --

THE COURT: All right. "The Defendant knew or by the application..."

MR. BROWN: Okay, and the third line beginning "manufactured and sold the product used by," I believe it should read "Mr. Greenhill."

THE COURT: All right, yes. "And that exposure to the product caused Mr. Greenhill's death."

MR. BROWN: Your Honor, that causes another problem, because here you are talking about --

THE COURT: Well, this is your submission.

MR. BROWN: Well, but since we have changed the instruction from causing a specific injury, cancer or Hodgkin's or lymphoma or whatever, cancer I believe is correct, we are talking about what the Defendant knew or by application of reasonable care should have known at the time that it manufactured and sold the product that it caused --

THE COURT: That exposure to the product would cause Mr. Greenhill's death, or could cause.

MR. GILLAM: Could.

MR. BROWN: Okay, we need to add something in there.

THE COURT: That the product could cause Mr. Greenhill's death.

MR. BROWN: Could we have just a minute, Your Honor?

MR. BALDWIN, SR.: Then you have "Hodgkin's disease" in that next paragraph twice, paragraph 2.

MR. BROWN: Your Honor, one last comment. Pursuant to our objection on the use of "Mr. Greenhill's death" versus "cancer," as to the matter of the warning issue in the case, it has not been the Plaintiff's contention that any warning should say "this product causes death." The emphasis of the Plaintiff's entire case has been there should

be a warning that 2,4-D can cause cancer. So again to support our contention that "cancer" should be the proper terminology rather than pulling out the specific individuals, a specific individual's injury, I don't think a manufacturer is to foresee each individual person; but the manufacturer, with the knowledge and scientific community should know whether the product is capable of causing a particular disease -- can it cause cancer? Can it cause --

THE COURT: What you are objecting to is severing out "Mr. Greenhill"?

MR. BROWN: Yes. I believe we should go back, as the Court had previously ruled, to go back to just use "that it caused cancer." Cancer is the issue in the case --

MR. BALDWIN, SR.: No, no.

MR. BROWN: -- and they should not foresee a particular man's death. Dow Chemical, when they sold this in '77, it doesn't make sense that they should foresee that this might kill a man named Mr. Greenhill.

MR. BALDWIN, SR.: I don't think the law requires us to show that they foresaw cancer. The question is whether it was harmful, whether it was a hazardous product so as to make it unreasonably dangerous, and whether the failure to provide a warning was the producing cause of the death, whatever the death was. And the law doesn't say anything about cancer.

MR. BROWN: Your Honor, without belaboring the point, without knowledge how can we warn?

THE COURT: I see the point you are making. I see the point the Defendant's are making, and I think that it is good. I think I am going back to the use of the word "cancer."

MR. BALDWIN, SR.: Well, if you are going to do that, would you use instead of "cancer" a "malignant lymphoma" which is more precise?

THE COURT: Well, isn't all the testimony to the effect that that is cancer, cancerous?

MR. BALDWIN, SR.: Yes.

MR. BROWN: Cancer I believe covers all of the specifics we have gone through in the trial.

THE COURT: It appears to me that that's a broader term that would include what the Plaintiff would want.

MR. BALDWIN, SR.: All the Plaintiff wants, and I think all the law requires, is that the Court to instruct the jury if this product is unreasonably dangerous, and did they fail to issue a proper warning, and was that a producing cause of this man's death? And I don't think the law requires us to show that they anticipated it would cause cancer, or measles, or mumps, or anything else. All we are required to show is the product was dangerous and it caused this man's condition, whatever it is. It just happened in

this case it was cancer. In another case it might have been nerve damage or something.

THE COURT: I am going back to page 16. I am going to rework --

MR. BALDWIN, SR.: Your Honor, I think that --

THE COURT: -- I am going to make it read as follows: at the top of page 16, "magnitude of the danger, if one exists, that it could cause cancer."

All right, I am going over to page 18, number 1: "The Defendant knew or by the application of reasonably developed human skill and foresight should have known at the time it manufactured and sold the product used by Mr. Greenhill that exposure to the product could cause cancer."

MR. BALDWIN, SR.: Your Honor, you know what this is doing is putting us to the burden of proving that this product causes cancer in every instance, and I don't think that's the law. It happens to be that this man had cancer, and the evidence is that this product along with something else may have caused his cancer. So we have got the burden now, if you do it this way, of showing that 2,4-D causes cancer.

THE COURT: Isn't that what you are attempting to show?

MR. BALDWIN, SR.: I am attempting to show that 2,4-D was a contributing cause of his death. His cancer

may have come partly from some other source. I just think it puts a burden on us, and it's a "buzz" word. You know I have not been able to use "Agent Orange" or "Vietnam" or "napalm" or anything like that because of the inflammatory nature of the word, and this is another one just like it. And the jury is going to go back in and their whole argument is going to be, "Well, my gosh, can 2,4-D cause cancer?"

THE COURT: Well, isn't your argument going to be that it could?

MR. BALDWIN, SR: It's going to be that it was a contributing cause, but it 'ain't' going to be my argument that it was the only cause, I don't think, and that's what this -- the burden this puts on me is to show that it was the only cause.

THE COURT: Off the record a minute.

(Brief off-the-record discussion by The Court and attorneys)

THE COURT: I think number 2 could read as follows, we are back on the record now: "That the Defendant failed to provide adequate warnings," because when you talk about "safeguard the product," to me that doesn't mean anything. Make it read "That the Defendant failed to provide adequate warnings that exposure to that product," wait just a moment, "or failed to provide adequate instructions on what precautions should be observed when handling the product when

it left the Defendant's possession." Leave out your "Hodgkin's disease" reference in both instances.

MR. BALDWIN, SR.: I would not object to that.

THE COURT: All right. "That the Defendant," it will read as follows, number 2: "That the Defendant failed to provide adequate warnings," take out "that exposure to that product caused Hodgkin's disease, "to provide adequate warnings, or failed to provide adequate instructions on what precautions should be observed when handling the product when it left the Defendant's possession."

Any objection to that?

MR. BROWN: None, Your Honor.

THE COURT: Any objection for the Plaintiff?

MR. BALDWIN, SR.: No, sir.

THE COURT: Any objection to number 3? Number 4?

MR. GILLAM: Number 4 again, we changed --

MR. BALDWIN, SR.: From "Hodgkin's disease" to "the proximate cause of Mr. Greenhill's death," isn't that what you changed that to?

THE COURT: I have it here now "That the product was a producing cause of Mr. Greenhill's death." Any objection to that?

MR. BALDWIN, SR.: No.

THE COURT: I think it protects everybody.

MR. BROWN: Again, all the other prior instructions

have focused the causal issue on this could cause cancer. I think we should remain consistent.

THE COURT: Now I am going back to page 16, at the top of page 16, and make it read: "if one exists, that it could cause cancer." I don't think you can use that in that context on page 18, number 4.

MR. BROWN: Okay.

THE COURT: I think you have got to use the words "Greenhill's death." You couldn't make it read "That the product was a producing cause of cancer." That would not make any sense.

MR. BROWN: We withdraw our objection to number 4, page 18.

THE COURT: All right. Now, number 1 on page 18 is: "The Defendant knew or by the application of reasonably developed human skill and foresight should have known at the time it manufactured and sold the product used by Mr. Greenhill that exposure to the product could cause cancer."

That is the way I am going to present it, subject to any exception on the part of the Plaintiff.

Page 19 is Defendant's page 11.

MR. GILLAM: Your Honor, that has already been stated in shorthand on page 16, I believe. In other words, the state of the art defense is incorporated into the first full paragraph where it talks about manufacturer's knowledge

based upon the prevailing --

THE COURT: I think essentially it's in here.

MR. BROWN: Your Honor --

THE COURT: There may be a little bit of a derivative that you put on my page 19.

MR. BROWN: Your Honor, the Defendant would request the full instruction on page 19. Your Honor, the Defendant would agree to delete the second paragraph of page 16, which they are referring to as a 'shorthand rendition of state of the art,' but surely it does not fully state the defense; and in this case certainly that is a very crucial matter in light of the dates of the publications of the articles.

THE COURT: You are agreeable to taking out the paragraph, the last paragraph on page 16?

MR. BROWN: The next to the last.

THE COURT: The next to the last paragraph --

MR. BROWN: "That an unreasonably dangerous propensity --

THE COURT: -- on page 16, but leave in all of page 19?

MR. BROWN: Yes, Your Honor, so that we have the full state of the art instruction.

THE COURT: All right. Any objection to that?

MR. BALDWIN, SR.: No, sir.

THE COURT: All right, the second paragraph on page 16 is omitted; the last paragraph on page 16 remains as is. No objection to page 17. We have already passed 18 two or three times. Page 19 remains as is. Page 20.

MR. BALDWIN, SR.: The words "strong and substantial should come out.

THE COURT: I agree.

MR. BALDWIN, SR.: And instead it should be replaced with the word "some evidence."

THE COURT: Just "constitutes evidence."

MR. BALDWIN, SR.: All right.

MR. BROWN: Your Honor, we would cite the Court to the case of Gideon v. Johns Manville, 761 F.2d 1129 at 1144, where "strong and substantial" is used by the Fifth Circuit in its quotation. I believe from the Fifth Circuit that would be their interpretation of the law.

If I could read from page 1144 --

THE COURT: Give me that cite again.

MR. BROWN: Gideon v. Johns Manville, 761 F.2d 1129 at 1144.

THE COURT: What does it say?

MR. BROWN: Reading from page 1144: "Compliance with such government safety standards constitutes strong and substantial evidence that a product is not defective." This is an asbestos case regarding the, as I understand it,

regarding the duty on the manufacturers of asbestos to warn of the dangers inherent therein, and went to whether at the time of exposure of the plaintiff they had knowledge, or whether they were meeting standards at that time. But the Fifth Circuit clearly states it had to be a strong and substantial evidence.

MR. BALDWIN, SR.: There they were not proving or ruling on an instruction that said that. That was just dicta in an opinion.

MR. GILLAM: Certainly if you put that in there, Your Honor, you have an extraordinary comment on the weight.

THE COURT: I am not going to put that "strong and substantial." I am going to make it "constitutes evidence that a product." I am going to let the Jury decide whether it's strong and substantial. I will note your exception to that.

MR. BROWN: Thank you, Your Honor.

THE COURT: Page 21 is Defendant's page 13. Twenty-two (22) is Defendant's 14.

MR. BALDWIN, SR.: Well, we have got all of those Hodgkin's disease problems in that.

THE COURT: On page what, page 22?

MR. GILLAM: 23.

MR. BALDWIN, SR.: 23

THE COURT: I haven't gotten there yet.

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MR. GILLAM: Oh, I'm sorry. I thought you said "23."

THE COURT: All right, number 23.

MR. BALDWIN, SR.: No, it's not our claim.

THE COURT: This is Defendant's page 15, the Defendant's submission.

MR. BALDWIN, SR.: Well, the Defendant has got a right to submit their contentions, and I think the Plaintiff ought to have the right to submit their contentions. This is not our contention.

THE COURT: This is the Defendant's --

MR. BALDWIN, SR.: Idea of what our contentions are.

THE COURT: That is correct, yes.

MR. BALDWIN, SR.: And I think the contentions in the Charge ought to be pretty much in the language that the parties submit them.

THE COURT: That's what I hope to do. I can make that read: "The Defendant contends that the Plaintiff is claiming."

MR. BROWN: That will be fine.

THE COURT: What is the objection, or who is objecting to page 23?

MR. BALDWIN, SR.: The Plaintiffs are, Your Honor.

THE COURT: What part are you objecting to?

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MR. BALDWIN, SR.: The whole thing. I just think it ought to be what the Plaintiff's contentions are ought to be in the language submitted by the Plaintiffs, because if you start taking out "Hodgkin's disease" you are going to get back in that cancer business, and that is not the Plaintiff's contention. It may be that the Court may instruct the jury to that, but that 'ain't' our contention.

MR. GILLAM: Your Honor, if I could point out to the Court on page 11, and this was our page which we entitled "Contentions of the Party," it sets out very plainly what our contentions were, not in the language that the Defendant uses -- we haven't claimed that 2,4-D causes Hodgkin's disease. That's on page 11. It sets out in our language what we contend our contentions to be, and it is not what the Defendant submitted.

MR. BALDWIN, SR.: I don't know why that page even ought to be in here.

THE COURT: Why do we have to have that in here?

MR. BROWN: Your Honor, we would agree to take out the first paragraph where we refer to the Plaintiff's contentions, and we further agree to remove the references to Hodgkin's disease and just again go back to cancer. Also, we have a negligent, the term 'negligent,' I believe we could change to that --

MR. BALDWIN, SR.: Your Honor, I really think

you have said all of this in other places in the Charge.

THE COURT: I am going to omit page 23 and 24. I don't think it's necessary to be in here. Page 25, which is Defendant's page 17.

MR. BALDWIN, SR.: Well, I believe we have gotten these pages kind of numbered wrong here or something.

THE COURT: Twenty-two (22) is still in.

MR. BALDWIN, SR.: Judge, which is -- is that what you are calling the strict liability issues?

THE COURT: Yes. We will be taking out page 23 and 24. And 25 is Defendant's page 17.

MR. BROWN: Twenty-five (25) is --

MR. BALDWIN, SR.: I want to comment on 22 before we get away from it.

MR. GILLAM: Our pages are in reverse order.

MR. BALDWIN, SR.: It was stuck behind 23.

MR. BROWN: There is one page out of order in here, the way it was submitted to us.

MR. BALDWIN, SR.: You have got an instruction here on misuse, and you are submitting comparative under Duncan; and there is no reason to do both.

MR. BROWN: Your Honor, we agree.

THE COURT: Take out 22, and 23 and 24. Now we are to 25. Twenty-six (26), 26 is the Defendant's page 18.

MR. GILLAM: Hold on just a second on that, Your

Honor.

THE COURT: Do we have anything in this case that would cover on that intermediary?

MR. BALDWIN, SR.: I am going to tell you this, there is no law in Texas on that.

MR. BROWN: Certainly it's in the case.

MR. BALDWIN, SR.: Do you have a case to support this?

MR. BROWN: I don't have one with me, no.

MR. BALDWIN, SR.: There are not any. That's not the law.

THE COURT: Where do we have that in this case on page 26?

MR. BROWN: That the product that the plaintiff in this case, or Mr. Greenhill used, came through the Forest Service. He worked in the Forest Service and the product was sold to the Forest Service. As this product is one that is commercially restricted product, it is sold to those who have particular knowledge in the handling, etcetera. That would be the Forest Service. Then the Forest Service then allowed its employees. The duty goes, if it's supplied to the intermediary, it's much the same thing as such as a bulk supply case. The manufacturer supplies in bulk to the one with the knowledge of that product, then they have the duty, whatever they do with it, mix it with other products,

etcetera, to then pass on whatever warning.

THE COURT: Are you saying that the manufacturer has no duty when they sell to an intermediary to protect the --

MR. BALDWIN, SR.: Ultimate user.

THE COURT: -- the ultimate user? That's what this says.

MR. BROWN: If you have a learned intermediary in between.

THE COURT: What is a learned intermediary?

MR. BROWN: One who has the expertise or similar expertise as the manufacturer, that is one who should have the knowledge of any potential hazards or dangers in the product, as well as the manufacturer; and then that person, having that knowledge, uses that product or allows his employees. The same situation where a manufacturer, as we know in a bulk supply case, there is no duty for the bulk supplier to supply warning to the intermediary when he then takes it, mixes it, whatever he does, changes it, it loses the ability to maintain that warning to get to the ultimate user. So in comparison, the learned intermediary has the knowledge, then he has the duty to pass that knowledge on.

MR. BALDWIN, SR.: Your Honor, not only is that not the law of Texas but it is contrary to the law, the case being --

THE COURT: I am going to take out page 26. I will note your exception. Page 27. Page 28.

MR. BALDWIN, SR.: Maybe that should come out of there.

