

# **Exhibit 16**

1 UNITED STATES DISTRICT COURT  
2 NORTHERN DISTRICT OF CALIFORNIA  
3

4 IN RE: ROUNDUP PRODUCTS )  
 )  
 5 LIABILITY LITIGATION, )  
 )  
 6 ) MDL No. 2741  
 )  
 7 ) Case No.  
 )  
 8 ) 16-md-02741-VC  
 )  
 9 \_\_\_\_\_ )  
 )  
 10 This Document Relates To: )  
 )  
 11 ALL ACTIONS )  
 \_\_\_\_\_ )

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 14  
 15 DEPOSITION OF DENNIS WEISENBURGER, M.D.  
 16 MONDAY, SEPTEMBER 11, 2017  
 17 9:13 A.M.  
 18  
 19  
 20  
 21  
 22

23 REPORTED BY: KATHERINE FERGUSON  
 24 RPR CSR NO. 12332  
 25 JOB NO. 128476

Page 2

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4  
5 September 11, 2017  
6 9:13 a.m.  
7  
8  
9 Deposition of DENNIS WEISENBURGER, M.D., held at  
10 Courtyard by Marriott, 700 Huntington Drive, Monrovia,  
11 California, before Katherine Ferguson, Certified  
12 Shorthand Reporter.  
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7 By Ms. Forgie 256  
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9 EXHIBITS  
10 NO. PAGE DESCRIPTION  
11 Exhibit 16-1 11 Retention agreement  
12 Exhibit 16-2 12 Bills  
13 Exhibit 16-3 12 Expert report  
14 Exhibit 16-4 29 Notice of Deposition  
15 Exhibit 16-5 29 Objections and responses to  
16 Monsanto's Schedule A  
17 Exhibit 16-6 46 Cox article in Journal of  
18 Pesticide Reform  
19 Exhibit 16-7 58 Article, The Environment and  
20 Disease: Association or  
21 Causation  
22 Exhibit 16-8 78 Study - Etiologic  
23 Heterogeneity among  
24 Non-Hodgkin Lymphoma Subtypes  
25

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1 Exhibit 16-9 86 Cancer Epidemiology,  
2 Biomarkers & Prevention  
3 Exhibit 16-10 98 Hardell 2002 study  
4 Exhibit 16-11 108 De Roos 2003 study  
5 Exhibit 16-12 124 Slide show by Dr. Pahwa  
6 Exhibit 16-13 137 September 21, 2015 Draft  
7 publication on glyphosate  
8 used in risk of NHL  
9 Exhibit 16-14 151 8/26/15 e-mail  
10 Exhibit 16-15 153 8/27/15 e-mail  
11 Exhibit 16-16 154 11/27/14 e-mail  
12 Exhibit 16-17 161 8/22/16 e-mail  
13 Exhibit 16-18 165 5/5/16 e-mail  
14 Exhibit 16-19 167 9/10/17 e-mail  
15 Exhibit 16-20 181 Article, Internation Journal  
16 of Cancer  
17 Exhibit 16-21 186 Article, Environmental Health  
18 Perspectives  
19 Exhibit 16-22 195 Article, Environmental Health  
20 Perspectives  
21 Exhibit 16-23 202 Draft, Lymphoma risk and  
22 pesticide use in the  
23 agricultural health study  
24 Exhibit 16-24 232 Article, Genetics and  
25 Molecular Biology

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1 Exhibit 16-25 248 Article, Rev Environmental  
2 Health  
3 Exhibit 16-26 252 Article, Journal of  
4 Toxicology and Environmental  
5 Health  
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1 APPEARANCES:  
 2  
 3 FOR PLAINTIFF:  
 4 ANDRUS WAGSTAFF  
 5 BY: KATHRYN FORGIE, ESQ.  
 6 7171 West Alaska Drive  
 7 Lakewood, Colorado 80226  
 8  
 9 FOR MONSANTO:  
 10 HOLLINGSWORTH  
 11 BY: KIRBY GRIFFIS, ESQ.  
 12 BY: ELYSE SHIMADA, ESQ.  
 13 1350 I Street NW  
 14 Washington, DC 20005  
 15 ALSO PRESENT:  
 16 Rosa Trembour  
 17 Pearl Robertson (on speakerphone)  
 18 David Wool (on speakerphone)  
 19  
 20  
 21  
 22  
 23  
 24  
 25

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1 MONROVIA, CALIFORNIA; MONDAY, SEPTEMBER 11, 2017  
 2 9:13 A.M.  
 3  
 4 THE VIDEOGRAPHER: Good morning. This is  
 5 the start of tape labeled Number 1 in the videotaped  
 6 deposition of Dr. Dennis Weisenburger in the matter  
 7 of Roundup Products Liability Litigation. This case  
 8 is before the United States District Court, the  
 9 Northern District of California, MDL number 2741 and  
 10 case number 16-MD-02741-VC.  
 11 This deposition is being held at Courtyard  
 12 by Marriott at 17 -- 770 Huntington Drive in  
 13 Monrovia, California. Today's date is September  
 14 11th, 2017. The time is approximately 9:12 a.m.  
 15 My name is Scott McNair from TSG Reporting  
 16 Incorporated. I'm the legal video specialist. The  
 17 court reporter today is Kathy Ferguson, also in  
 18 association with TSG Reporting.  
 19 Counsel, please identify yourselves for the  
 20 record.  
 21 MS. FORGIE: Kathryn Forgie for the  
 22 plaintiffs.  
 23 MS. TREMBOUR: Rosa Trembour for the  
 24 plaintiffs.  
 25 MR. GRIFFIS: Kirby Griffis, from

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1 Hollingsworth, LLP, for Monsanto.  
 2 MS. SHIMADA: Elyse Shimada, from  
 3 Hollingsworth, LLP, for Monsanto.  
 4 THE VIDEOGRAPHER: Thank you. Will the  
 5 court reporter please swear in the witness.  
 6  
 7 DENNIS WEISENBURGER, M.D.,  
 8 called as a witness by and on behalf of the Defendants,  
 9 and having been first duly sworn by the Certified  
 10 Shorthand Reporter, was examined and testified as  
 11 follows:  
 12  
 13 EXAMINATION  
 14 BY MR. GRIFFIS:  
 15 Q Good morning, sir. We've just met,  
 16 correct?  
 17 A Correct.  
 18 Q Would you state your name, please?  
 19 A Dennis Weisenburger.  
 20 Q How many times have you had your deposition  
 21 taken before?  
 22 A Dozens of times.  
 23 Q How many times have you given testimony in  
 24 court outside of the context of depositions?  
 25 A Three times.

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1 Q How many expert reports do you believe  
 2 you've created over the course of your career?  
 3 A 30 or so.  
 4 Q How many times do you think you've heard a  
 5 lawyer make an objection?  
 6 A To what?  
 7 Q A question. Five hundred, two hundred?  
 8 MS. FORGIE: Objection.  
 9 A Many times.  
 10 MR. GRIFFIS: The objection?  
 11 MS. FORGIE: Yeah, I don't know if you're  
 12 talking about in the context of a deposition or in  
 13 general.  
 14 BY MR. GRIFFIS:  
 15 Q You understand, sir, from your extensive  
 16 deposing experience, if you don't understand  
 17 something in a question that I ask, you're free to  
 18 ask for clarification from me, correct?  
 19 A Yes.  
 20 Q And if you don't know some fact that you  
 21 need to know in order to answer a question of mine,  
 22 you know that you're free to say so, correct?  
 23 A Yes.  
 24 Q You've been through this drill before?  
 25 A Yes.

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1 Q When -- what did you do to prepare for this  
 2 deposition?  
 3 A To prepare for the deposition?  
 4 Q Yes.  
 5 A I reviewed, again, all of the materials  
 6 that I had accumulated on glyphosate and glyphosate  
 7 based formulations, including reports from the IARC,  
 8 EPA, EES -- FAA -- EFSA, whatever, the European Group and all  
 9 the underlying epidemiologic data, the animal  
 10 toxicology data, the mechanistic data.  
 11 referenced in all of those more global papers as well  
 12 as I did my own literature search multiple times to  
 13 find anything that -- in addition or anything more  
 14 recent.  
 15 Q And when did you do that preparation you  
 16 just described?  
 17 A The preparation for the deposition?  
 18 Q Yes.  
 19 A Over the last week.  
 20 Q How many times did you meet with lawyers to  
 21 get ready for the deposition?  
 22 A Twice.  
 23 Q When was that?  
 24 A Yesterday and this morning.  
 25 Q For how long a period each time?

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1 A Yesterday, it was for about four and a half  
 2 hours and today it was about half an hour.  
 3 Q You understand, sir, that if Ms. Forgie  
 4 makes an objection and does not direct you not to  
 5 answer the question, then you're to give me the best  
 6 answer that you can to the best of your ability when  
 7 she's done objecting, correct?  
 8 A Yes.  
 9 MR. GRIFFIS: I'm going to mark several  
 10 exhibits, sir.  
 11 (Discussion off record.)  
 12 (Exhibit 16-1, retention agreement, was  
 13 marked for identification.)  
 14 MS. FORGIE: Maybe what we can do, if  
 15 you're going to mark a bunch of exhibits, we can get  
 16 the phone plugged in and mark exhibits and take a  
 17 break.  
 18 MR. GRIFFIS: I'm going to mark three, but  
 19 we can pause it and --  
 20 MS. FORGIE: So why don't we take a short  
 21 pause.  
 22 THE VIDEOGRAPHER: We're off the record at  
 23 9:16 a.m.  
 24 (Brief recess.)  
 25 THE VIDEOGRAPHER: We are back on the

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1 record at 9:28 a.m.  
 2 BY MR. GRIFFIS:  
 3 Q Sir, we've marked as Exhibit 1 a retention  
 4 agreement between you and the firm Andrus Wagstaff;  
 5 is that correct?  
 6 A Yes.  
 7 Q And the date on that agreement is signed by  
 8 Andrus Wagstaff on August 11th, 2015 and by you on  
 9 August 12th, 2015, correct?  
 10 A Yes.  
 11 Q You are to be paid a rate of \$500 per hour  
 12 for your work and you got a \$5000 retainer to start,  
 13 right?  
 14 A Yes.  
 15 (Exhibit 16-2, 16-3, were marked for  
 16 identification.)  
 17 BY MR. GRIFFIS:  
 18 Q Exhibit 2 to this deposition are the bills  
 19 that you produced a few days ago, sir. And Exhibit  
 20 3, which we'll get to later, is a copy of your expert  
 21 report.  
 22 Did I identify those correctly?  
 23 A That's correct.  
 24 MS. FORGIE: Let me see them for a second.  
 25 BY MR. GRIFFIS:

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1 Q In 2015, you received \$13,200 for your  
 2 work?  
 3 A Yes, I think it's a retainer.  
 4 Q In 2016, you received \$21,500?  
 5 A Yes.  
 6 Q 2017 through April, through your work, work  
 7 through April 19th I guess -- do I have that end date  
 8 right?  
 9 A I don't have that here.  
 10 Q Turn to the back of the page.  
 11 A Oh. Correct.  
 12 Q Through April 19th, you were paid \$68,750,  
 13 right?  
 14 A That's correct.  
 15 Q For a grand total, per math, of \$103,450.  
 16 How many hours have you worked on this  
 17 litigation since April 19th of this year?  
 18 A Over a hundred hours.  
 19 Q Sir, you are not a board certified  
 20 epidemiologist, right?  
 21 A I'm not a board certified epidemiologist,  
 22 but I have extensive experience in epidemiology.  
 23 Q You don't consider yourself to be a  
 24 statistician, right?  
 25 A No, I'm not a statistician.