THE COURT: Yes, this is out. Take out page 28.

MR. BALDWIN, SR.: Well now I presume you have defined negligence on the issue. I think I remember you did that.

THE COURT: Somewhere I have. Whether this case or not, I am not sure.

MR. BALDWIN, SR.: I think you do.

THE COURT: Take out 29.

MR. BALDWIN, SR.: And 30.

THE COURT: And 30.

MR. BALDWIN, SR.: Thirty-one (31) and 32.

THE COURT: Take out 31 and 32. Thirty-three (33) I think is all right.

MR. BROWN: Other than the last half dealing with negligence again.

THE COURT: That comes out.

MR. BROWN: The second paragraph.

THE COURT: Yes.

MR. MAKULSKI: Your Honor, there is going to be need for some change in that language on 33 regarding the Plaintiff. I think you have to put "decedent," regular

changes made in the 2,4-D.

MR. BALDWIN, SR.: No, the Plaintiff must prove --

MR. GILLAM: No, the next sentence.

THE COURT: "Was the producing cause of Defendant's, I mean, "was the producing cause of Mr. Greenhill's -- was the producing cause of Mr. Greenhill's injury, or death." Which do you wish to use, "injury" or "death"?

MR. BALDWIN, SR.: Either. I don't care.

THE COURT: Make it "producing cause of Mr. Greenhill's injury." All right, the rest of 33 goes out, the last paragraph.

Now I have got a questionmark by this next one on page 34, "Alternate Causation." If there is no objection, I will leave it in.

MR. BALDWIN, SR.: Your Honor, I am reading it. Well, if you are going to give it, there is one that we ordinarily request and that is -- I think it ought to come out -- but if you are going to give it, then I think you ought to give the additional charge that if there are two causes of an event, one of which was the defendant and the other was some third party, and the plaintiff need only prove that the causation of the defendant was a producing cause of the accident in order to recover.

THE COURT: Isn't that in here by inference, what you just dictated?

MR. BALDWIN, SR.: Well, yes, but so is this other by inference; and I think if you are going to highlight that, then you ought to highlight the other side of it.

THE COURT: Let's go back to page 33 a minute, on the bottom of that paragraph that we left in, "which, in a natural sequence, produces," take out the word 'Plaintiff,' "produces Mr. Greenhill's injuries or damages complained of, if any." Page 33.

MR. BALDWIN, SR.: I think that adequately covers causation.

MR. BROWN: Your Honor, we would agree to submit the additional instruction as requested by Mr. Baldwin, and add that to page 34.

THE COURT: Dictate it and we will put it in. If you have one, you can just get it and give it to us and we will put it in.

MR. BALDWIN, SR.: All right, sir, do you want me to go ahead and dictate?

THE COURT: Yes.

MR. BALDWIN, SR.: And then if I can find one that's a little better language, I will bring it to you.

"You are further instructed that in the event there are two causes to the injury or death of Mr. Greenhill, and that one of which causes was that of the Defendant and the other which cause was that of a third person, the

Plaintiff need only prove that the Defendant's cause was a producing cause of the event, and this cause may concur with any other cause to produce the event."

THE COURT: (to Miss Jordan, secretary) Sue, type that up, doublespaced, and bring it back in here. And we will make any changes after we look at it. I think there is a word or two that should be transposed toward the beginning.

MR. BALDWIN, SR.: I could have done it cleaner --

MR. BROWN: Do you want me to wait and make objections once we get that typed up?

THE COURT: Get that typed up right quick. Let's just wait until we get this typed up, just a second, while Miss Jordan is preparing this submission of Mr. Baldwin.

Any objection to 35, page 35?

MR. BROWN: May we have just a moment? I don't believe we have read these last few pages.

MR. BALDWIN, SR.: Judge, that sets forth the as it is.

THE COURT: Beginning on the fifth line of the next to the last paragraph, beginning with "then your verdict will be for the Plaintiff and against any such Defendant." I think that should be "against the Defendant."

MR. BALDWIN, SR.: Yes, that is right.

THE COURT: Page 36 and 37, it's a continuation

of Plaintiff's request on page 10, 11 and 12.

MR. BALDWIN, SR.: I don't have any objection to 35, 36 or 37.

THE COURT: That's your submission.

MR. BALDWIN, SR.: That's my submission, and I think it's correct. It came right out of the cases.

THE COURT: You are going to agree to that?

MR. BALDWIN, SR.: Yes, sir. I can provide the Court with the cases it came out of, if you would like for me to.

THE COURT: All right.

MR. BROWN: The Defendant has no objection to those, 35, 36 and 37.

THE COURT: Thirty-eight (38) is Defendant's page 28. Of course, that's duplication, really, of what the Plaintiff has already said, to some extent.

MR. BALDWIN, SR.: I think that could come out.

THE COURT: Do you need that page 38 in view of what the Plaintiff has already said? You have pretty well said it over again, haven't you?

MR. BROWN: The only part on page 38 the Defendant would request would be the first two sentences.

THE COURT: All right. "Does not in any way mean that you should award damages to the plaintiff," period?

MR. BROWN: Yes, from the beginning to that point.

THE COURT: And then cut out the rest of it?

MR. BROWN: Yes.

THE COURT: All right, I will do that. Any objection by the Plaintiffs to taking out the remainder of that portion on page 38 at the beginning of the ending of the second sentence?

MR. BALDWIN, SR.: We have no objection.

THE COURT: Page 39 is Plaintiff's --

MR. GILLAM: Your Honor, there is some problem with that, and that's what's been redone. These damage categories here were the categories prepared under Oregon law. And we have prepared some additional ones under Texas. The elements of damage are slightly different under Oregon law.

THE COURT: Do you have the Texas that you wish to submit?

MR. GILLAM: Yes, sir.

THE COURT: Let me have them.

MR. GILLAM: Could I have just a moment, Your Honor?

THE COURT: Have you given the Defendant a copy of this charge?

MR. BROWN: Was that in the stuff you gave us?

MR. GILLAM: I don't know that it was.

(Mr. Gillam tendering document to Mr. Brown)

MR. BROWN: Is this what you are now proposing under Texas?

THE COURT: Yes.

(Brief off-the-record discussion at side bars)

THE COURT: Have you looked it over, the Defendants?

MR. BROWN: No, Your Honor.

(Off-the-record discussión continues at side bars)

THE COURT: Just a basic submission of damages shouldn't be any big problem on this issue we are talking about now.

MR. BROWN: We just want to make sure we get the correct instructions under the Supreme Court recent case, Lillibow (pho), which basically sets out those specific instructions, Your Honor. I think we have about got it, Judge.

THE COURT: All right.

(Off-the-record discussion continues at side bars)

THE COURT: Do you have it?

MR. BROWN: Yes, Your Honor.

THE COURT: Give to me what you have agreed to in substitution of 39 and 40. Are you making any change to the Charge on page 39 and 40?

MR. GILLAM: Yes, sir. After the first paragraph and after the colon, where on the copy you have it says "a through d," we will be substituting -- this will be the

language we substitute: "a) the necessary medical, nursing, and hospital care received by James Edward Greenhill for the treatment of injuries sustained by him as a result of the occurrence in question." That the first word after "a" should be "include," I suppose.

"b) include the reasonable amount of expenses for funeral and burial for James Edward Greenhill.

"c) would include the conscious physical pain, if any, and mental anguish, if any, suffered by James Edward Greenhill before his death as a result of the occurrence in question.

"d) include the emotional pain, torment and suffering that Ann Greenhill, would, in reasonable probability experience from the wrongful death of James Edward Greenhill.

"e include the pecuniary loss to the spouse and child of James Edward Greenhill as a result of this injury and death.

"You are instructed that pecuniary loss is defined as lost earnings to the time of his death and lost earning capacity, if any, that he would have contributed to his wife and child had he lived, care, maintenance, support, services, advise, counsel and reasonable contributions of pecuniary value that the spouse and child of James Edward Greenhill would, in reasonable probability,

have received from James Edward Greenhill."

MR. BROWN: Should I hold my objections until we complete?

THE COURT: Yes.

MR. GILLAM: "f) include the loss of companionship and society of James Edward Greenhill to his spouse and child.

"You are instructed that loss of companionship and society is defined as the positive benefits flowing from the love, comfort, companionship, and society that the spouse and child of James Edward Greenhill would, in reasonable probability experience if James Edward Greenhill had lived."

And then the rest of the page 39 would continue on as is the last full paragraph on that page.

THE COURT: Beginning "You may award such sum of money"?

MR. GILLAM: Yes, sir.

THE COURT: Begin there?

MR. GILLAM: Yes, sir. So essentially what we have done is delete "a" through "d" on this page, and add a new "a" through "f."

THE COURT: "A" through "f"?

MR. GILLAM: Yes, sir, and I dictated those.

THE COURT: All right. Any objection?

MR. BROWN: Yes, Your Honor. The Defendant would object to, as dictated, Section "e," the definition or instruction "e" reads: "The pecuniary loss to the spouse and child of James Edward Greenhill as a result of this injury and death."

It goes on: "You are instructed that pecuniary loss is defined as," from that point which begins "lost earnings to the time of his death and his lost earning capacity that he would have contributed to his wife had he lived," we object up to that point, in that the instruction allows for a double submission in that the instruction continues on and says: "care, maintenance, support, services, advise, counsel and," beginning here, "reasonable contributions of pecuniary value."

It's the Defendant's position that, as dictated by Plaintiff, this allows a double submission as to the earnings. They are submitting earnings on one point, both earnings that he lost while he was alive, as well as the earning capacity in the future. But yet they allow the double submission, and they come back and say: "reasonable contribution of pecuniary value that the spouse and child of James Edward Greenhill would, in reasonable probability, have received from James Edward Greenhill."

MR. BALDWIN, SR.: Maybe we can save some time. If y'all would agree with me that the term "pecuniary value"

that you are speaking of there includes lost earnings and lost earning capacity, then I have no objection.

MR. BROWN: Your Honor, we cannot agree that it includes lost wages, because if we start talking about lost wages you then have to consider the --

MR. BALDWIN, SR.: Well, then do you want us to submit that separately?

MR. BROWN: No, we'd still have a double submission.

MR. BALDWIN, SR.: Well, are you saying we can't submit the question of lost wages?

MR. BROWN: Well, we either need to submit wages and allow for the discussion or argument on the issue of what Mr. Greenhill would have expended of those lost wages, or leave it as they had originally -- as it was originally typed here, "reasonable contributions of a pecuniary value."

MR. BALDWIN, SR.: I say if you agree that those terms include his lost earnings and lost earning capacity, that's okay with me. We will pull out all that other language about --

MR. GILLAM: Pull out lost earnings.

MR. BROWN: The wages that would have --

MR. BALDWIN, SR.: We'll just go as printed before we added anything.

MR. BROWN: As printed --

MR. BALDWIN, SR.: I wasn't sure that that term, pecuniary loss, included lost earnings. And if y'all will stipulate with me that it does, then that's fine, that cures it. And I think it does after I read it again.

MR. GILLAM: Is the Jury going to understand it?

MR. BALDWIN, SR.: No, we are going to have to explain it.

MR. BROWN: And thereby will we be able to explain, not his entire lost wages, but the benefits that would have flowed to the spouse and child; therefore, you get to consider what he would have spent, etcetera?

MR. BALDWIN, SR.: Sure.

THE COURT: Of course you can argue that, yes.

MR. BROWN: So as --

THE COURT: Now, dictate it to me in the final form like you want it.

MR. BROWN: Just as it's written.

MR. BALDWIN, SR.: Just use it like that, and take all that garbage out that we put in it. Use the printed form.

MR. BROWN: Do you want us to give you a copy?

MR. GILLAM: Do you want us to go ahead and dictate it into the record?

THE COURT: Dictate it into the record. If you have a copy there --

MR. BALDWIN, SR.: He's got a copy.

THE COURT: If you've got a copy, give us a copy that you wish to have submitted in place of --

MR. BALDWIN, SR.: Here's a clean one right here.

THE COURT: Just a moment now. If you have a copy that you wish to put in the place of our "a" through "d" give it to me and we will put it in.

(Off the record discussion at side bar between Mr. Gillam and Mr. Brown)

THE COURT: All right, have the attorneys agreed on the substitution that will appear on page 39 of the Court's Charge that you have, taking out the "a" through "d" and adding some new material which you have just given to Miss Jordan, is that correct? Is that agreeable?

MR. BROWN: Agreeable to the Defendant.

MR. BALDWIN, SR.: Agreeable to the Plaintiff.

THE COURT: All right. So that will take out "a" through "d" on page 39, insert what you have agreed upon, pick up with the last paragraph on page 39 -- are y'all with me? No, you're not.

MR. BROWN: The last paragraph on page 39.

THE COURT: Pick up the last paragraph on 39. All right, on page 40, I think that will remain as is.

MR. BROWN: Your Honor, the Defendant would move to delete page 40. It's basically comparative fault.

MR. BALDWIN, SR.: You don't want to submit

comparative fault?

MR. BROWN: (Shaking head negatively)

MR. BALDWIN, SR.: Okay. In other words, you are withdrawing any issue that Greenhill committed any wrongful act?

MR. MAKULSKI: According to that instruction, that's correct, it's not our contention.

MR. BALDWIN, SR.: Okay. Well, then I agree it should come out. If you are not going to submit any Duncan issues, then it should come out.

THE COURT: Do you want 40 out, page 40 and 41? Not 41, but page 40?

MR. BALDWIN, SR.: Based on what their representation is.

THE COURT: Well, I want to be sure what that representation is.

MR. MAKULSKI: Make sure I have got the right page 40.

THE COURT: If you do that, that then takes out Special Interrogatory No. 5.

MR. BALDWIN, SR.: Right. I don't think it's raised, but in an abundance of caution, I was going to. I don't think there is a stitch of evidence in here.

THE COURT: There is no evidence that the decedent did anything improperly, is it?

MR. MAKULSKI: No, correct, Your Honor. We will take 40 out.

THE COURT: Take page 40 out, and also just while we are talking about it, we will take out Special Interrogatory No. 5, which you have dealing with --

MR. BALDWIN, SR.: Your Honor, I want to make it understood -- I want to have it understood, at least, that they are not going to object for the failure of the Court to submit that.

MR. MAKULSKI: No, we are not going to object.

THE COURT: I understand they are the ones, the Defendants are the ones who have asked that page 40 be taken out.

MR. BALDWIN, SR.: Taken out. Because if they want it, then out of an abundance of caution --

THE COURT: Forty-one (41) will remain in, 42 is just boilerplate, as is 43, 44, 45.

All right, Special Interrogatory No. 1.

(Brief off the record discussion between The Court and Miss Jordan, secretary)

THE COURT: Miss Jordan says go back to page 34. This is the paragraph that Scottie typed up.

MR. BALDWIN, SR.: I have got another one.

THE COURT: You have got another what?

MR. BALDWIN, SR.: A cleaner one that I got out

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of a charge I gave in another case.

THE COURT: All right.

MR. BALDWIN, SR.: Do you want me to read it to the Court?

THE COURT: Read it. Give them a copy of it, and both of you read it together.

MR. BALDWIN, SR.: Can you get us a copy made of this?

THE COURT: Yes.

MR. BALDWIN, SR.: Let me see, when it got typed up we have got a word left out. I may have left it out myself.

THE COURT: I retyped it. It made it read: "You are further instructed that in the event there are two causes to the injury or death of Mr. Greenhill, and that one of which causes was that of the Defendant," no, it's not done right yet. Here it is -- this is what Mr. Baldwin dictated.

"You are further instructed that in the event there are two causes to the injury or death of Mr. Greenhill, and that one of such causes was that of the Defendant and the other cause was that of a third person," I have changed up the wording a little -- take out the word "which" in both instances, "the Plaintiff need only prove that the Defendant's cause was a producing cause of the event, and

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this cause may occur with any other cause to produce the event."

What is wrong with that?

MR. BALDWIN, SR.: Well, this is just a lot cleaner.

THE COURT: All right, if you have got something that's better, we will take that.

MR. BALDWIN, SR.: And it's much shorter. Let me just read it to the Court.

THE COURT: All right.

MR. BALDWIN, SR.: "You are further instructed that the manufacturer or seller of a defective product, which product is a producing cause of an injury or death of one is liable for the injuries or death caused thereby, even though the injured person," and that would come out due to the fact they are taking it out, "or some third person may have contributed to said injuries or death."

It's much shorter and clearer. We will take out the words "injured person" or leave it in -- however you want to do it.

MR. BROWN: Your Honor, we would request the submission as you read it.

MR. BALDWIN, SR.: I'll give you both of them to look at. This is a cleaner one. (Tendering to Mr. Brown) It's not quite so wordy.

THE COURT: I am glad we are getting concerned about that at this late date. I don't care, really. It's saying the same thing only different terms.

MR. BALDWIN, SR.: It's my request, and I would like the second one.

THE COURT: You object to the second?

MR. BALDWIN, SR.: No, I say I request the second.

MR. BROWN: We would object to the second and request the first --

THE COURT: Well, that's as usual.

MR. BROWN: -- just to be consistent.

THE COURT: I am going to give the first instruction that Mr. Baldwin gave. That is page 34, is it not, the second paragraph of page 34.

Let's go to the Interrogatories.

MR. BALDWIN, SR.: Let me make a suggestion at this point. What about in the first page of the --

THE COURT: Where are we now, what page?

MR. BALDWIN, SR.: We are on page -- well, "1" should come out.

THE COURT: Are you on Special Interrogatories?

MR. BALDWIN, SR.: Yes.

THE COURT: All right.

MR. BALDWIN, SR.: The one I think should come out is the negligence.

THE COURT: One (1) comes out.

MR. BALDWIN, SR.: Right.

THE COURT: All right.

MR. BALDWIN, SR.: I think the Court somewhere in the very first page of his Charge, the first time he refers to "2,4-D, dichlorophenoxyacetic acid, say "this term will hereinafter be referred to as "2,4-D," and from then on the Jury knows what you are talking about, and we can shorten this issue by just calling it "2,4-D."

THE COURT: All right, let's look at Special Interrogatory No. 1.

MR. BALDWIN, SR.: "Hodgkin's disease" should come out. Just "decedent's death."

THE COURT: Well, my Special Interrogatory No. 1 makes no comment.

MR. BALDWIN, SR.: Oh, that comes out, Judge, that's negligence.

THE COURT: I know, I think that's out. I am trying to keep going on it.

MR. BALDWIN, SR.: I'm sorry.

THE COURT: No. 1 comes out.

MR. BALDWIN, SR.: I thought we had passed that.

THE COURT: No. All right, No. 2 I think stays in, but not the word "Hodgkin's disease was a producing cause of Mr. Greenhill's. . . "

MR. BALDWIN, SR.: I don't know why that issue belongs. I mean, "producing cause" comes after the Jury has found whether it was defective or not.

MR. BROWN: If it's not a producing cause, all the other issues are moot. They need not answer any other issues.

MR. BALDWIN, SR.: What you are doing is asking the Jury to find producing cause finding before it finds anything else. In other words, you are reversing the order of submission. And I don't know of any case holding that.

MR. BROWN: Judge, the ultimate issue in the case is causation -- did it cause it?

MR. BALDWIN, SR.: The two questions for the Jury to decide: "Was the product defective?" And by the way, I don't see an issue on that. And the other one: "And was that a producing cause of the man's death?"

THE COURT: Where are the Plaintiffs' Requested submissions on Interrogatories?

MR. BALDWIN, SR.: Let me tell you what we did, we submitted ours on general instructions; and what we did we instructed --

THE COURT: Well, who did you give them to?

MR. GILLAM: I gave them to somebody.

MISS JORDAN: You picked them up.

MR. GILLAM: I did what?

MISS JORDAN: You picked them up off my desk.

MR. GILLAM: I picked up your draft of our issues?

MISS JORDAN: Yes.

THE COURT: I would kind of like to have an idea of what you want.

MR. BALDWIN, SR.: Let me see if I can just kind of shorthand render it.

MR. GILLAM: Here it is.

MR. BALDWIN, SR.: We said in the general Charge --

THE COURT: Well, may I see it? Does anybody care if I look at a copy?

MR. BALDWIN, SR.: I thought we gave you a copy.

THE COURT: I haven't seen it.

MR. GILLAM: I brought it over, Judge, and then took it back this afternoon to look at it. (Tenders document to the Court)

MR. BALDWIN, SR.: And here is the other form

THE COURT: It does cut it back pretty much, doesn't it?

MR. GILLAM: It's just a general submission, Your Honor.

MR. BROWN: Is that not what you submitted to me the other day, the Verdict Form?

MR. GILLAM: Yes.

MR. BALDWIN, SR.: Gill, have you got the

instructions on how to submit it generally?

MR. GILLAM: That's pursuant to Rule 49.

MR. BALDWIN, SR.: No, I am talking about does he have our Requested Instructions?

MR. GILLAM: Yes. In fact, Your Honor, that's in page -- I will tell you what page that is on the Charge as it now exists.

THE COURT: Well, you have got on page 6, page 5 and 6. Of course, I think 5 probably comes out now, in view of the causation business.

MR. BROWN: What page are we referring to, Judge?

THE COURT: Let's go to Special Interrogatory No. 2. Is this the requested submisstion that I am looking at here that the Plaintiff's wanted that I have just been handed?

MR. GILLAM: Yes.

THE COURT: Has this been given to the Defendant?

MR. GILLAM: Yes, Your Honor.

THE COURT: Do you have objections to it?

MR. BROWN: Yes, Your Honor.

THE COURT: All right, let me read what the Plaintiffs are asking for. Do I understand that we are not going to submit, that the parties do not wish to submit Special Interrogatory No. 2?

MR. BALDWIN, SR.: No, the Plaintiff doesn't want

to do that.

MR. BROWN: The Defendant has requested that Interrogatory.

THE COURT: That's your second request. That's the second request you made is my Interrogatory No. 2. Do you still want that in here?

MR. BROWN: Yes, Your Honor.

THE COURT: All right. All right, we are going to change that "Hodgkin's disease" to something else.

MR. BROWN: We would request to "decedent's cancer and death," or --

THE COURT: Was a producing cause of decedent's death.

MR. BROWN: Well, to keep it consistent with our Charge, again we focused on causing the cancer.

THE COURT: "Was producing cause of Mr. Greenhill's death." That's the way it appears on page 18, the last sentence dealing with producing cause.

MR. MAKULSKI: The problem we have with this, Your Honor, is when Dr. Teitelbaum testified both in deposition and also from the stand here in court, Mr. Baldwin handed him two things and asked him two questions, said: "Do you have an opinion, within a reasonable degree of medical certainty, as to what caused Mr. Greenhill's cancer?" "Yes, I do. Dow's 2,4-D."

Then he asked him: "And, do you have an opinion, to a reasonable degree of medical probability, as to what caused his death?" "Yes, I do. 2,4-D."

So he had two charges from his expert over here saying it was both, and that's why we had this problem and that's why we had to submit it the way we did, that it's not just an injury, it's not just anything that happened to Mr. Greenhill, it's not just his death. Obviously he died.

THE COURT: "Was a producing cause of decedent's injury and death."

MR. MAKULSKI: Thank you.

MR. BALDWIN, SR.: Well, Your Honor, let me --

THE COURT: That's the Special Interrogatory No. 2.

MR. BALDWIN, SR.: At the right time, I'd like to be heard on that.

THE COURT: You can be heard now.

MR. BALDWIN, SR.: In the Court's Charge -- well, let me back up by saying the Plaintiff has two theories of strict liability in this case. One was that the product was defective and unreasonably dangerous and that was the proximate cause. The second is that they failed to warn, that was a producing cause of the accident.

Now the Court has already instructed the Jury on

page 35 that if they find that the product was defective and unreasonably dangerous and that was a producing cause, then their verdict would be for the Plaintiff and against the Defendant.

The Court goes further and says if they find that the product was -- they failed to give a proper warning and that that was a producing cause, their verdict will be for the Plaintiff. Either one of those. So there is no need in submitting producing cause again. The only thing to submit or have the Jury to do now is say if you have found either one of those, your verdict will be for the Plaintiff and you will so state. And if you have not found either one of those, your verdict will be for the Defendant and the lawsuit is over. And you have instructed the Jury about that. The only thing that remains to submit to the Jury besides those two forms you have --

THE COURT: I think you are right.

MR. MAKULSKI: That would be a general instruction, then, Your Honor.

MR. BALDWIN, SR.: That's right.

MR. MAKULSKI: We want a specific instruction to this Jury.

THE COURT: I think what he says is essentially true. I am inclined to give what we have, what has been submitted to me.

MR. MAKULSKI: I haven't seen it yet.

MR. BALDWIN, SR.: You have a copy of it.

MR. MAKULSKI: I haven't seen it. May I have a copy, please?

THE COURT: If there is not another copy, we will have one made.

MR. BALDWIN, SR.: The only thing to submit then is the damage.

MR. MAKULSKI: Your Honor, that is the ultimate issue in the case -- if the product did not and was not a producing cause of his injury, cancer, and his ultimate death, then there is no liability. Whether the product was defective or whether the product was improperly labeled makes no difference.

MR. BALDWIN, SR.: And the Court has instructed them of that, right here.

THE COURT: That's already in here.

MR. BALDWIN, SR: Yes, you have.

MR. MAKULSKI: Well, we want a specific interrogatory on the ultimate issue in this case. That's what we request.

THE COURT: Well, I am going to give it to you. I think it's duplicitous to a certain degree, but I am going to give Special Interrogatory No. 2 as I have it here now, but show it was a producing cause of Decedent's

injury and death. Answer yes or no. If you have answered it yes, then answer 3. Otherwise, do not --

MR. MAKULSKI: That should be changed, Your Honor.

MR. BROWN: Change our numbers. That would now be, I guess --

THE COURT: If you have answered Special Interrogatory No. 2 --

MR. BROWN: Well, we don't have a No. 1 now.

THE COURT: Well, there is no No. 1 on my page 2.

MR. BROWN: We took off No. 1, so this would now be No. 1.

THE COURT: This will be No. 1 now.

MR. MAKULSKI: Yes, Your Honor.

MR. BALDWIN, SR.: We are going to object to it being a duplicitous submission, and putting a more onerous burden on the Plaintiff than the law requires.

THE COURT: Now I think on page 2 --

MR. MAKULSKI: Your Honor, may I just ask on page 2, where the instruction is: "If you have answered "yes" to Special Interrogatory No. 1," should be changed to No. 1, "then answer Special Interrogatory No. 2. Otherwise, sign the Verdict Form and return to the Court."

THE COURT: I don't think "otherwise sign the verdict business" should be on here.

MR. MAKULSKI: Where else can they proceed, Your

Honor? They don't go to damages if the ultimate issue has been decided. They don't go to Interrogatory No. 2. They don't go to Interrogatory No. 3. They sign the Verdict Form.

MR. BALDWIN, SR.: I don't think they even ought to be submitted.

THE COURT: I am going to submit it. I will note your exception to that.

MR. BALDWIN, SR.: All right.

MR. GILLAM: Judge, are you still going to submit the two general?

MR. BALDWIN, SR.: Are you going to submit the general form that we requested, also?

THE COURT: You mean about finding for the Defendant and against the Plaintiff, and finding for the Plaintiff and against the Defendant?

MR. GILLAM: That's the general charge.

THE COURT: That's just a general charge, and I am not inclined to give it. Because what we are doing, if we give that and give this too --

MR. BALDWIN, SR.: You shouldn't give both.

THE COURT: You shouldn't give both of them. I am going to go ahead and give the Special Interrogatories as requested by the parties, and I am going to give what the Plaintiffs have requested but not the general verdict

form about finding for the Plaintiff and against the Defendant, and against the Plaintiff and for the Defendant.

All right, Special Interrogatory No. 3 --

MR. BALDWIN, SR.: Now, 2, what did you do about Hodgkin's disease?

MR. MAKULSKI: Injury and death.

THE COURT: On Special Interrogatory No. 2 is now No. 1 -- "was a producing cause of decedent's injury and death." If you answered Special Interrogatory No. 1, then answer Special Interrogatory No. 2. Otherwise, sign the Verdict Form and return it to the Court.

Now, Special Interrogatory No. 3 will be changed to No. 2, while we discuss it.

MR. BALDWIN, SR.: No. 2 became No. 1, is that right?

THE COURT: Right. Any objection?

MR. BALDWIN, SR.: Yes, we object. That is not the proper definition of warn. It puts a burden on the Plaintiff that the law doesn't require. It's an improper statement of the law, and it is contrary to what the Court has already told the Jury.

MR. BROWN: Your Honor, I believe this is entirely consistent with what we have already provided for in the Charge, specifically in the state of the art instruction.

THE COURT: Where did you get this interrogatory?

Is this out of the Pattern Jury Instructions? Is this some case or what? I haven't seen it submitted this way.

MR. BROWN: It's just consistent with the state of the art language in the Charge.

MR. BALDWIN, SR.: There is no law requiring us to prove that you knew your product was defective. I will take a free ride if you want to give it to me.

MR. BROWN: No, that's right, it's not your proof, but state of the art becomes the defense on our behalf which we can assert.

MR. BALDWIN, SR.: You are not entitled to an issue on the state of the art.

MR. BROWN: The Court, if he is going to submit it on special interrogatories, under the Rule can submit --

MR. BALDWIN, SR.: You are not even entitled to that in state court.

MR. BROWN: The Court can submit whatever special interrogatories it feels necessary.

THE COURT: I am not going to submit Special Interrogatory No. 3, and I will note your exception. That comes out. I think it is already in here, and I think it would be an improper placing of the burden of proof.

Go to page 4, which is now Special Interrogatory No. 2.

MR. BALDWIN, SR.: No. 4 is negligence.

MR. BROWN: That should be out.

THE COURT: That comes out. That's the negligence charge. No. 5 comes out, in view of the agreement of the parties.

MR. BROWN: Yes, Your Honor.

THE COURT: Now, No. 6, have you got -- wait, I think I have that here.

MR. BROWN: That we have already included in the Charge. That was the "a" through "f."

THE COURT: I understand.

MR. GILLAM: Could we have a minute, Your Honor?

THE COURT: Yes.

(Brief off the record discussion at side bar among Plaintiffs' counsel)

THE COURT: We are now down to Special Interrogatory No. 6, which, as I understand it, that has been changed by what was given to me earlier that's been agreed upon.

MR. BROWN: It is contained in the Charge, and therefore would not need to be in the Interrogatories. We have already instructed the issue on the elements. We just need for them to put in the figure. Having considered the elements, the Verdict Form needs to ask "What sum do you find, considering the elements as you have been instructed, would reasonably compensate the Plaintiffs for the damages," referring back to the elements that you have already

instructed on.

THE COURT: Let's get the Plaintiffs input here. I think we are going to have to put in the Special Interrogatory, what has been handed me by the Plaintiff.

MR. BROWN: Your Honor, we have it in the Charge.

THE COURT: You have charged what they can take into consideration. Now you are going to have to find whether or not they did or did not find on those particular issues. We have told them what they can consider.

MR. BROWN: The elements.

THE COURT: The elements. They may not think that there is damage on some of those elements.

MR. BROWN: That's fine. They can put in a figure and disregard what elements they believe there is no evidence on, and put --

THE COURT: Well, that's why I think we are going to have to submit it.

MR. BALDWIN, SR.: I might just agree. In other words, you want one blank on what you find the damage to be?

THE COURT: If you want to do it that way, that's fine.

MR. BROWN: Yes.

MR. BALDWIN, SR.: That's fine with me. It will simplify it.