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1 Q You don't have any formal training in  
 2 epidemiology except for a three-week course you took  
 3 once in Boston, right?  
 4 MS. FORGIE: Objection.  
 5 A That's true, although I've read a lot of  
 6 epidemiology textbooks and articles and have  
 7 interacted extensively with epidemiologists during  
 8 the course of my career.  
 9 BY MR. GRIFFIS:  
 10 Q Yes, sir. It's correct that the only  
 11 formal training in epidemiology you had was the  
 12 three-week course you took once in Boston, right?  
 13 MS. FORGIE: Objection, asked and answered.  
 14 A That's correct.  
 15 BY MR. GRIFFIS:  
 16 Q And you've had no formal training after  
 17 medical school in the field of biostatistics except  
 18 for that three-week course you took once in Boston,  
 19 right?  
 20 A I believe that's correct.  
 21 Q And you're not an expert on the design of  
 22 epidemiology studies; is that fair to say?  
 23 A No, but when I've done studies, I've always  
 24 worked with epidemiologists who assisted in the  
 25 design.

Page 15

1 Q Yes, sir. When you collaborate with people  
 2 and your name is certainly on a number of  
 3 epidemiology studies, when you collaborate with  
 4 people on an epidemiology study, the design of the  
 5 study is left to others, correct?  
 6 MS. FORGIE: Objection.  
 7 A Yes.  
 8 BY MR. GRIFFIS:  
 9 Q And you wouldn't be an expert either on the  
 10 statistical analysis of the data collected in the  
 11 epidemiology study, right?  
 12 A That's correct, although I understand how  
 13 to interpret the data.  
 14 Q Yes, sir. The choice of what statistical  
 15 tools to use and what tools to use to control for  
 16 possible biases in the data and interpreting the  
 17 data, those discussions would be made by others,  
 18 correct?  
 19 MS. FORGIE: Objection.  
 20 A That's correct.  
 21 BY MR. GRIFFIS:  
 22 Q You would not be an expert on identifying  
 23 the medical confounders for epidemiology studies,  
 24 meaning saying this, this and this are the  
 25 confounders in this particular set of data; is that

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1 correct?  
 2 A I have general knowledge about what the  
 3 risk factors are for Non-Hodgkin's Lymphoma, so I  
 4 would say they would be the same ones that would be  
 5 found in any epidemiological study that have been  
 6 found.  
 7 Q Well, here's what I mean, sir. Some  
 8 medical issues can be confounders in a particular set  
 9 of data and not in a different set of data, correct?  
 10 A Yes.  
 11 Q So it would be someone else who would be  
 12 the expert on figuring out which particular issues  
 13 are confounders in a particular set of data by  
 14 applying statistical tools to the data, correct?  
 15 A Yes.  
 16 MS. FORGIE: Objection, asked and answered.  
 17 A Yes, but I often was involved in those  
 18 decisions.  
 19 BY MR. GRIFFIS:  
 20 Q And you would be involved primarily with  
 21 identifying which things need to be looked for as  
 22 potential confounders, right?  
 23 A Yes.  
 24 Q You don't have formal training in animal  
 25 pathology, correct?

Page 17

1 A No, but I've done -- human pathology and  
 2 animal pathology is very similar and I've done quite  
 3 a bit of animal pathology in my career.  
 4 Q As far as formal training, you don't have  
 5 formal training in animal pathology, right?  
 6 MS. FORGIE: Objection, asked and answered.  
 7 You can answer it again.  
 8 A No, but as I said, human pathology and  
 9 animal pathology is very similar. The diseases are  
 10 similar.  
 11 BY MR. GRIFFIS:  
 12 Q There is such a thing as training in animal  
 13 pathology and training in human pathology and people  
 14 do specialize in one or the other or both, correct?  
 15 A Veterinarians specialize in animal  
 16 pathology.  
 17 Q And people who perform animal studies  
 18 extensively as part of their career also specialize  
 19 in animal pathology frequently, correct?  
 20 MS. FORGIE: Objection.  
 21 A Sometimes they do, sometimes they enlist  
 22 animal pathologists or even human pathologists to  
 23 assist in those studies.  
 24 BY MR. GRIFFIS:  
 25 Q You don't have board certification of any

Page 18

1 kind in toxicology, right?

2 A I do not.

3 Q Or any formal training in toxicology,

4 right?

5 MS. FORGIE: Objection.

6 A As part of my training in clinical

7 pathology, we also are trained in toxicology. And I

8 have extensive experience in the practical knowledge

9 of toxicology and its application. I've done lots of

10 reading on my own, textbook reading, article reading,

11 I've done my own animal toxicology studies and I've

12 participated in animal carcinogenesis tests as a

13 pathologist and as a consultant.

14 BY MR. GRIFFIS:

15 Q Is your answer that although you don't have

16 formal training in toxicology, you've got a lot of

17 experience in the area?

18 A Yes.

19 MS. FORGIE: Objection, asked and answered,

20 you can answer.

21 BY MR. GRIFFIS:

22 Q So the answer is yes as to no formal

23 training in toxicology?