THE COURT: Sure. If you want to just go ahead

and say "What sum of money, if now paid in cash, do you find from a preponderance of the evidence such-and-such. Answer: dollars and cents, or none."

MR. BALDWIN, SR.: Including all of the elements of damage listed.

THE COURT: Including all of the elements of damage that have heretofore been given to them. Now, they are not going to have a copy of these Instructions. They will have a copy of the Interrogatories.

MR. BALDWIN, SR.: That's fine. I think that will simplify things. Your Honor, Mr. Gillam has just raised a question I think is right, and that is you have instructed them in your general charge that if they find that the product was defective their verdict will be for the Plaintiff. Nowhere do you have an opportunity for them to indicate that. All you are asking them to do is find did the Plaintiff prove by a preponderance of the evidence that that was the producing cause. Now, if they want to stipulate that if they answer this yes we are entitled to a verdict under this Charge, I think that is all right. Otherwise, I think you have got to have a form for them to indicate that they found for the Plaintiff.

THE COURT: Well, I thought we had agreed that if they find that this was a producing cause of this man's injury and death, that the Plaintiff recovers.

MR. BALDWIN, SR.: Okay. If that's so, then that's fine.

THE COURT: Isn't that a correct statement of the Court? If the Jury finds that this was a producing cause, that 2,4-D was a producing cause of this man's injury and death, that's a Plaintiff's verdict. Then you have got to find -- and if they find that it was not a producing cause, that ends this lawsuit.

MR. BALDWIN, SR.: That's right.

MR. BROWN: That's correct.

THE COURT: If they find that it was a producing cause, then they have got to go on further and find how much money.

MR. BROWN: That's correct.

THE COURT: And I understand that's what he is agreeable -- the Plaintiff is agreeable if they find producing cause, then what sum of money, if now paid in cash. Answer: dollars and cents, or none.

Suppose they find producing cause but no damage? They can do that.

MR. BALDWIN, SR.: Well, what I don't want to happen, I don't want the Court and me to be sandbagged for the Jury to come back and find yes to this and award damages, and then them raise the question on appeal and say, "Well, there were no findings in favor of the Plaintiff. All they did was answer a special interrogatory that it was

a producing cause."

MR. BROWN: Judge, the Defendant's are aware that the Court is submitting the case on Special Interrogatories rather than a general verdict, and that's what we request. Therefore, we will not have any objection that there was not a general charge, if it is submitted as requested by the Defendant.

MR. BALDWIN, SR.: Then you do agree that if they answer yes to that it is a plaintiffs' verdict?

MR. BROWN: No. If they answer that yes they will go on and answer the damage issue.

MR. BALDWIN, SR.: Well, I mean say they answer that yes and award damages, do you agree that it's a plaintiffs' verdict?

MR. BROWN: They do not have to award damages.

MR. BALDWIN, SR.: I see. And if they do award --

MR. MAKULSKI: No, Mr. Baldwin, no, because the Judge has stricken the interrogatory relative to the failure to warn and the unreasonably dangerous. We have to have those charges in there with the order that we had it. Interrogatory No. 1, which is right now the ultimate issue, we still want them -- Mr. Baldwin has requested to go through, and his whole case has been premised on the fact that we have failed to warn. They have to make a determination of that, that we have an unreasonably dangerous

product.

MR. BALDWIN, SR.: In this case you almost have to use a general verdict form.

MR. BROWN: Your Honor, if I could maybe simplify the matter. As I understand, the Court has stated he intends to instruct Special Interrogatory No. 1: "Did Plaintiff prove by a preponderance of the evidence that Defendant's product, 2,4-D, or full name, was a producing cause of Decedent's injury and death?"

The next issue the Defendant would agree could be a damage issue with a single submission: "What sum of money, if paid now in cash, would fairly and reasonably compensate the Plaintiff for the injuries?"

THE COURT: That is what I thought we had agreed to twenty minutes ago.

MR. BROWN: I think so.

MR. BALDWIN, SR.: You have got to have an agreement out of them that that's a Plaintiffs' verdict, because otherwise you have not got a finding in here that the product was defective; you have not got a finding in here there was a failure to warn.

THE COURT: Which one do you want in that was taken out?

MR. BALDWIN, SR.: You know, if the Court wants to submit it to them on special interrogatories --

THE COURT: I am going to submit it on special interrogatories.

MR. BALDWIN, SR.: I will agree to it, but let me tell you how I think it ought to be done. It's a very simple form: Interrogatory No. 1: Do you find the product was defective as the Court has charged you? Answer: yes or no. If you have answered that yes, answer the following: No. 2: Do you find that the defect was a producing cause of this man's injury and death? Answer: yes or no. No. 3: Do you find that the Defendant failed to warn, to give a proper warning, as the Court has instructed you in this Charge? Answer: yes or no. If the answer is yes, answer the following, producing cause, and then the damage issues.

MR. MAKULSKI: Your Honor, we have combined --

MR. BALDWIN, SR.: You don't get into all that language again that you have already instructed the Jury about.

MR. MAKULSKI: We have combined in Interrogatory No. 2, which the Court had said was out, both elements of what Mr. Baldwin has just stated. Did the Plaintiff prove by a preponderance of the evidence the Defendant knew, or by the application of reasonably developed human skill and foresight should have known, at the time Defendant manufactured and sold the product 2,4-Dichlorophenoxyacetic acid, which the Decedent used: 1) that the product was

defective and unreasonably dangerous by reason of Defendant's failure to warn that such product causes his injury and death? We'd have to strike the "Hodgkin's disease" to be consistent with Interrogatory No. 1.

MR. BALDWIN, SR.: The Court has already instructed on that, and it's our contention that that's erroneous. But, whether it is or isn't, the Court has already instructed on that.

MR. MAKULSKI: It contains exactly the same elements that Mr. Baldwin has just said.

MR. BALDWIN, SR.: All the Court needs to do is inquire whether there was a failure to warn, as the Court has previously instructed you.

THE COURT: All right, you are saying that No. 3 on page 3 should remain in?

MR. MAKULSKI: Yes, Your Honor, with the exception that we change --

THE COURT: With the change "caused Decedent's injury and death? Answer yes or no."

MR. MAKULSKI: Yes, Your Honor.

THE COURT: If you have answered that Interrogatory yes, then answer Special Interragotory No. 4, which was also taken out.

MR. MAKULSKI: Yes. "If you have answered yes to Special Interrogatory 2," which is the one above, we are

changing to 2, then proceed to what would be the last interrogatory, which would be the damages interrogatory, Your Honor. "Otherwise, sign the Verdict Form and return it to the Court."

THE COURT: Are you saying that what appeared on the Court's page 4 should remain in or out, regardless of the number that it bears now?

MR. MAKULSKI: Four (4) is out. Page 4 is out.

THE COURT: Page 4 is out?

MR. MAKULSKI: Yes, Your Honor.

THE COURT: Page 5 is out?

MR. MAKULSKI: Yes, Your Honor.

THE COURT: Page 6 would be "What sum of money, if paid now in cash, do you find from a preponderance of the evidence, such-and such, Answer: Dollars and cents, or none."

MR. MAKULSKI: Yes, Your Honor. That would be now called "Special Interrogatory No. 3."

MR. GILLAM: Your Honor, essentially all they have done is trying to reurge within an issue a state of the art defense.

THE COURT: Well, I think this, I mean as Mr. Baldwin pointed out, unless they agree that you've got a Plaintiffs' verdict for the answering of these two issues, you have got to have this in there

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MR. JONES: Not worded exactly this way.

MR. GILLAM: An issue or two issues, but that's a lot more proper than to rehash what the Court has already charged the Jury with. He has already charged them about state of the art. You have already charged them about unreasonably dangerous, defective, warning and everything. They have already been charged about that.

THE COURT: I am going to go ahead and give it to them on special interrogatories, though. I am going to do that.

MR. GILLAM: Oh, yes, sir, I agree with that, but if you do it --

MR. BALDWIN, SR.: I think you ought to simplify them.

MR. GILLAM: -- just simply: Do you find there was a failure to warn? Do you find there was a defective product, as instructed by the Court? That way we don't have to get back into their defenses and everything within an issue.

THE COURT: I am going to give what I have originally shown on page 3 dealing with "human skill and foresight, should have known."

MR. BALDWIN, SR.: On page 3?

MR. GILLAM: That's right.

MR. BALDWIN, SR.: Mine "Is what sum of money."

THE COURT: No, I am talking about what I had given originally.

MR. BALDWIN, SR.: Oh, I see. Do you mean page 2, Your Honor?

THE COURT: No, page 3.

MR. MAKULSKI: It's the Verdict Form.

MR. BALDWIN, SR.: Okay. Well, let me see that.

THE COURT: On the Verdict Form. The only problem I have got with that is as you have submitted it from the Defendant's standpoint is whether or not it changes the burden of proof?

MR. MAKULSKI: No, Your Honor. "Did the Plaintiff prove by a preponderance of the evidence." And we state very clearly to the Jury exactly what --

THE COURT: I am going to give it, but that is the only thing that bothers me.

MR. BALDWIN, SR.: I don't think we are required to show that the Defendant knew --

THE COURT: Do what?

MR. BALDWIN, SR.: I don't think we are required to show that the Defendant knew that the product was --

THE COURT: Well, here is what I am giving, and I will let you shoot at it all you want to. Go to my Verdict Form. I am taking out No. 1, No. 2 will be No. 1, No. 3 will be No. 2, with the same "If you have answered

Special Issue then answer others," just like is there.

MR. BALDWIN, SR: Did you take out "Hodgkin's disease"?

THE COURT: It makes it read "Such product caused Decedent's injury and death."

MR. MAKULSKI: Yes, Your Honor.

THE COURT: The Interrogatory on 4, 5, and 6 is omitted, and 7 is omitted. In place of page 6, I am going to put following is Special Interrogatory No. 3.

Take this down: "What sum of money, if paid now in cash, do you find from a preponderance of the evidence would fairly and reasonably compensate the Plaintiff for the injuries to and the death of James Edward Greenhill resulting from his exposure to the chemical 2,4-D? Answer in dollars and cents, if any, or none." That will be Special Interrogatory No. 3.

MR. MAKULSKI: Thank you, Your Honor.

MR. GILLAM: Your Honor, may we object on the record to that?

THE COURT: Oh, of course.

MR. GILLAM: Your Honor, the Plaintiff objects to --

MR. BALDWIN, SR.: Are you taking our objections now?

THE COURT: Yes, let's take up the objections now.

MR. GILLAM: Which Interrogatory is that now, No. 2?

THE COURT: We have got three Interrogatories now.

MR. GILLAM: All right. Your Honor, Plaintiff objects to Interrogatory No. 2 submitted to the Court in the following: No. 1, that it places undue emphasis upon the state of the art defense urged by the Defendant; No. 2, that it places an incorrect burden of proof upon the Plaintiff in that the -- well, that the law is incorrect, that there is no burden upon the Plaintiff to show that the Defendant knew, or by the application of reasonably developed human skill and foresight at the time of manufacture that there was a defect in the product. That's not the burden upon the Plaintiff to prove that fact.

No. 3, it combines the warning claim by the Plaintiff with the defective product claim, also urged by the Plaintiff. We had two separate claims: one is a defective product which was a producing cause, and another, a failure to warn, which was a producing cause.

This issue improperly combines those two allegations by the Plaintiff.

And I think I have objected to this, Your Honor, but for purposes of clarity, we do believe it is an incorrect statement of the law as it applies to this case. The Court has already instructed the Jury within the

Court's Charge and the instructions as to the law in this case. This issue is not a proper statement of the law as already instructed within the Charge.

MR. BALDWIN, SR.: It requires us to prove they knew.

MR. GILLAM: I said that earlier, it requires us to prove that they knew about this, and that is not our burden and that is not the law. In fact, it is contrary to what the Court has already put in the Charge.

MR. BALDWIN, SR.: And we further object because the Charge nowhere in no way submits the Plaintiffs' alternative ground of recovery that the product was defective, which was a producing cause.

MR. MAKULSKI: Your Honor, if we look at what they have done for the last three days, including today with the final witness that we put on, "Dow knew, didn't it? Dow knew, didn't it? Look at these documents, 20 uu. Look at these documents, 20 j, 19 a, you knew about this, didn't you, and you didn't do anything different?"

THE COURT: Well, this is the Court's Charge. I am just taking the Plaintiffs' objections to it.

MR. MAKULSKI: Thank you, Your Honor. I am not going to reargue it. We accept the Court's Charge.

THE COURT: All right. Now what I propose to do to let Miss Jordan finish this Charge with the corrections

we have made, and I am going to have the Jury -- call the Jury in, please. I want to try to argue this case tonight and get through with it.

MR. ORTEGO: Are we going to argue it, Judge?

THE COURT: Yes, sir.

MR. ORTEGO: I am ready.

THE COURT: I am going to give thirty minutes to the side.

(Jury in at 5:30 p.m.; open court, all parties present)

THE COURT: Please be seated. Ladies and gentlemen, we have been working on this Charge since we saw you earlier and let you go out. We haven't been resting, by any means. I want to ask you at this point, the Court has another case set for trial beginning in the morning at nine o'clock. As a matter of fact, one of the jurors here is on that case, too -- two, okay.

I don't want to work you and I don't want to create any hardship on anybody, the lawyers or the Jury either. We are typing up the Charge, and we are going to give each side thirty minutes to argue their side of the case; that's an hour. So assuming that we started in another fifteen minutes, that is going to take us pretty close to six thirty, and then I will read the Charge, which will take forty-five minutes at least. And at that point you go into your deliberations.

Now, if you tell me that you do not wish to try to finish up this case tonight, I am inclined to adhere to your wishes. I hope you don't feel that way. When we get down to the time of the thing being completed where you can go to the jury room and start your deliberations, at that time I will excuse the alternate juror, which is the lady on the back seat, and you can go home. But I can't do that until we get to that point.

Now, do y'all want to kind of get together there and talk a minute and tell me what you want to do? If we didn't have that case starting in the morning, we could come back in the morning and not have that problem. But we have got the problem.

MR. JUROR: Well, first off, Your Honor, say if we didn't decide to stay tonight, when would it get completed?

THE COURT: You would have to come back in the morning at nine o'clock, and I would have to postpone the other case until a later time.

(Brief off the record discussion among jurors.)

MR. JUROR: Will we have time to make some phone calls?

THE COURT: Yes, sir.

MR. JUROR: All right, we will stay.

THE COURT: All right. We are going to let you

go out again, and let's come back in here at six o'clock. And that will give the lawyers time to look at what they want to do, and then we will pick this case up and continue and get through with it tonight. We stand in recess until six o'clock.

(Jury out at 5:35 p.m.; open court continues, jury not present)

THE COURT: Everybody be seated.

MR. BALDWIN, SR.: It won't take but --

THE COURT: No, you go ahead. Just everybody else can sit down.

MR. BALDWIN, SR.: I just want the record to be clear that we have submitted a requested Form of Verdict, the general form, those two that we gave the Court.

THE COURT: Yes, I am familiar with that.

MR. BALDWIN, SR.: I didn't know whether those papers had gotten lost in the process.

THE COURT: No, I had them, and I am not going to submit it on that basis. I will submit it in the manner in which I have already talked to the attorneys.

MR. BALDWIN, SR.: I just felt like I needed to have those to preserve the point.

THE COURT: We stand in recess until six o'clock. And we will have thirty minutes to the side to argue this case.

MR. BALDWIN, SR.: Can we cut that up any way we want to?

(Brief off the record discussion with The Court and Counsel.)

THE COURT: I am going to give you forty minutes to the side to argue this case, and I am going to expect the Plaintiff to open his case and not have any long period of time afterwards, after the Defendant has completed.

MR. BALDWIN, SR.: What, about twenty minutes?

THE COURT: I will give the Plaintiff fifteen minutes to close.

MR. BALDWIN, SR.: Could we just have twenty-twenty, Judge?

MR. ORTEGO: No, I don't think that's fair.

MR. BALDWIN, SR.: If we don't use -- in other words, if we don't use the twenty to open, you still don't get but twenty to close.

MR. ORTEGO: No, that's not fair, because the burden of proof is on you.

MR. GILLAM: Sure it is.

MR. BALDWIN, SR.: Because what I plan to do is Scott was going to open and I was going to close, and, you know, I would like to have at least twenty minutes. That's half and half.

MR. ORTEGO: Judge, that's not fair.

MR. BALDWIN, SR.: And if he doesn't go twenty, why then we have lost that.

MR. GILLAM: There is no rule, Your Honor, that says that we --

THE COURT: I am just trying to be fair with everybody concerned. I just don't want to see the Plaintiff end up having a long period of time after the Defendant has completed. That's not customary, and I don't want to change the custom.

MR. BALDWIN, SR.: I don't want to do that.

MR. ORTEGO: It should really just be rebuttal, Mr. Baldwin, because the whole reason why --

THE COURT: Well, I am going to let them decide that. We are not getting into that. All I am going to say is that I will give you ten minutes -- fifteen minutes to close.

MR. ORTEGO: I think that's fair.

THE COURT: We are recessing again.

(Recess at 5:37 p.m., until 6:00 p.m.; open court, jury and all parties present)

THE COURT: Please be seated.

MR. GILLAM: Your Honor, could we approach the bench?

THE COURT: Yes.

(At the bench, out of the hearing presence of the Jury,

with Messrs. Gillam, Ortego and Brown:)

MR. GILLAM: Your Honor, just to perfect the record, Mr. Baldwin has already orally stated the Special Interrogatories that we felt should be applicable in this case; but to perfect the record we thought we needed to submit them to you in writing, and so these, this is my handwriting, but these are the Special Interrogatories that we believe should have been submitted rather than that one that they have submitted.

THE COURT: Have you seen this?

MR. ORTEGO: No, sir.

MR. GILLAM: I just drew it up.

MR. ORTEGO: I'll just object to this, Judge, and I would like to leave it the way it stands.

THE COURT: Overruled, or denied.

(Open court)

THE COURT: We can let the argument proceed, and the parties have the stated time which the Court has already given to them to argue this case. Mr. Baldwin, you may proceed.

MR. BALDWIN, JR.: May it please the Court and ladies and gentlemen of the Jury, and Mr. Ortego. I would like to thank each and every one of you today for your kind attention during the last several days of this trial. I know that Ann Greenhill and James Greenhill appreciate it

very much.

Now, Mr. Greenhill died a very untimely and uncalled for death at the age of thirty-eight, not to mention the miserable and emotional way that he died. He left a widow and a young boy. James Greenhill loved his family, and he loved the outdoors. All of this, along with his life, has been taken away from him, and that's why we are here today.

And there are two parts to this case: liability, was Dow liable for his death? And damages, what damage they are responsible for as a result of his death.

Let's talk a little bit about liability. In laymen's language, we must only prove by a preponderance of the evidence, that's the slightest tipping of the scales, that Dow Chemical failed to give a proper warning to Mr. Greenhill and users of that product, and that that failure to warn him produced his injury and his death.

Now, there's no question that Dow did not warn of any of the problems associated with their product. You heard Dr. Teitelbaum. He sat right there for a morning and listed articles upon articles from back in 1959 when they knew they were having problems that were associated with the use of 2,4-D. Dow has yet to come along and adequately warn anybody of those problems that were listed on that board since 1959 to present date. The literature

says 2,4-D can cause cancer and that it will kill you. And they have never warned anybody about that. Dow's own literature states that it's highly toxic, the Krumel report that Mr. Watson has never even seen, and he worked there for thirty something years. They didn't warn anybody about that.

Now it's uncontradicted, I believe, that Dow Chemical has not brought you one stick of evidence to prove that that warning was adequate, not one stick of evidence, not one document, not one person from that stand.

MR. ORTEGO: Your Honor, I am going to object. We don't have to prove anything, and I think that is a misquote of the law.

THE COURT: Let the argument proceed.

MR. BALDWIN, JR.: Before I was interrupted, it's going to be uncontradicted that Dow failed to bring you one stick of evidence to prove that their warning was adequate, not from the stand, not from the literature, not from anywhere.

Now, Mr. Greenhill died of cancer from his exposure to 2,4-D. No matter what label you want to give it, he died of cancer from exposure to 2,4-D. Dr. Teitelbaum testified about the Hardell Study. The Hardell Study says: there is an association between 2,4-D and cancer. The whole report, which the Defendants rely upon,

comes right along and says: there is an association between 2,4-D and cancer. The Krumel Report, which I have talked about, Dow's own report, says there's impurities in 2,4-D, and that this is a highly toxic chemical.

Now, Dow has known about these problems, but they failed to do anything about it, and people, like Mr. Greenhill, have to suffer from their decisions not to tell people.

You remember the deposition of a Mr. Tipton. He was a hack and squirter. He used Tordon 101. We went out to Oregon and we talked to him about it. Do you remember what he said? "It seems to me that the chemical companies put out a product without giving the users enough information about the possible harmful consequences of using those products." Mr. Tipton is a layman that used Tordon 101 just like Mr. Greenhill. He also stated -- the question was asked: "Now there has been some discussion about labels here today, and I have got a question for you as a person who has read those labels, and as a layman, and as a layman are all supposed to read the labels. Do you feel you were given adequate information as to the uses and given fair warning from the labels you read?" Answer: "No."

I think that Dr. Hajdu came along -- Mr. Ortego made the statement that just because someone says it's so doesn't necessarily mean it's so. He made that statement in opening argument. Dr. Hajdu comes in here today. He

says: "It doesn't matter who wrote it, whether it was Dr. Hardell or Dr. Hoar, or whoever, that there is no credible evidence as to the association between 2,4-D and cancer," as far as his opinion is concerned. The American Institute of Cancer says there is. Now, I don't know how you received Dr. Hajdu. He was a very impressive man, but I believe that the only way that he would accept any kind of theory or study is if it was his own.

Now, I want to talk to you a little bit about this failure to warn. Mr. Ortego has not questioned the warning that we put up on the bulletin board, the caution. He's not gotten up and introduced one piece of evidence that contradicts it, or even says that it's right. He says the EPA has to control those. Well, the EPA standards are the minimum standards. They give the EPA what they want on the warning, and if the EPA thinks it's all right then they approve it. Now, Mr. Ortego could have put more on that warning to warn people about the hazards of 2,4-D if he and Dow had chose to do so. Did they? No, they did not. They failed to do so.

I feel, on behalf of Mrs. Greenhill, that when you are submitted the Charge and you are asked the question, "Did Dow fail to warn Mr. Greenhill and users of the potential hazards and dangers of its products," the answer should be "yes." The evidence is overwhelming. When the

question comes along: "And was that failure to warn a producing cause of his injury and death? Yes, it was."

And I would like to talk to you a little bit about damages.

THE COURT: Are you keeping track of your time? You are keeping track of your own time?

MR. BALDWIN, JR.: Pretty much so.

THE COURT: All right.

MR. BALDWIN, JR.: We all saw the video of James Greenhill. We heard about his pain that he lived with for many years. We heard him talk about his dreams that he had for him and for his family. We heard him talk about the love that he had for his family. We also heard him talk about the fact that he knew that he was ultimately going to die. He was a dying man.

Now, Mr. Greenhill had to go through stages of chemotherapy and treatments for his cancer. They were miserable. There is no way in this world that you can give that man enough money for what he had to go through as a result of being exposed to 2,4-D, and that 2,4-D getting in his system and causing the problems that he had that ultimately caused his death. There is not enough money.

He stated that he loved the outdoors. He never got to get out much. He went to town every now and then

to the grocery store with his wife, but he stayed in the car. He was almost a helpless cripple there. He could not do anything.

Now when we talk about damages, we are going to be asking, as we said on opening statement, for a substantial amount, and the Judge is going to charge you with what you are allowed to give the Greenhill family for the death of James Greenhill. I would like to go through some of those with you.

You will consider the necessary medical, nursing and hospital care received by Mr. Greenhill for treatment of his injuries sustained by him as a result of the occurrence in question. That's one thing you get to consider is all the medical bills that we have been able to find and prove up. The reasonable amount of expenses for funeral and burial of James Edward Greenhill. That should not be a problem. That amount was $2,298. You will be allowed to consider the conscious pain and mental anguish suffered by James Greenhill for his death as a result of the occurrence in question. You heard Mr. Greenhill. You heard him talk about vomiting consistently day in and day out, and when he wasn't vomiting he was dry-heaving, and he was in pain all the time. He suffered, ladies and gentlemen. He suffered a miserable death.

THE COURT: You have used fifteen minutes.

MR. BALDWIN, JR.: And we would ask that for his lost wages, pain and suffering, the loss of society and companionship for his wife and his son that you return a verdict in the amount of $3 million. And I think if Mr. Ortego doesn't agree with that amount, I think he should get up here and tell you. Thank you very much.

MR. ORTEGO: If it please the Court, Plaintiffs' Counsel, and ladies and gentlemen of the Jury. On behalf of everyone, I'd like to thank you, too. It's late, but we discussed how important your function is, and we appreciate you staying.

What you are about to do is become the judges of the facts of this case. And this isn't a mysterious procedure. I guess maybe sometime when you heard some of the testimony, if I could have read your minds maybe you were saying to yourselves "What's going on?" You are capable of judging this case. This is a common sense decision, and it's like any other decision -- important decision -- that you make in your lifetime. Objectively evaluate the facts, the evidence, and in this particular case also, the lack of evidence. And let's put sympathy aside. It is a terrible thing. And I asked you during voir dire, you knew I was concerned about it, and you should have felt terrible watching the tape. But that's not an issue here -- hard, cold facts.

What has the Plaintiff proven in this case, really, by a preponderance of the evidence? The Plaintiff has proven that James Greenhill died and suffered. We have never contested that. What he hasn't proven is that we are responsible, because we are not. We are not responsible for what happened. It is terrible, but we aren't responsible.

Now, during the trial I asked you not to be tricked. I have asked you to be careful. In some ways, please don't fall for smoke screens throughout the trial. A lot of times things could be read out of context. Sometimes you can get a particular line you want out of a document out of context.

Let's talk about a couple of things, and I am not going to comment on everything that happened here. It would be ridiculous, but let's talk about some of the things -- that California report. Dr. Teitelbaum said it was never adopted. No other manufacturer adopted it. It's been out there for seven years. This is something that's been going on for a long time. This product has been here for a long time, thoroughly investigated, never accepted. Why? Because it wasn't necessary.

He hasn't proven the product to be defective, unless he wants you to speculate and start guessing what's wrong with it. It's been approved by the Environmental

Protection Agency for years. It's been out there for years. Those are responsible people. If it was causing this epidemic of cancer, it wouldn't be out there, and there would be plenty of literature to support that.

If it's true what the Plaintiffs say, why isn't there an epidemic of Hodgkin's disease or cancer from all these millions of pounds that are around? You heard Dr. Hajdu say, "There is no epidemic."

One other thing -- two other things I would like to touch on -- xanthones, chloroxanthones, whatever you want to call them. No real proof that they are in the product. And even so, the product is what the product is. The 2,4-D that's being used out there is the same thing that is being made and it's going out there. There is no epidemic. There is no epidemic of Hodgkin's disease.

And I think kind of interesting with Dr. Teitelbaum, I said to him, "Well, if I picked out this document, basically a needle out of a haystack of thousands of documents, xanthones, is there any study that says it causes cancer?" "No, no." "Well, give me a study. Tell me where it causes cancer or causes illnesses." "No."

Then when I asked him, I said, "When you produced your list, someone is using it for bonding teeth." "Oh, that's not chloroxanthones." So I brought the document up to him and he read a bunch of chloroxanthones, and I said,

Dr. Teitelbaum, they are using it on peoples' teeth." Be careful. The product is what it is, it's out there, it's being used, people are getting exposed to the product as a whole.

And I am not going to go over all of these studies. I am not going to touch the list, but as you saw what was happening, everything. When things weren't going well, we picked out studies about everything. And those studies are very interesting, all open to the public. Everybody knows about it. They are not even Dow studies, and they are not accepted. What I think you could simply say is here there are thousands of articles and thousands of things written about 2,4-D and other products, and, no, it is not credible. They have not been accepted. The EPA knows about it, manufacturers know about it, the world knows about it, because they are not credible; they are not reliable.

The sole issue in this case is did they prove by a preponderance of the evidence that 2,4-D causes cancer or Hodgkin's disease, in this case? The answer is no, no. You are going to have to evaluate the testimony here. How are you going to do this?

Well, two things that happened in the case is Dr. Teitelbaum came in and Dr. Hajdu came in. Who do you believe? Think about that. I thought of a way that maybe would be a good way to test on who you want to believe.

God forbid, but one of us is sick, a family member is sick, which doctor would we go to to find out what was wrong with us, find what caused it, and who we'd want to treat us? I think the answer is very simple, it is Dr. Hajdu.

Let's talk a little about the only witness that came in here for Plaintiffs who testified that in his opinion this 2,4-D caused it. Let's talk about the man a little. It's a man who makes 50 percent of his living in medical-legal work. It's a man who is not Board certified in any field that's recognized by the American Medical Association. What does he say to you, really? He's got this one-hit theory: it's one molecule at the right time. And keep in mind when he rendered his opinion, I asked him and he didn't even know how much James Greenhill was exposed to. "It's one molecule at the right place at the right time." It's very convenient, because you pick whatever you went to testify to and it's got to be that one molecule. You pick what you want to hear. And what's today? What's the chemical de jure? What's the product de jure? Well, pick it, because it's one molecule anytime. It fits in perfectly. He has no idea when Mr. Greenhill's cancer started. He can't tell us that.

And then he talked about other things. According to his one-hit theory, not Dr. Hajdu's one-hit theory, one

hit theory is one molecule at the right place at the right time. And maybe it got redundant, but what about the cigarette smoke? What about the celery? Beer? I went for my lunch analogy -- this whole list of things? And why did I do it? Well, the reason I asked Dr. Teitelbaum is if it takes one molecule, according to your theory, can you tell us what percentage was caused by the beer? It only takes one; it doesn't matter how much. Do you know whether that right one hit at the right time? That grilled steak could have hit at the right time? What about the celery, the mushrooms, the peanuts? Could it hit at the right time? No.

But what did he do? A couple of things: he can't give you the percentage, which caused what, who is responsible, but one thing he is always very particular about, "Your 2,4-D did it, Mr. Ortego. Your 2,4-D did it, Mr. Ortego."

Well, Dr. Teitelbaum, this man was a landscaper prior to working in the Forest Service in 1973. He must have been exposed to molecules of carcinogens, particularly, I am sure they used weed killers. "No, it had to be your 2,4-D, Mr. Ortego." Because then that's his whole theory, he could have been exposed to someone else's product. "Your 2,4-D." That's what he did. Ask yourself, really is he an advocate for a particular cause? And what is his cause?

I submit to you that his cause is his medical-legal practice where he gains 50 percent of his income. And I ask you not to be fooled. Look at the evidence.

Let's talk about Dr. Hajdu, and let's compare him. You heard his qualifications. I am not going to read you all the qualifications again, but he has spent his life and devoted his entire life to the study, research and diagnosis of cancer. That's what he has devoted his life to. That's what his practice is. He takes care of people that are sick with cancer, in a special cancer hospital. That's what he is all about. That's how he makes his living.