24 MS. FORGIE: Objection. You can answer

25 again.

Page 19

1 A I have practical training in toxicology and

2 some formal training as part of my clinical pathology

3 training.

4 Q When was that?

5 A When was that?

6 Q Yes, sir.

7 A That was during my pathology residency at

8 the University of Iowa. I have to look on my CV to

9 see exactly when it was, but it was during my

10 pathology residency we trained in. Where we did our

11 training in pathology, part of it was clinical

12 pathology and part of that was toxicology.

13 Q No formal training after medical school in

14 the science of risk assessment, correct?

15 MS. FORGIE: Objection.

16 A I have no formal training in the science of

17 risk assessment.

18 BY MR. GRIFFIS:

19 Q And can you say a few words to the camera

20 about what the difference is between hazard and risk

21 assessment, in your view?

22 A Well, hazard assessment is a determination

23 of whether a specific chemical has the potential to

24 cause an illness or disease. And risk assessment

25 looks at the risk associated with a certain dosage

Page 20

1 and different dosages to give the actual risks of

2 what that -- how often that disease would develop.

3 Q And you understand that IARC performed a

4 hazard assessment on glyphosate, a non risk

5 assessment, correct?

6 A Yes.

7 Q You understand that the various agencies,

8 like EPA and EFSA, that have looked at the issue of

9 glyphosate in human carcinogenicity have performed

10 risk assessment, correct?

11 MS. FORGIE: Objection.

12 A Yes, I believe that's true.

13 BY MR. GRIFFIS:

14 Q You have no formal training in oncology,

15 correct?

16 MS. FORGIE: Objection.

17 A Well, I have worked very closely with

18 oncologists for all of my career and during my

19 internship I spent about four months doing clinical

20 oncology, so I have extensive experience in oncology,

21 particularly in hematopoietic malignancies such as

22 leukemia, lymphoma.

23 BY MR. GRIFFIS:

24 Q Do you treat patients?

25 A I have not treated patients since I was an

Page 21

1 intern.

2 Q You don't consider yourself to be an

3 oncologist, right?

4 MS. FORGIE: Objection.

5 A No, I'm not an oncologist.

6 BY MR. GRIFFIS:

7 Q Most of the -- you told us that you

8 testified in many depositions earlier.

9 Most of your testifying has been on behalf

10 of the plaintiffs; is that right?

11 MS. FORGIE: Objection.

12 A So it's been mixed. I testified on behalf

13 of plaintiffs in a number of different lawsuits and

14 I've also testified for the defendants in some

15 lawsuits. So it's really been mixed.

16 BY MR. GRIFFIS:

17 Q It's accurate to say you've testified for a

18 defendant before in a few cases, but most of the

19 testifying you do is on behalf of plaintiffs, right?

20 MS. FORGIE: Objection, asked and answered.

21 A I haven't quantitated it, so I couldn't

22 answer that.

23 BY MR. GRIFFIS:

24 Q You recall testifying in the Wendell versus

25 Johnson & Johnson case that you've testified for a

Page 22

1 defendant before in a few cases, but most of the  
 2 testifying you do is on behalf of plaintiffs?  
 3 MS. FORGIE: Objection.  
 4 A I don't remember saying that. I've  
 5 testified on both sides.  
 6 BY MR. GRIFFIS:  
 7 Q Do you disagree with that statement?  
 8 A Can I see it? Is this a statement I made?  
 9 Q I'll paraphrase it for you, sir. I've  
 10 testified for defendants before in a few cases, but  
 11 most of the testifying I do is on behalf of  
 12 plaintiffs.  
 13 Do you disagree with that is the question?  
 14 MS. FORGIE: Objection, asked and answered.  
 15 A I don't disagree with it, no.  
 16 BY MR. GRIFFIS:  
 17 Q Now, the standard you would use for  
 18 opinions in a medical article that you would put your  
 19 name on and publish in the medical literature would  
 20 be more rigorous than opinions in a litigation case,  
 21 because otherwise it might not be accepted by the  
 22 scientific reviewers who review the article, correct?  
 23 MS. FORGIE: Objection.  
 24 A That's correct.  
 25 BY MR. GRIFFIS:

Page 23

1 Q And you believe that your experience  
 2 qualifies you, but your training does not, to make  
 3 causal assessments between occupational exposures and  
 4 Non-Hodgkin's Lymphoma, correct?  
 5 MS. FORGIE: Objection.  
 6 A So self-training is a form of training, so  
 7 I have had some formal training and I've done my own  
 8 training and I've worked with people who have trained  
 9 me in the practical aspects of those different  
 10 disciplines.  
 11 BY MR. GRIFFIS:  
 12 Q So if we adjust for the self-training point  
 13 and say that you would agree that it is your  
 14 experience and not any formal training that you've  
 15 received that qualifies you to make, in your opinion,  
 16 causal assessments between occupational exposures and  
 17 Non-Hodgkin's Lymphoma; you would agree with that?  
 18 MS. FORGIE: Wait. Objection, asked and  
 19 answered. You can answer again.  
 20 A So we already talked about I have had some  
 21 formal training.  
 22 BY MR. GRIFFIS:  
 23 Q What is the formal training you've had?  
 24 MS. FORGIE: Objection, asked and answered.  
 25 You can answer again.