And what does he say? I talked a little about it in opening: Hodgkin's disease has been around as long as man. It hits men in that bimodal group. I don't remember the ages exactly, but it was like 15 to 32 or whatever, and hits them a little later on in age. It's that group that gets hit. And he says he has Hodgkin's disease. And you probably wonder why you know all of a sudden Dr. Teitelbam can't -- it's either Hodgkin's disease or non-Hodgkin's. Well, that's sort of a shifting position you can take. If I can find one paper that says non-Hodgkin's lymphoma might be caused by 2,4-D, maybe that will help me more. Makes me bring in more papers or whatever things I can find. The man died of Hodgkin's disease, and Dr. Hajdu said to you, "Mr. Greenhill fit right in the group that gets it." It's

a silent disease, Dr. Hajdu told you. You can have it for a long time and you don't even know you have it. But in 1978 when he was having that back problem, that disease was years in the development, because he was already in Stage 4. His back and bones, unfortunately, were rotting out already, and he had that disease a long time before he ever went to the Forest Service.

And what causes Hodgkin's disease? Dr. Hajdu says it's going to be a virus. Two years from now it's going to be a virus. And his diagnosis is in agreement with the one person here who wasn't called as an expert witness, Dr. Butler, the dean of pathology from Texas, M. D. Anderson. He's not being paid by anybody. And what does he say? "It's Hodgkin's disease." And when questioned by Mr. Baldwin during the deposition to try to shake him. "No." "Will you disagree on this diagnosis, reasonable pathologists?" "No."

What's the causes of Hodgkin's disease? Dr. Butler said, "No one can tell you the cause. We believe it's a virus." Not 2,4-D, it's a virus.

Dr. Teitelbaum wants you to speculate. The real doctors in this case tell you "no." And Dr. Hajdu told you, "I have reviewed all the literature." The man is all over the world going to symposiums on cancer, fellowships in the National Institute of Cancer Society, a consultant

all over the country. He is speaking everywhere, on top of all of the theories. If you mentioned a name to him on cross-examination : well, my friend, this doctor, who just got the Nobel Prize. He is on top of his field because he loves what he does. I have reviewed all of the literature, and there is no evidence to support it.

And then it gets sort of like chasing a ghost, well, where are the studies that say the negative? You prove the negative. And what does Dr. Hajdu say, "Well, there's no study to disprove air." And then do you want me to say the same thing -- Dr. Hajdu said unequivocally, "I don't care if he had Hodgkin's disease or non-Hodgkin's lymphoma, but he had Hodgkin's disease. There is no credible science. I have interpreted it for you. I have looked at it. There is no doubt. These Hardell papers, I am not the only one -- widely criticized; never replicated."

He talks about Dr. Hoar very briefly. He unequivocally told you, "No, that is my opinion. The man died of Hodgkin's disease, and, no, 2,4-D contributed in no way whatsoever."

Now let's try to step back from this a little. We talk about the scientists. Let's talk a little common sense. Why can you go to the supermarket, and 2,4-D is the issue in this case and only 2,4-D, why can you go to the supermarket and still buy a product containing 2,4-D, right here

in Marshall, right near the produce department -- all over the place? Because it doesn't cause cancer. It's not bad. It doesn't do what Dr. Teitelbaum says it does. Use your common sense. You don't need to know complex chemistry to decide this case. What you need is your common sense to think about it. We have all probably used it. It's all in the food we eat.

I do emphasize believable scientists, please stick with that. Doctors, chemists, toxicologists all around this country have determined that it is safe to sell this product, and we can all use it. A nine year old child can buy 2,4-D. Yes, picloram has some restricted uses. Mr. Watson was very honest with you. But you can get 2,4-D -- your daughter, your child. My daughter can go buy 2,4-D. The product is not unreasonably dangerous. It is not defective. It doesn't cause cancer, and that's what the man died of. There's no evidence of that. And manufacturers of 2,4-D don't have to warn about these things on their labels. And look at all the other manufacturers that came in, do they warn about it? Why don't you have to warn about it? Because they don't need to warn about something that doesn't exist. If it doesn't cause it, why should I have to put it on the label?

When I spoke to you during jury selection, we all promised a couple of things. You promised that you would

hold the Plaintiff to his burden of proof. You promised that you wouldn't be overtaken by sympathy, that you would fairly and objectively give us a fair shot, and I ask you to keep those promises and keep that in mind.

Now, I have about concluded what I have to say. Mr. Baldwin is going to get another opportunity to speak to you. I am not. I want you to just please promise me that if Mr. Baldwin says something, anticipate what I would have said if I had the opportunity to speak to you. And I tell you again, Plaintiff has not proved his case. Plaintiff cannot prove this case, because it's not so. And I ask you to return a verdict on behalf of us, the Defendant. Thank you.

MR. BALDWIN, SR.: Your Honor, may I get set up a little bit, please?

THE COURT: Yes.

MR. BALDWIN, SR.: May it please the Court -- and, Your Honor, would you let me know when I have three minutes left?

Ladies and gentlemen of the Jury, the afternoon is late, I don't have much time, and I know you are tired. On behalf of Mrs. Greenhill and her son, Jim, I want to thank you for the attention you have given this case. You have been a very attentive, hard-working jury.

I am going to jump right into what we are here

about, and it's just like I told you Monday morning, the Plaintiff, in just plain old cornbread language, has got to do one thing and one thing only, and it is to prove by a preponderance of the evidence that the Defendant failed to give a proper warning of the hazards of this product. I told you that Monday. I am telling you that again today. You shouldn't be caught in a smoke screen by the Defendant. They came in here, and it reminds me of "my dog didn't bite you" defense. When they get sued -- the man gets sued for his dog biting me, he said, "Well, my dog didn't bite you." When you prove that his dog bit him, he says, "Well, it wasn't my dog." Well, you prove it was his dog, he says, "Well, he didn't bite you." And you prove he bit you, and he says, "Well, it didn't hurt." And that's the way the defense has been in this case.

Mr. Ortego started out on Monday morning. He said it again the very last thing he said this afternoon when he objected to something that Scott said, "We don't have to prove anything." And that is the attitude of Dow Chemical in this case, and that is the attitude of Dow Chemical's lawyers in this case. You don't have to -- we don't have to prove anything except was this warning inadequate, and was that a producing cause of this man's death?

Oh, they start out, we've got to prove it's Hodgkin's disease. And the Judge is going to tell you what

the law is in a moment. You are not going to hear Hodgkin's disease mentioned one time, so don't get off on that tangent.

Now, what is the evidence? Have we discharged our burden? Not only have we discharged our burden; it's overwhelming. It's uncontradicted. You heard the layman that Scott read you the testimony. Mr. Tipton said, "These chemical companies put those products out there, and they don't give us people in the field enough information to know how to use them."

And here is what cinches it, this chart right in front of you. This is an independent study done for the State of California by a company, a reputable company. And what does it say? "The present labels are inadequate." Now that should foreclose the question of labels in this case. That's what the Court is going to ask you: were the labels adequate? And that's not me. That's not some expert. That's an independent laboratory that made that suggestion, finding. And what has Dow done? Nothing. They have not changed that label to this very day.

Now I want to talk to you a little bit about lymphomas. You heard Dr. Hajdu come in here from Hungary, and he knows everything. And to hear he and Mr. Ortego tell it, doesn't anything happen this side of New York. There is at least eight or ten pathologists that examined these materials at one time or another. And you

have got a report right in front of you here by the Denver Clinic that said: "None of us feel that this process presents Hodgkin's disease." That's what it says at the bottom line. And isn't it strange to have eight or ten pathologists that look at that speciman of Mr. Greenhill, and it's more than passingly strange to me that two of them claim they saw a Reed-Sternberg cell. The other eight or ten there is not a single one of them that saw a Reed-Sternberg cell, and even Dr. Hajdu said that you've got to have a Reed-Sternberg cell before you can make the diagnosis. Do you remember that? And Dr. Butler said the very same thing. They are above everybody else. But you know, he asked who would you rather have to treat you? I am going to tell you, I'd rather have a practicing physician like that guy down there in the Denver Clinic that treats people and sees them every day with hands-on treatment than somebody like Dr. Hajdu who sits up there and talks in platitudes about what it ought to be, and how everybody else has made a mistake.

And, oh, he is hired in another case for Dow to clear up a misunderstanding, and he's hired in this case to clear up a misunderstanding. I stand corrected -- he didn't know who he was testifying for. Who hired you, Dr. Hajdu? Well, this lawyer over here hired me, Dr. Pierce. He tried to pass him off. Well, didn't Dow hire

you? Well, I don't know. Here is a man who came all the way down here from New York City, $32.00 (sic) a day, that don't know who hired him. Now, do you believe that? And what I want to know is where was he -- where was Dr. Hajdu when all of these publications were being published telling about the dangers of Dow starting in -- I mean, of 2,4-D starting in 1959 in JAMA, J-A-M-A. Every doctor in the United States has one of those on his desk right today, going all the way down here to 1982, and he hasn't questioned a single, solitary one of those documents, and neither has Mr. Ortego with all of his resources up there in New York. He hasn't brought a single witness in here to tell you that any of that is wrong, not one. And the reason is, he can't.

He wanted to cause a smoke screen, and said, "Oh, well it's Hodgkin's disease or it isn't. Well, I am going to get off that. Whether it is or it isn't, I am not going to get in an argument about that. I don't think it was, but you heard Dr. Teitelbaum. Dr. Teitelbaum, I don't care what you call it, non-Hodgkin's lymphoma, Hodgkin's disease or whatever, did the exposure to the 2,4-D cause this man's death? Answer: yes. And that's all the Plaintiff has got to prove. The Plaintiff has met his burden.

So now I want to talk to you a little bit about the Krumel Report. To me, I've been practicing law a long time, that is the most serious piece of corporate

irresponsibility that I believe I have ever seen. They found impurities in their product going back to 1977, the time Mr. Greenhill was working with it, impurities that Dr. Teitelbaum says are the most toxic known to man, and the kind of impurities that are the most likely to cause cancer. They ran tests on them and they confirmed that. They told their own lab men that it must not touch the skin. You must wear protective clothing. Did they warn it must not touch the skin? Did they warn you must wear protective clothing? Did they warn it might cause cancer? Did they warn it would cause serious neurological problems? Did they warn it might kill? No. And if they had done that, Mr. Greenhill would have had the choice, and I venture to say he would be here today.

So, your verdict should be for the Plaintiff. You have got two issues you must answer yes, and then you will come to the damage issue.

I think that your damages in this case ought to be enough to say to Dow Chemical Company, we don't like this kind of conduct. We don't like you coming to Marshall and conducting yourself the way you have.

MR. ORTEGO: Judge, I am going to object. That is an improper damage. There are no such damages in this case.

MR. BALDWIN, SR.: We are asking for full, adequate damages in this case.

THE COURT: I overrule the objection. Mr. Baldwin, stay within the limits of the proper argument on damages.

MR. BALDWIN, SR.: Certainly I am. Now, I am suggesting to you that it should be $3 million, and let me just tell you why. I just want to take this last few minutes to talk to you about damages, kind of like stump talk, one neighbor to another. Three million dollars sounds like a lot of money, but think about it. You all have had fathers. Most of you have had husbands or wives. Here is a man capable of earning -- I don't think there is any question had he lived he would have earned anywhere from a half a million to a million dollars over the score of his life, taking into consideration his raises and job advancements.

You have heard talk about care, nurture and guidance, loss of services. What is it worth to have a husband around the house? What's it worth for the wife to be at home at night by herself? Did you hear that noise? And nobody to say, "What do you think that is?" Nobody to say, "Go see what that is."

What's it worth to have a husband to counsel, to help discipline the children, to help make decisions about buying groceries, the budget, the car?

You know you were given a unique opportunity. You

and each of you had the opportunity to see through the magic of video this man and get to know him a little bit, this man that was dying, this man that knew he was dying, and to face it like a man up front. He talked about it to his wife. He talked about it to his boy. They discussed it. And can you imagine the misery he went through from '79 to '86, five -- seven years? He would have a twenty-eight day treatment of chemotherapy, and vomited on the order of every five to eight minutes, eight hours a day; tremendous pain, agony, suffering. He even thought about taking his life, and I wonder what you would have done?

But he was a good man. He was a simple kind of a man. He had dreams like all of us. His dreams weren't extraordinary. He wanted to have a log cabin, and they almost had a log cabin. The neighbors helped build it to a liveable condition. He lamented the fact he couldn't chop wood, do the chores, bring the wood in. He fretted about the fact that his son didn't understand that he was dying, and wanted more information. He really couldn't accept it.

And you know James is a plaintiff in this case, his boy. He is right on, not on top of, but almost on top of what I call "fool's hill." And he needs a daddy. You know there is a time in every boy's life when his daddy is going to sit down with him, I had to do it, and say, "Have

you ever stopped to think what you are going to do with your life? Do you know what you want to do with your life? Have you given that any thought?" That's parental guidance. My daddy did it to me. James won't have that opportunity.

He will need his daddy's steady shoulder to lean on when he starts out in the uncertain days of life. He will need to know that if he gets in trouble he can go to his daddy and he will help him out. He will need to go to him and say, "Daddy, what should I do under these circumstances?" And that is a real element and item of damages, and each of you said Monday that you could return a verdict for that type damages.

And each of you said Monday that you could return a verdict for that type damages. I wish -- would if you could just punch a button and the whole nightmare would be over and he would appear, but you can't. You can only do the next best thing and that's award money damages, and say to Dow Chemical Company we are going to require you to respond in full damages.

And you know, it told me something about this man, that video, just watching him. Is $3 million too much for the loss of a father, for the suffering he went through, for what that widow has lost? Think about that. I wonder if it's enough. And I say to you that you should return a verdict in that amount. The Defendant has had all this week

and this afternoon to suggest to you what they think are proper damages and they did not. Why? Because they know that what I am suggesting is a reasonable amount.

And you know, I will sum up by saying that I know you are going to do what is right in this case, something you can be proud of. And you and I both had a little bit of a unique opportunity to get to know this man through the video, and I don't know about you, but I think my life is better for it and I think each of your lives will be better for it.

And I will close by saying that do you remember his last words? "I love my wife and I love my children, and I hope God will forgive me." Well, I know that wherever he is God has forgiven him. Thank you very much.

THE COURT: (to Bailiff) You can move this.

(Bailiff removing charts from easel)

THE COURT: Do you have something, sir?

MR. ORTEGO: No, Judge, I thought you wanted us for something.

THE COURT: No.

MR. ORTEGO: Judge --

(At the bench, out of the hearing presence of the Jury, with Mr. Ortego and The Court)

MR. ORTEGO: Judge, could we just take all the exhibits down, too?

THE COURT: Pardon?

MR. ORTEGO: Could we just take all of the demonstrative evidence down? There is another piece right in front of the Jury, before the Charge?

THE COURT: Where?

MR. ORTEGO: Oh, I was wrong. I am sorry, Judge.

(Open court)

THE COURT: Ladies and gentlemen, you have heard the evidence presented by the different parties and the argument of their attorneys in support of their positions. I will now give you the Charge, or instructions, which will explain the law that you will follow to decide this case and reach a fair and impartial verdict. You will not have a copy of this Charge with you, so I ask that you pay close attention to what I say.

At the beginning of this trial, I gave you some general instructions and definitions which I will not repeat now again, but I ask that you keep those instructions in mind as you listen to this Charge and as you consider the case in the jury room.

During your deliberations, you are not to be governed by sympathy or prejudice. The court and the parties expect you to carefully and impartially consider all of the evidence, follow the law as I will explain it to you, and reach a just verdict. You and I are not here

to take sides. We are judges, and our job is to remain neutral.

As I told you at the outset, it requires both the jury and the court to try this case; it's the court's responsibility to preside over the trial, rule on the admissibility of evidence, and insure that the applicable law is followed. Now you will be bound in your deliberations by the law as I am about to instruct you. You will not question whether or not it is a good law or bad law, nor will you deliberate upon the correctness of the law. You must accept the law as defined to you by the Court, and you will be bound by it during your deliberations.

On the other hand, it is the responsibility of the Jury to determine what facts have been established by this case, or in this case. It is your sole and exclusive province to weigh all of the evidence which has been introduced, pass upon the credibility of the witnesses who testified, and decide what facts you feel worthy of your belief. It is your duty to decide the facts based on the evidence which has been admitted in this court. The evidence consists of the sworn testimony of the witnesses, all exhibits which have been received in evidence, and all facts which have been admitted or stipulated to by the parties. Now where facts are stipulated, of course, you then should regard that fact as conclusively proved.

Regardless of any opinion you may have as to what the law is or ought to be, it would be a violation of your sworn duty to base a verdict upon any view of the law other than that given in the instructions of the court, just as it would also be a violation of your sworn duty, as judges of the facts, to base a verdict upon anything other than the evidence in this case.

In deciding the facts of this case you must not be swayed by bias, prejudice or favor to any party. Our system of law does not permit jurors to be governed by prejudice, sympathy or public opinion. But the parties and the public expect that you will carefully and impartially consider all of the evidence in this case, follow the law as stated by the Court, and reach a just verdict regardless of the consequences.

This case should be considered and decided by you as an action between persons of equal standing in this community, and holding the same or similar stations in life. Now a corporation is entitled to the same fair trial at your hands as is a private individual. The law is no respecter of persons, and all persons, including corporations, stand equal before the law and are to be dealt with as equals in a court of justice.

As stated earlier to you, it is your duty to determine the facts, and in so doing you must consider only

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the evidence I have admitted in this case. Now the term "evidence" consists of the sworn testimony of the witnesses and the exhibits admitted in the record.

Remember now that any statements, objections or arguments made by the lawyers are not evidence in this case. The function of the lawyers is to point out those things that are most significant or most helpful to their side, and in so doing, to call your attention to certain facts or inferences that might otherwise escape your notice.

In the final analysis, however, it is your own recollection and interpretation of the evidence that controls. What the lawyers say is not binding upon you.

While you should consider only the evidence elicited in this case, you are permitted to draw such reasonable inferences from the testimony and exhibits as you feel are justified in light of common experience. In other words, you may make deductions and reach conclusions which reason and common sense lead you to draw from the facts which have been established by the testimony and the evidence.

Now, I have said that you must consider all of the evidence. Now that does not mean, however, that you must accept all of the evidence as true or accurate.

It is your privilege as the jury to determine the credibility and weight to be given to the testimony

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of these witnesses. By credible testimony, we simply mean such testimony as you deem to be worthy of your belief.

In weighing the testimony of the witnesses, you may consider the circumstances under which the witness has testified, their appearance and demeanor on the stand, their candor and fairness, or the lack thereof, the logic or reasonableness of their testimony, and their interest or lack of interest in the litigation.

Since in every lawsuit there are usually conflicts in the testimony, it is your duty to reconcile these conflicts, and you may attach such weight to, or completely disregard if you choose, the testimony of any witness. Or, you may accept such parts of the testimony you believe to be true and reject that part which you believe to be untrue. In this connection, you are not bound to decide any issue of fact in accordance with the number of witnesses that either side might present as to any particular issue.

The Court will also inform you that there are two types of evidence, these being circumstantial and direct evidence. Direct evidence is such that goes to the proof or disproof of any particular fact, such as the testimony of any eyewitness, or something of that nature. Circumstantial evidence is the proof of a chain of circumstances which logically point to the existence or non-existence of certain facts. A fact may be established by circumstantial evidence

when it may be fairly and reasonably inferred from all the facts proven in the case. Now as a general rule, the law makes no distinction or preference between direct evidence and circumstantial evidence, but simply requires the jury to decide the facts in accordance with a preponderance of all the evidence in the case, both direct and circumstantial. And preponderance of the evidence means the greater weight and degree of credible, believable testimony.

You have heard expressed in this case the opinions or conclusions of several witnesses who are referred to as expert witnesses. Any witness who, by education and experience, has become learned in some art, science, profession or calling, may state an opinion as to any relevant or material matter, and also state the reasons for that opinion. You should consider each expert opinion received in evidence in this case and give it such weight as you may think it deserves. If you should decide the opinion of an expert witness is not based upon sufficient education or experience, or if you should conclude that the reasons given in support of the opinion are not sound, you may reject the opinion entirely. You are not bound by the testimony of any expert and you have the privilege of weighing their testimony just as you would that of any other witness.

As I said earlier, the weight of the evidence is

not necessarily determined by the number of witnesses testifying as to the existence or non-existence of any fact. You may find that the testimony of a smaller number of witnesses as to any fact is more credible than that testimony of a larger number of witnesses to the contrary.

A witness may be discredited or impeached by contradictory evidence, by a showing that he testified falsely concerning a material matter, or by evidence that at some other time the witness has said or done something, or has failed to say or do something, which is inconsistent with the witness' present testimony. If you believe that any witness has been so impeached, then it is your exclusive province to give the testimony of that witness such credibility or weight, if any, as you may think it may deserve.

Now any evidence to which an objection was sustained by the Court must be disregarded and not considered in your deliberations; and I said that at the outset. Likewise, anything which you may have seen or heard outside of the courtroom touching on the merits of this case is not evidence and must not be discussed, and should be entirely disregarded in your deliberations; and I said that at the outset. However, you are permitted to draw reasonable inferences that you feel to be justified in the line of your experience from the facts which have been proved in the

courtroom.

And in a civil action such as this, the plaintiff has the burden of proving every essential element of her claim by a preponderance of the evidence. As I said earlier, the preponderance of the evidence is the greater weight and degree of credible testimony. In the absence of such proof, she cannot prevail as to her claim. A preponderance of the evidence also means such evidence as, when considered and compared with that opposed to it, has more convincing force and produces in your minds a belief that what is sought to be proved is more likely true than not. In other words, to establish a claim by a preponderance of the evidence merely means to prove that the claim is more likely so than not so. A mere possibility is not enough. If, upon any question or essential element in the Plaintiff's case, the evidence appears to be equally balanced, the matter remains one of speculation or conjecture, or if you cannot say upon which side it weighs heavier, you must resolve the question against the Plaintiff and in favor of the Defendant.

In determining whether any fact in issue has been proved by a preponderance of the evidence, the greater weight and degree of credible testimony, you may consider the testimony of all of the witnesses, regardless of who may have called them, and all of the exhibits received in evidence, regardless of who may have produced those exhibits.

If the proof should fail to establish any essential element of Plaintiff's claim by a preponderance of the evidence, you should find for the Defendant as to that claim.

Now I will give you the contentions of the parties. This suit was instituted by the Plaintiff, Ann I. Greenhill, for personal injuries sustained by her deceased husband, James Edward Greenhill, which resulted in his death, sustained as a result of being exposed to the chemical 2,4-D manufactured and placed in the stream of commerce by the Defendant herein.

The Plaintiff's suit against this Defendant is based on what is commonly referred to as the theory of products libability. Generally, the Plaintiff contends that the chemical 2,4-D to which James Edward Greenhill was exposed was manufactured and sold by the Defendant and that it was defective. The Plaintiff further contends that the defect rendered the chemical 2,4-D unreasonably dangerous to users and consumers. The Plaintiff contends that James Edward Greenhill's injuries occurred as a result of his being required to work around and in proximity to the chemical 2,4-D manufactured and sold by the Defendant. The Plaintiff contends that such product was defective and unreasonably dangerous in that it is known to be injurious to one's health. The Plaintiff further contends that said product was defective and unreasonably dangerous because it

failed to provide an adequate warning to persons situated as the Plaintiff. The Plaintiff further contends that such defect as described herein was a producing cause of his resulting personal injuries and physical damage.

As in every case, it is the responsibility of the court to charge or instruct the jury as to the requirements of the applicable law governing the theories of the respective parties to the case. In this connection, I will now give you some additional definitions and charges as to the applicable law, and you are instructed to bear these definitions and instructions in mind during the course of your deliberations.

Under the applicable law, one engaged in the business of manufacturing and selling products, such as the Defendant in this case, who sell products in a defective condition, which makes the product unreasonably dangerous to users such as James Edward Greenhill, is subject to liability for the physical harm to a user.

Under the principle of products liability law the Defendant in this case is liable for injuries caused by its defective products even though it exercised all possible care in the preparation and sale of same and even though said defendant had no knowledge of the existence of the defective condition at the time of the sale. The law imputes to a manufacturer knowledge of the harmful

character of his product whether he actually knows of it or not. He is presumed to know of the harmful characteristics of that which he makes. Therefore, a product is dangerously defective if it is so harmful to persons that a reasonable prudent manufacturer with this knowledge would not have placed it on the market. The liability of the Defendant attaches without regard to the question of negligence. It is no defense in connection with Plaintiff's products liability claim that the Defendant was not negligent. Furthermore, under the circumstances, the Defendant is liable to the Plaintiff even though James Edward Greenhill did not buy the product or enter into any contractual relationship with the Defendant.

The Plaintiff is required to prove by a preponderance of the evidence that a defect in the product existed at the time it left the control of the Defendant, that the defect made the product unreasonably dangerous, and that the defect was a producing cause of the injuries and resulting death sustained by James Edward Greenhill.

You are further instructed that a product is defective if it exposes a user, such as James Edward Greenhill, to an unreasonable risk of harm when used for the purpose for which it was intended. A manufacturer or seller, such as the Defendant, must anticipate the environment in which its product will be used and the

intended use standard imposes upon the Defendant the duty to guard against reasonably foreseeable risks of harm that are engendered by the intended use of this product. The fact that a user, such as James Edward Greenhill, does not use the product in the exact manner contemplated by the Defendant will not preclude his recovery under the theory of strict liability where the product was defective when supplied. Now a product may be rendered defective through two ways: a defect as a result of its manufacture or material; two, a failure to warn properly of a dangerous characteristic of the product.

In connection with the Plaintiff's allegation that the product was defective by reason of the Defendant's failure to furnish a proper warning, the Plaintiff must show by a preponderance of the evidence that the Defendant has failed to furnish a proper warning of the potential dangers of said product in connection with James Edward Greenhill's use and that such failure was a producing cause of James Edward Greenhill's resulting injuries and death. For strict liability to accrue for failure to warn, it is not essential that the product be defective in the sense that it was not properly manufactured. The product may be perfectly manufactured and meet every requirement for its designed utility and still be rendered unreasonably dangerous through failure to warn of its dangerous

characteristics.

You are instructed, finally, that the term "producing cause" means an efficient, exciting, or contributing cause which in a natural sequence produces the injury or damages complained of. There may be more than one producing cause. By the term "sole producing cause" is meant the only cause, and there can only be one sole producing cause.

Now the Plaintiff's first claim is brought under the law of strict liability, which basically means that one who designs, manufactures, sells or distributes a produce has a duty to provide a product that is not unreasonably dangerous and is free from defects when used for its intended purpose and in a manner that can be reasonably foreseen.

A manufacturer is obligated by law not to place into the stream of commerce a product which is unreasonably dangerous to the ultimate user. A manufacturer is not liable under that theory, however, for harm caused by a product which is delivered in a condition that is safe for reasonably foreseeable use and handling.

The fact that the Plaintiff claims that the Defendant's product was in a defective condition unreasonably dangerous to the user or consumer is not evidence to that effect. These are merely the Plaintiff's allegations,

which the Defendant denies.

A product is unreasonably dangerous to the user when it has a propensity or tendency for causing physical harm beyond that which would be contemplated by the ordinary user, having knowledge of the product's characteristics common to the foreseeable class of persons who would normally use the product. Put another way, a product is unreasonably dangerous, and thus defective under the law of strict liability, if its utility, or usefulness, is outweighed by the magnitude of the danger, if one exists, that it could cause cancer.

An unreasonably dangerous product may also be defined as one that is dangerous to an extent beyond that which would be contemplated by the ordinary user of the product with ordinary knowledge common to the community as to the product's characteristics.

Now the Plaintiff has the burden of proving that the product was in a defective condition, that the condition rendered the product unreasonably dangerous to the user and that the product was intended to and did reach the user without substantial change in the condition in which it was manufactured and sold.

In order to prevail on her claim that the product, 2,4-D, manufactured and sold by the Defendant and used by the decedent was defective as well as unreasonably

dangerous, the Plaintiff must establish the following elements by a preponderance of the evidence, the greater weight and degree of credible testimony:

1) the Defendant knew or by the application of reasonably developed human skill and foresight should have known at the time it manufactured and sold the product used by Mr. Greenhill that exposure to the product could cause cancer;

2) that the Defendant failed to provide adequate warnings, or failed to provide adequate instructions on what precautions should be observed when handling the product when it left the Defendant's possession;

3) That such failure on the part of the Defendant rendered the product unreasonably dangerous; and

4) that the product was a producing cause of Mr. Greenhill's death.

Now the question of whether the product is unreasonably dangerous can be determined only by taking into consideration the surrounding circumstances and the state of the art at the time the product was manufactured and sold, and determining therefrom whether a reasonable manufacturer would have so manufactured and sold the product had he known of the alleged risk involved. The state of the art requirement means that you cannot judge Defendant's product with the luxury of hindsight, but instead you must

measure it in light of the scientific and the medical knowledge in existence at the time Defendant manufactured and sold the product which the decedent used.

The Court also instructs you that compliance with Government safety standards and regulations constitutes evidence that a product is not defective or unreasonably dangerous.

Now strict liability is not absolute liability and the manufacturer is under no duty to produce a product which is accident-proof. Further, the manufacturer is not to be considered an insurer or guarantor against all harm caused to a user by its product. The manner of injury may be so fortuitous and the chances of injury occurring so remote that it is reasonable to sell the product despite the danger. Put another way, a product is not unreasonably dangerous and defective under the law of strict liability, if its utility, or usefulness, outweighs the magnitude of the danger, if any, which is inherent in its introduction into commerce. Such an article is not dangerously defective in design even if it inflicted injury.

I am getting to the end. Where a danger or potential danger is not generally known and recognized at a particular point in time, the manufacturer at that point in time does not have a duty to warn the ultimate user. A seller of a product only has a duty to warn of

those dangers that are reasonably foreseeable and of which the user cannot be expected to be aware.

Now when a warning is actually given, the seller may reasonably assume that it will be read and heeded and where necessary to insure the safety of others, passed on. A product bearing such a warning which is safe for use if it is followed is not in defective condition, nor is it unreasonably dangerous, and there can be no recovery under the theory of strict liabilty.

Now in order to prevail on the theory of strict liability as described above by the Court, the Plaintiff must prove by a preponderance of the evidence that the product, 2,4-D, was a producing cause of Mr. Greenhill's injury. In the present case, a cause is a producing cause if it directly and in a natural and continuing sequence produced such injury or disease, so that it can reasonably be said that, except for the defective condition, the injury or disease complained of would not have occurred. Producing cause may also be defined as an efficient, exciting or contributing cause, which, in a natural sequence, produces Mr. Greenhill's injuries or damages complained of, if any.

If the evidence indicates that there are two or more possible causes for the Plaintiff's injury, and that at least one of the possible causes is one for which the Defendant would not be responsible, then the Plaintiff must

prove by a preponderance of the evidence that the alleged injuries were the result of the cause for which the Defendant would be liable. If the evidence leaves it just as probable that these injuries were a result of the cause for which Defendant is not responsible, then the Plaintiff cannot recover against the Defendant.

You are further instructed that in the event that there are two causes to the injury or death of Mr. Greenhill and that one of such causes was that of the Defendant and the other cause was that of a third person, the Plaintiff need only prove that the Defendant's cause was a producing cause of the event, and this cause may concur with any other cause to produce the event.

It will be necessary in your deliberations to determine first whether the Plaintiff has established by a preponderance of the evidence that the Defendant is liable to the Plaintiff under the theory of strict liability by reason of the sale and manufacture of a defective and unreasonably dangerous product and failure to warn, and secondly, whether such defective product was a producing cause of the injury or damage to James Edward Greenhill.

Finally, you will consider the amount of damages which the Plaintiff has sustained, if any.