Page 24

1 A Formal training in what?  
 2 BY MR. GRIFFIS:  
 3 Q In whatever you feel qualifies you to make  
 4 causal assessments between occupational exposures and  
 5 Non-Hodgkin's Lymphoma; what formal training are you  
 6 referring to when you say no to my question?  
 7 A So I've had formal training and  
 8 self-training in epidemiology and toxicology, of  
 9 course pathology, and I have extensive experience in  
 10 all the various clinical, biological aspects of  
 11 lymphoma. So I have extensive experience.  
 12 Q The formal training in toxicology would be  
 13 during your internship or medical school?  
 14 MS. FORGIE: Objection.  
 15 A During my medical school and residency,  
 16 yes.  
 17 MS. FORGIE: Let me get my objection in.  
 18 Objection, asked and answered.  
 19 BY MR. GRIFFIS:  
 20 Q The formal training in epidemiology would  
 21 be that three-week course in Boston we talked about  
 22 earlier, right?  
 23 A Yes.  
 24 MS. FORGIE: Objection, asked and answered.  
 25 A And training in medical school.

Page 25

1 BY MR. GRIFFIS:  
 2 Q And you are -- you said in your expert  
 3 report that you're working on some lymphoma  
 4 epidemiology studies with InterLymph, correct?  
 5 A Yes.  
 6 Q Are you doing any work that includes or  
 7 involves in any way glyphosate?  
 8 A No.  
 9 Q And I don't mean to just limit myself to  
 10 InterLymph.  
 11 Are you doing any sort of scientific work  
 12 or research, outside of your litigation consulting  
 13 work, scientific work or research in any way that  
 14 involves glyphosate?  
 15 A Well, I was principal investigator in the  
 16 Nebraska epidemiology study which was part of the De  
 17 Roos pooling paper --  
 18 Q Yes, and I'm --  
 19 MS. FORGIE: Let him finish his answer.  
 20 A And also --  
 21 MS. FORGIE: He's entitled to finish his  
 22 answer.  
 23 A And also part of the NAPP study, which is  
 24 an ongoing study. So that data is all part of -- my  
 25 data is all part of that, so I have been involved.



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1 BY MR. GRIFFIS:  
 2 Q I was going to cut you off to say I wasn't  
 3 asking about the past. And I'll cover a lot of stuff  
 4 on the past, I was asking about the future.  
 5 But perhaps you mean to talk about the  
 6 future when you mentioned the NAPP study, do you?  
 7 A Well, the NAPP study is the present and the  
 8 future.  
 9 Q What glyphosate data collection is going on  
 10 currently with the NAPP study?  
 11 A The data has all been collected.  
 12 Q What glyphosate data analysis is going on  
 13 with the NAPP study?  
 14 MS. FORGIE: Objection, you can answer to  
 15 the extent that you're not giving away anything  
 16 that's confidential and protected by academic  
 17 privilege.  
 18 A So the analysis is continuing and data is  
 19 being refined in that study.  
 20 BY MR. GRIFFIS:  
 21 Q Is there analysis and data refinement  
 22 proceeding with regard to glyphosate?  
 23 A Yes.  
 24 Q Is anything in publication or being  
 25 submitted for publication with regard to glyphosate?

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1 MS. FORGIE: Objection, same objection  
 2 about confidentiality.  
 3 A There's a draft manuscript that has not  
 4 been finalized or submitted for publication.  
 5 BY MR. GRIFFIS:  
 6 Q And as far as glyphosate is concerned, what  
 7 is the issue that's being examined; is it  
 8 Non-Hodgkin's Lymphoma or some other condition?  
 9 MS. FORGIE: Same objection.  
 10 A It's Non-Hodgkin's Lymphoma.  
 11 BY MR. GRIFFIS:  
 12 Q So there's a publication that's been  
 13 submitted using the NAPP data with regard to  
 14 glyphosate and Non-Hodgkin's Lymphoma?  
 15 MS. FORGIE: Objection.  
 16 A The manuscript is in draft form, it's not  
 17 been submitted.  
 18 BY MR. GRIFFIS:  
 19 Q The manuscript in draft form.  
 20 Are you one of the proposed coauthors in  
 21 that draft manuscript?  
 22 A Yes.  
 23 Q Who are the other coauthors?  
 24 A The lead author's name is Pahwa, P-A-H-W-A.  
 25 I can't, off the top of my head, name all of the

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1 coauthors. Aaron Blair is a coauthor, a lady named  
 2 Beane Freeman is the senior author. There are a  
 3 variety of other authors from U.S. and Canada whose  
 4 names I can't, off the top of my head, give you.  
 5 Q Yes, sir. And we'll talk about NAPP a  
 6 little later and maybe it will refresh your memory  
 7 about all the authors.  
 8 But is the publication that's in press the  
 9 same data that Dr. Pahwa presented in a slide show in  
 10 Brazil?  
 11 A It's not in press. It's in draft form.  
 12 Q I apologize. In draft form.  
 13 A It's substantially the same.  
 14 Q Okay. So we talked about -- I was trying  
 15 to explore any scientific work that you're involved  
 16 in currently or future involving glyphosate and  
 17 you've identified this in-draft NAPP publication.  
 18 Is there anything else?  
 19 A No.  
 20 Q What do you know, if anything, about the  
 21 Ramazzini Institute study on glyphosate?  
 22 A I don't know anything about it.  
 23 Q Have you ever been considered to be a  
 24 fellow of the Ramazzini Institute?  
 25 A No.

Page 29

1 Q Do you know what the Ramazzini Institute  
 2 is?  
 3 A I don't.  
 4 Q Are you hearing the word for the first time  
 5 from me?  
 6 A No, I've come across it before, but I don't  
 7 know what it is.  
 8 Q What is your understanding of what it is?  
 9 A I don't know what it is.  
 10 Q Do you know where they are?  
 11 A I don't know for sure. Probably Italy with  
 12 a name Ramazzini, but I don't actually know.  
 13 Q Do you know, for example, if Aaron Blair is  
 14 a fellow?  
 15 A I don't know.  
 16 Q Do you know if Christopher Portier is a  
 17 fellow?  
 18 A I don't know.  
 19 Q Do you know anyone who is a fellow?  
 20 A I don't.  
 21 MR. GRIFFIS: Yes, sir. I'm going to mark  
 22 next --  
 23 (Exhibit 16-4, deposition notice, was  
 24 marked for identification.)  
 25 MR. GRIFFIS: That's 5.