In connection with the contentions of the Plaintiff, you are hereby charged and instructed as follows:

If you find from a preponderance of the evidence that the chemical, 2,4-D manufactured by the Defendant herein was defective so as to render same unreasonably dangerous for its intended use and that James Edward Greenhill was exposed to such product and such exposure was a producing cause of James Edward Greenhill's injuries and subsequent death, then your verdict will be for the Plaintiff and against the Defendant and by your verdict you will so state and you will assess damages for the Plaintiff in accordance with the legal instructions hereinafter given to you.

You are further instructed that if you find from a preponderance of the evidence that the Defendant failed to properly warn James Edward Greenhill of the hazards in connection with the use of the chemical 2,4-D and that such failure was a producing cause of James Edward Greenhill's injuries and subsequent death, you will find for the Plaintiff and against the Defendant and by your verdict you shall so state. You are instructed that if you find from a preponderance of the evidence that the product in question is unreasonably dangerous and that the risk of harm to persons situated as the Plaintiff is foreseeable, a warning is required in connection with the use of such products which contains the following elements:

1) such warnings must be such as to catch the attention of the user. You are instructed in this regard that a warning to a supervisor of the Plaintiff is not sufficient.

2) the warning must be comprehensive and it must identify the specific hazard.

3) the warning must instruct how to avoid the risk.

4) the intensity of the warning must be consummate with the magnitude of the risk involved.

In connection with this duty to warn, you are further instructed that all manufacturers are held to the knowledge and skill of an expert. They are obliged to keep abreast of any scientific discovery and are presumed to know the result of such advances. Therefore, if you find under these instructions that the Defendant failed to furnish a warning in connection with the use of its product as described above and that such failure was a producing cause of James Edward Greenhill's injuries and subsequent death, then your verdict will be for the Plaintiff and against the Defendant.

I am now going to instruct you on the issue of damages. Just because I am so instructing you on this issue does not in any way mean that you should award damages to the Plaintiff.

If you reach a verdict in favor of the Plaintiff in this case, then it will be your duty to assess damages against any such Defendant that you have found reasonable. In determining the amount of damages, if any, you shall take into consideration the nature and extent of James Edward Greenhill's injuries and death, and may award damages which:

a) the necessary medical, nursing and hospital care received by James Greenhill for the treatment of injuries sustained by him as a result of the occurrence in question.

b) the reasonable amount of expenses for funeral and burial for James Edward Greenhill.

c) the conscious physical pain, if any, and mental anguish, if any, suffered by James Edward Greenhill before his death as a result of the occurrence in question.

d) the emotional pain, torment and suffering that Ann Greenhill would, in reasonable probability, experience from the wrongful death of James Edward Greenhill.

e) the pecuniary loss to the spouse and child of James Edward Greenhill as a result of this injury and death.

You are instructed that pecuniary loss is defined as care, maintenance, support, services, advice, counsel and reasonable contributions of pecuniary value that the

spouse and children of James Edward Greenhill would, in reasonable probability, have received from James Edward Greenhill.

f) the loss of companionship and society of James Edward Greenhill to his spouse and child.

You are instructed that loss of companionship and society is defined as the positive benefits flowing from the love, comfort, companionship, and society that the spouse and child of James Edward Greenhill would, in reasonable probability, experience if James Edward Greenhill had lived.

You may award such sum of money, if any, if paid now in cash, that you find from a preponderance of the evidence would fairly and reasonably compensate the Plaintiff for his injuries which were produced by the defect, if any, of the product in question.

Ladies and gentlemen, now in fairness to all the parties, you are instructed that in regard to the records presented to the witness, I think it was Tuesday, of an individual other than Mr. Greenhill, I think it was Mr. Moss, if I remember correctly, there was no misconduct by any party or witness and all proper procedures were followed by the attorneys and the witness at the deposition of the witness as well as during the proceedings here in court. So disabuse your mind of that altogether.

Now these instructions are given to you as a whole, and you are not to single out one instruction alone as stating the law, but must consider the instructions as a whole. You have heard all of the evidence in this case and you have heard the argument of counsel. The Court has given you its instructions as to the applicable law in this case. In a few moments you will retire to the jury room, select one of your members to act as foreperson, and begin performing the function for which you have been chosen and for which you have been impanelled, in accordance with the oath which you took as jurors. You will remember at the beginning of this trial, the Court admonished you not to discuss the case with each other until it had been submitted to you. Now it is time for you to begin your discussions, and you certainly may express an opinion from the evidence that you have heard and use any reasonable means to persuade other members of the jury to your convictions and to your honest opinion.

Now your verdict must represent the considered judgement of each juror, unanimous. In order to return a verdict, it is necessary that each juror agree. As I say, your verdict must be a unanimous verdict of each of the people on this jury.

Now it is your duty as jurors to consult with one another and to deliberate with a view to reaching an agreement if you can do so without violence to your

to communicate with the court, please reduce your message or question to writing signed by the foreperson, and pass the note to the marshal who will bring it to my attention. I will then respond as promptly as possible, either in writing or by having you returned to the courtroom so that I can address you orally. Now in regard to any message or question that you might send to me, never state or specify your numerical division at that time.

The Verdict Form that will be presented to you consists of three questions:

Special Interrogatory No. 1: Did the Plaintiff prove by a preponderance of the evidence that Defendant's product, 2,4-D, was a producing cause of Decedent's injury and death? Answer "Yes" or "No," and a place to sign it one way or the other.

If you have answered "yes" to Special Interrogatory No. 1, then answer Special Interrogatory No. 2; otherwise, sign the verdict form and return it to the Court.

Special Interrogatory No. 2: Did Plaintiff prove by a preponderance of the evidence that Defendant knew or by the application of reasonably developed human skill and foresight should have known at the time Defendant manufactured and sold the product, 2,4-D, which the Decedent used that the product was defective and unreasonably dangerous by reason of Defendant's failure to warn that such product

caused Decedent's injury and death? Answer "Yes" or "No., and a place for you to sign "Yes" or "No.

If you have answered "yes" to Special Interrogatory No. 2, that I just read, then answer Special Interrogatory No. 3; otherwise, sign the verdict form and return it to the Court.

Your last Special Interrogatory: Special Interrogatory No. 3: What sum of money, if paid now in cash, do you find from a preponderance of the evidence would fairly and reasonably compensate the Plaintiff for the injuries to and death of James Edward Greenhill resulting from his exposure to the chemical of 2,4-D? Answer in dollars and cents, if any, or none. A place for you to date it and your foreperson to sign it.

Now, Mrs. Blow, you have been very diligent here during this entire proceeding, but you are the alternate juror, and all we need in the jury room is six people. So, I am going to thank you on behalf of all of the attorneys and everyone connected with this case. We appreciate your being with us, but you are excused at this time.

I will give the Verdict Form to the deputy marshal and you now will retire and start the consideration of your verdict.

(Alternate juror exits courtroom)

THE COURT: Now, if you want all of the exhibits,

MR. BALDWIN, JR.: Well, if we send the tape we ought to send the machine.

MR. BALDWIN, SR.: We can just send the tape and the machine with it.

THE COURT: Everything that's introduced into evidence they have requested. The foreman is Fred McCoart, the man on the front row. Does anybody want to see this?

MR. BALDWIN, SR.: No, sir.

MR. ORTEGO: No, sir.

MR. BALDWIN, SR.: I don't know how to communicate with them to tell them if they want to see the video that the TV is available.

THE COURT: Call the Jury in a minute. I am going to ask them if they want the video of the decedent.

MR. JONES: Judge, could we have a second to go through? These were supposed to be redacted and we are trying to check them.

THE COURT: Well, check them all before they go in, but I want to ask them about this video.

MR. BALDWIN, SR.: Just make it known to them if they do want it it's available.

THE COURT: Of course it is.

MR. ORTEGO: Judge, I will object to the video, just for the record, because I think it would be undue influence. It's been stenographically put forth.

THE COURT: Well, since it is an exhibit and they have asked for the exhibits, and under the rule they are entitled to all exhibits, I think they are entitled to it. I overrule the objection.

MR. BALDWIN, SR.: It would be error not to send them all.

MR. GILLAM: What is the objection, Your Honor?

MR. BROWN: Be undue --

(Jury entering courtroom at 7:44 p.m.; open court)

THE COURT: Ladies and gentlemen, -- sit down. Everybody be seated. We got your note and we are getting all of the exhibits together that you have requested. I want to ask you whether or not you included in this request the videotape of Mr. Greenhill? Do you wish that?

MR. FOREMAN: No, sir.

THE COURT: All right. You wish all of the other?

MR. FOREMAN: Yes, sir.

THE COURT: Okay. We are getting it together, and if you want that it's available for you. You may go back and we will have this for you in just a couple of minutes.

MR. FOREMAN: Thank you.

(Jury out at 7:45, deliberations continuing)

(Exhibits to Jury at 8:04 p.m.)

(Jury Note at 8:12 p.m.: "Please send a copy of all warning labels.")

(Off the record discussion with all Counsel and The Court regarding note)

(Open court, 8:22 p.m.; jury not present)

THE COURT: All right, here is the note that I am giving them: "You have requested a copy of all warning labels. You are advised that the warning label is one of the exhibits being numbered 20 y. If you do not have this exhibit, so advise the Court."

Does that meet everybody's approval?

MR. ORTEGO: Yes.

MR. BALDWIN, SR.: Yes.

(Recess at 8:23 p.m.; note taken to Jury)

(Jury Note at 8:30 p.m.; open court, jury not present)

THE COURT: A note from the Jury to the Court: "20 y is not here. Send the big board with the eighteen reports and the board with the warning label, please. Signed Fred McCoart."

Is the big board in evidence? It's not, is it?

MR. ORTEGO: No, it's not in evidence. None of them are in.

THE COURT: And the board with the warning label, that's not in evidence, is it?

MR. ORTEGO: No.

THE COURT: Where is the 20 y?

MR. ORTEGO: Right here.

MR. BALDWIN, JR.: Right here.

THE COURT: "To the Jury: We are sending you 20 y, Exhibit 20 y."

MR. ORTEGO: Judge, can we make sure that 20 y was put into evidence?

THE COURT: It was.

MRS. WILLIAMS (Docket Clerk): It was.

THE COURT: My notes show it was in and Nancy shows it on hers. "I cannot send you the big board with the eighteen reports and the board with the warning label because these matters were not placed into evidence, were not entered into evidence."

MR. BALDWIN, SR.: But rather were trial aids. I'd like to have some comment, Judge --

MR. ORTEGO: No, I don't think we should describe it, no.

MR. BALDWIN, SR.: -- where they don't think they don't represent evidence.

MR. ORTEGO: Well, no.

MR. BALDWIN, SR.: Just say "we can't send them."

MR. ORTEGO: Because they are not in evidence.

MR. BALDWIN, SR.: No.

MR. ORTEGO: No, you have got to let them know why,

they weren't introduced.

MR. GILLAM: No, no. What you are trying to do is say that that stuff, you know, wasn't for any use.

MR. ORTEGO: Oh, no.

MR. GILLAM: Yes, you are. You know, just say "we can't send you the boards."

MISS JORDAN (secretary to Court): (Reading) "We are sending you Exhibit 20 y. I cannot send you the big board with the eighteen reports and the board with the warning label because these matters were not introduced into evidence."

THE COURT: "Were not introduced into evidence."

MR. BALDWIN, SR.: Could not be.

MR. ORTEGO: No, no, no.

MR. BALDWIN, SR.: Well, I would have offered them if we could.

MR. ORTEGO: No.

MR. BALDWIN, SR.: I think the place to do it is to put the period after "I cannot send you these exhibits."

MR. ORTEGO: No, because --

MR. GILLAM: What is the use in describing it?

MR. ORTEGO: Because they weren't admitted into evidence. They asked for all the exhibits in evidence, and now they have asked for more and these are not in evidence. They are only entitled to the exhibits in evidence.

MR. BALDWIN, SR.: Well, they are in evidence.

THE COURT: This is off the record.

(Brief off the record discussion)

THE COURT: All right, put it this way: "I am sending you 20 y as requested. The other matters requested cannot be furnished to you."

MR. BALDWIN, SR.: I think that's the way to do it.

(Recess at 8:30 p.m.; note taken to jury)

(11:05 p.m.; open court, jury not present)

THE COURT: The Jury went out about seven forty-five, and it's eleven o'clock now, five after. We haven't had any contact with them, what, for a couple of hours. I am just wondering if we ought to see if they want to work later on or come back in the morning. I am more or less at whatever is the pleasure of the attorneys.

MR. BALDWIN, SR.: I would suggest we leave it to them, see what they say.

MR. ORTEGO: I think so too. I think if they get tired they will let us know.

THE COURT: You mean just let them go ahead and continue to work without any --

MR. ORTEGO: Yes. Unless they come out. And I think they will let us know if they are angry and want to get out.

THE COURT: Why don't we let it ride then until, say, eleven forty-five. That will be what, four hours?

MR. ORTEGO: Four hours.

THE COURT: And see what's happening between now and then. If we don't hear something by then, we will ask them to come up and ask whether or not they want to continue their deliberations or come back at nine o'clock in the morning.

MR. ORTEGO: I think that's fair.

THE COURT: Because we have got some people on this jury that live seventy-five miles from Marshall, assuming they go home. I don't know whether they will or not. All right, we will wait until eleven forty-five and then see what happens at that time.

(Recess at 11:08 p.m.; jury continuing deliberations)

(Jury note at 11:26 p.m.; verdict has been reached)

(Open court; jury and all parties present at 11:29 p.m.)

THE COURT: Be seated. Mr. Foreman, have you reached a verdict?

MR. FOREMAN: Yes, Your Honor.

THE COURT: Just give it to the security officer.

(Mr. Foreman tendering verdict)

THE COURT: Is this Verdict the unanimous verdict of all of the Jury?

(All jurors nodding affirmatively)

THE COURT: The answer to Special Interrogatory No. 1: "Yes." The answer to Special Interrogatory No. 2: "Yes." Answer to Special Interrogatory No. 3: "$1,500,000." Dated 12-2-87, signed Fred J. McCoart, foreman, foreperson.

Is that the verdict of the entire six people on this Jury, the unanimous verdict of all of you?

(Jurors nodding affirmatively)

THE COURT: Do any of the attorneys wish that the Jury be polled?

MR. ORTEGO: No, Your Honor.

THE COURT: I accept the Verdict. I wish to thank you for your very diligent time that you have given to this case. I know it's been a hard job for everybody. You are excused. Now, I know there are two -- Mr. McCoart and Mr. Wright, you are on the jury tomorrow, and I hate to tell you this but you have to be back here about nine o'clock. I can see the smile on your face to greet that. Thank you again, and we stand in recess.

(Jury excused at 11:33 p.m.)

(Open court, 11:34 p.m.; all parties present)

MR. ORTEGO: Your Honor, the Defendant The Dow Chemical Company moves for a judgement notwithstanding the verdict. The evidence in this case -- there was no credible evidence to support Plaintiffs' contention in this matter on strict liability. As a matter of fact, the testimony of

Dr. Teitelbaum, as indicated earlier, did not support a verdict in this particular case, but rather was speculation and not legally sufficient as a matter of law. It was not enough evidence to go to the jury, and a judgement notwithstanding the verdict should be granted to Dow.

THE COURT: Overruled. Are you going to submit something in writing in addition to this?

MR. ORTEGO: Yes, Your Honor.

THE COURT: All right. The motion will be overruled. Anything else before we adjourn for the evening?

MR. ORTEGO: No, Your Honor.

THE COURT: We stand adjourned.

(Proceedings concluded at 11:35 p.m.)

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

REPORTER'S CERTIFICATE

I certify that the foregoing is a correct transcript from the record of proceedings in the above-entiled matter.

Libby Crawford

ANN E. (LIBBY) CRAWFORD
OFFICIAL COURT REPORTER

January 15, 1988

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