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1 (Exhibit 16-5, Objections and responses to  
 2 Schedule A, was marked for identification.)  
 3 BY MR. GRIFFIS:  
 4 Q Sir, I marked as Exhibit 4 a copy of a  
 5 notice to take oral and videotaped deposition of  
 6 Dr. Dennis Weisenburger that we issued to your  
 7 counsel.  
 8 Have you seen this document before?  
 9 A Yes, I have.  
 10 Q Do you see, when you turn several pages  
 11 back, there's a Schedule A with numbered pages and on  
 12 page 2 a number of requests for production begin?  
 13 A Yes.  
 14 Q When did you first see those requests for  
 15 production, sir, or hear about them?  
 16 A I don't remember precisely when it was. It  
 17 was probably two weeks ago or so.  
 18 Q With regard to item 7 on page 3, "a copy of  
 19 all abstracts, articles, books or book excerpts of  
 20 which you are an author, coauthor or editor, and any  
 21 correspondence you have written to or exchanged with  
 22 members of any regulatory or legislative body, which  
 23 has as all or part of its subject matter any  
 24 hematopoietic malignancies, glyphosate and/or Roundup  
 25 that are not publicly or otherwise available," what

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1 did you do to assemble documents in response to that  
 2 request, sir, if anything?  
 3 A I determined that everything I had was  
 4 publicly available and that I hadn't really had any  
 5 of these exchanges.  
 6 Q For example, sir, do you have a copy of the  
 7 Brazil slide show by Dr. Pahwa with regard to the  
 8 NAPP study?  
 9 A Yes, we disclosed that.  
 10 Q And -- what do you mean by we "disclosed  
 11 that"?  
 12 MS. FORGIE: Objection, don't answer about  
 13 any discussions you had with me.  
 14 THE WITNESS: Okay.  
 15 MS. FORGIE: It's privileged.  
 16 BY MR. GRIFFIS:  
 17 Q Tell me what your understanding is of "we  
 18 disclosed that."  
 19 A I provided that to Ms. Forgie.  
 20 Q Okay. Did you provide any other documents  
 21 under seven here to Ms. Forgie?  
 22 MS. FORGIE: Don't say anything about any  
 23 discussions that we've had.  
 24 A I provided all of the abstracts and slide  
 25 presentations from the NAPP presentations to her.

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1 BY MR. GRIFFIS:  
 2 Q Any other kinds of abstracts, slide  
 3 presentations, books, book excerpts, et cetera?  
 4 A No.  
 5 Q So multiple things from NAPP is what you  
 6 provided to Ms. Forgie?  
 7 A Yes.  
 8 Q All right. Item 8, "handouts, PowerPoints  
 9 or other documents used by you at any lecture you  
 10 have given in the past five years relating to  
 11 hematopoietic malignancies, including NHL, that are  
 12 not publicly or otherwise available," what did you do  
 13 to respond to that request?  
 14 A Well, we felt this was -- I felt this was  
 15 burdensome because I give many lectures, but none of  
 16 the lectures that I've given in the last five years  
 17 deal with glyphosate or any pesticide as an etiology  
 18 from lymphoma. So I didn't really feel that  
 19 providing all of this was really relevant to the  
 20 case.  
 21 Q So there are such documents, but in your  
 22 view they were not relevant; is that correct?  
 23 MS. FORGIE: Objection.  
 24 A That's correct.  
 25 BY MR. GRIFFIS:

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1 Q Item 9 is, "a copy of all handouts,  
 2 PowerPoints or other documents used by you at any  
 3 lecture you have given on pesticides including  
 4 glyphosate and/or Roundup that are not publicly or  
 5 otherwise available."  
 6 What did you do to respond to that request?  
 7 MS. FORGIE: Objection.  
 8 A I haven't given any such lectures in many  
 9 years and I've never spoken in public on glyphosate  
 10 or Roundup.  
 11 BY MR. GRIFFIS:  
 12 Q When is the last time you've given a  
 13 lecture about any pesticides and possible etiology of  
 14 Non-Hodgkin's Lymphoma?  
 15 A It would have probably been 10 years ago or  
 16 more based on the studies we did in Nebraska, so the  
 17 data and studies we did in Nebraska.  
 18 Q Did you provide any documents to  
 19 Ms. Forgie --  
 20 MS. FORGIE: Objection.  
 21 Q -- in response to that one?  
 22 A No, I don't think I could even find these  
 23 materials.  
 24 BY MR. GRIFFIS:  
 25 Q Item 11, sir, "any communications and

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1 documents relating to communications between you and  
 2 any or all of the following individuals regarding  
 3 glyphosate and/or Roundup which are not publicly or  
 4 otherwise available: Beate Ritz, Christopher  
 5 Portier, Alfred Neugut, Charles Jameson, Chadi  
 6 Nabhan, Aaron Blair, Matthew Ross; what, if anything,  
 7 did you do to respond to that request?  
 8 MS. FORGIE: Objection.  
 9 A So I haven't had any communications with  
 10 these people except for Dr. Portier. And the  
 11 communications that we had were relating to the  
 12 letter and the article that was written regarding the  
 13 European decision. Frankly, all the e-mails are  
 14 purged from my computer every so often when it gets  
 15 overloaded and all of these communications with him  
 16 would have been purged from my computer.  
 17 BY MR. GRIFFIS:  
 18 Q Did you do any search for communications  
 19 with Mr. Portier?  
 20 MS. FORGIE: Objection.  
 21 A No.  
 22 BY MR. GRIFFIS:  
 23 Q Did you do a search for any communications  
 24 that copied or included any of those other persons?  
 25 MS. FORGIE: Objection.

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1 A I have not communicated with any of the  
 2 other persons.  
 3 BY MR. GRIFFIS:  
 4 Q How many different e-mail addresses have  
 5 you used for professional work that you could have  
 6 received e-mails or sent e-mails to these people over  
 7 the past 10 years?  
 8 MS. FORGIE: Objection.  
 9 A In when?  
 10 BY MR. GRIFFIS:  
 11 Q Over the past 10 years.  
 12 A Well, at City of Hope, I only use my work  
 13 e-mail and in Nebraska I would have used my work  
 14 e-mail, so it would have been just two.  
 15 Q So your work e-mail in Nebraska and work  
 16 e-mail at City of Hope.  
 17 Do you know whether either of those  
 18 institutions automatically backs up people's e-mail  
 19 periodically?  
 20 MS. FORGIE: Objection.  
 21 A I don't know.  
 22 BY MR. GRIFFIS:  
 23 Q Did you make any effort to find out whether  
 24 back up tapes exist with e-mail communications or  
 25 other communications with these people?

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1 MS. FORGIE: Objection.  
 2 A I did not.  
 3 BY MR. GRIFFIS:  
 4 Q Did you provide any communications in  
 5 response to number 11 to Ms. Forgie?  
 6 MS. FORGIE: Objection.  
 7 A I did not.  
 8 BY MR. GRIFFIS:  
 9 Q When you say these are periodically  
 10 deleted -- purged/deleted, do you mean by yourself?  
 11 A By my assistant on my behalf.  
 12 Q And what do you mean by getting too many  
 13 e-mails that you need to purge, what happens?  
 14 MS. FORGIE: Objection.  
 15 A Well, my computer doesn't work when it has  
 16 too much data in it, so I have to purge things from  
 17 time to time. So it's usually stuff that's been  
 18 accumulating.  
 19 BY MR. GRIFFIS:  
 20 Q Do you receive e-mails or do you access  
 21 e-mails not only on a work computer but also on a  
 22 laptop?  
 23 MS. FORGIE: Objection.  
 24 A I have an iPad, but I use the same e-mail  
 25 address.

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1 BY MR. GRIFFIS:  
 2 Q Yes, sir. And do you use any backup  
 3 services that back up your data from the iPad or from  
 4 your computer at work to the cloud?  
 5 MS. FORGIE: Objection.  
 6 A No, not that I know of.  
 7 BY MR. GRIFFIS:  
 8 Q And when you ask your secretary to purge  
 9 e-mails, what instructions do you give to your  
 10 secretary?  
 11 MS. FORGIE: Objection.  
 12 A Well, I would say, you know, please purge  
 13 my e-mails from 2016 back, so I usually would keep my  
 14 most recent e-mails.  
 15 BY MR. GRIFFIS:  
 16 Q So right now your e-mails would go back to  
 17 some particular date and then you wouldn't have  
 18 anything before that; is that correct?  
 19 A Right.  
 20 MS. FORGIE: Objection.  
 21 BY MR. GRIFFIS:  
 22 Q Item 13, "all communications and documents  
 23 relating to the North American Pooled Project,  
 24 including, but not limited to, all communications and  
 25 documents" with a number of named persons here.

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1           What, if anything, did you do to respond to  
 2           that request, sir?  
 3           MS. FORGIE: Objection. Again, limit your  
 4           answers to things that are nonconfidential in a sense  
 5           that they relate to the academic privilege.  
 6           A    So for this, I did do a search of my  
 7           database and did find the presentations, I'd save  
 8           those, the presentations, the various presentations  
 9           that were given by people from NAPP and those I  
 10          forwarded to Ms. Forgie. There were some e-mail  
 11          communications. They'd all been purged as far as I  
 12          know. And they were really not substantial in terms  
 13          of the data because I have not been -- I would say I  
 14          have not been highly active in formulating or  
 15          critiquing the draft presentations.  
 16          BY MR. GRIFFIS:  
 17          Q    Why is that; what is your role instead?  
 18          A    My role --  
 19          MS. FORGIE: Objection. Only answer to the  
 20          extent you're not giving away information that's  
 21          confidential.  
 22          A    Yeah. So my role was the original role as  
 23          principal investigator of the Nebraska study, so the  
 24          Nebraska study provided data and that data is part of  
 25          the study. So as I said, most of the work of

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1           analyzing the data, formulating the slides and the  
 2           presentations was done by the group in Canada.  
 3           BY MR. GRIFFIS:  
 4           Q    Yes, sir. And Ms. Forgie keeps telling you  
 5           to only answer to the extent it doesn't violate  
 6           what's called an academic privilege.  
 7           What's your understanding of the sort of  
 8           information that you are not permitted to tell me  
 9           because of an academic privilege?  
 10          MS. FORGIE: Objection. Don't answer that  
 11          if it has anything to do with discussions you and I  
 12          have had.  
 13          A    I don't know. I don't know the answer to  
 14          that question.  
 15          BY MR. GRIFFIS:  
 16          Q    For example, the fact that a publication is  
 17          in the works, that's not something that you consider  
 18          to be academic privilege, correct?  
 19          MS. FORGIE: Objection, asked and answered.  
 20          You can answer again.  
 21          A    Correct.  
 22          BY MR. GRIFFIS:  
 23          Q    Is the kinds of analyses that were  
 24          performed something that you considered to be subject  
 25          to the academic privilege?

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1           MS. FORGIE: Objection.  
 2           A    Yes.  
 3           BY MR. GRIFFIS:  
 4           Q    Are the conclusions something you consider  
 5           to be subject to the academic privilege?  
 6           MS. FORGIE: Objection.  
 7           A    Yes.  
 8           BY MR. GRIFFIS:  
 9           Q    Are which associations or absences of  
 10          associations you chose to focus on something you  
 11          consider to be subject to the academic privilege?  
 12          MS. FORGIE: Objection.  
 13          A    Yes.  
 14          BY MR. GRIFFIS:  
 15          Q    And the reason for the academic privilege  
 16          in your understanding is what, sir?  
 17          MS. FORGIE: Objection. Again, don't  
 18          discuss anything that you and I have discussed.  
 19          A    Well, the data is in the process of being  
 20          analyzed, it's not finalized. The manuscript is a  
 21          draft manuscript that will probably undergo changes.  
 22          So these are all privileged documents that are not  
 23          really made available until -- usually until the  
 24          manuscript has actually been accepted for publication  
 25          at the earliest.

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1           BY MR. GRIFFIS:  
 2           Q    Yes, sir. Before your conversations with  
 3           Ms. Forgie, if any, about the subject of academic  
 4           privilege, what was your understanding about the  
 5           scope of academic privilege?  
 6           A    It was the same.  
 7           Q    What was that understanding?  
 8           MS. FORGIE: Objection, asked and answered.  
 9           You can answer again.  
 10          A    That draft of the manuscript or substantial  
 11          data from the manuscript should not be made available  
 12          for public review or use until the manuscript is  
 13          actually accepted for publication.  
 14          BY MR. GRIFFIS:  
 15          Q    And what is your understanding of the  
 16          reason for that role?  
 17          MS. FORGIE: Objection.  
 18          A    Well, it's just convention. It's academic  
 19          convention. This is the way academic people do  
 20          things. I think the reason is that -- that if  
 21          information is released prior to acceptance, it could  
 22          be used in ways to affect whether something is  
 23          accepted or not, questions the data could be  
 24          misinterpreted. There are all kinds of reasons.  
 25          BY MR. GRIFFIS:

1 Q Could you turn to your expert report, sir.  
 2 That's Exhibit 3.  
 3 A Expert report?  
 4 Q Yes. By the way, before we do that, you  
 5 brought a folder with you today.  
 6 What do you have in the folder?  
 7 A Just my expert report.  
 8 Q What other documents are in there?  
 9 A Nothing.  
 10 Q The reason I'm asking about other documents  
 11 is you have about six paperclips and two binder clips  
 12 which makes me think --  
 13 MS. FORGIE: I asked the same question, but  
 14 it's got exhibits.  
 15 A It's all the exhibits.  
 16 BY MR. GRIFFIS:  
 17 Q Fine. So the expert report there, Exhibit  
 18 3, would you turn to page 3 of the expert report,  
 19 please.  
 20 A Page 3?  
 21 Q Yes. On pages 1 and 2 you're talking about  
 22 your own background and on page 3 you start talking  
 23 about glyphosate; is that right?  
 24 MS. FORGIE: Objection.  
 25 A Yes.

1 MR. GRIFFIS: To help my understanding,  
 2 what is the nature of that objection?  
 3 MS. FORGIE: What happens is you keep  
 4 making these declaratory statements before you ask  
 5 the question and I object to the declaratory  
 6 statements.  
 7 MR. GRIFFIS: That's utterly accurate.  
 8 MS. FORGIE: They're not appropriate and  
 9 they're not necessarily accurate.  
 10 BY MR. GRIFFIS:  
 11 Q Page 3, sir, the -- on page 3, when you  
 12 have a citation, you use parentheses and a number and  
 13 a close parentheses to indicate where we can find the  
 14 citation in your own notes, right?  
 15 A Yes.  
 16 Q So the first citation that you give when  
 17 you start talking about glyphosate is to what,  
 18 please?  
 19 A It's number 3.  
 20 Q What is it?  
 21 MS. FORGIE: Objection.  
 22 A What is the reference?  
 23 BY MR. GRIFFIS:  
 24 Q Yeah, what is the reference?  
 25 A This document by Cox, entitled "Glyphosate

1 fact sheets part 1, toxicology part 2, human exposure  
 2 and ecological effects in the Journal of Pesticide  
 3 Reform, 1995."  
 4 Q Now, do you know what the Journal of  
 5 Pesticide Reform is?  
 6 A I don't.  
 7 Q You know that hasn't been published in more  
 8 than a decade, but it was published by something  
 9 called The Northwest Center for Alternatives to  
 10 Pesticides?  
 11 MS. FORGIE: Objection.  
 12 A I didn't know that.  
 13 BY MR. GRIFFIS:  
 14 Q How did you find this article?  
 15 A I probably saw it in reference by another  
 16 article.  
 17 Q The articles that you pulled together for  
 18 your expert report, were any of those provided to you  
 19 by plaintiff's counsel or anyone else?  
 20 A A few were provided, but most of them are  
 21 ones that I found myself or looked for myself.  
 22 Q And the ones that were provided to you, are  
 23 those ones you had a hard time finding and so you  
 24 asked for help or are they ones they said take a look  
 25 at this and sent them to you?

1 MS. FORGIE: Objection.  
 2 A Both.  
 3 BY MR. GRIFFIS:  
 4 Q Both.  
 5 Do you recall which ones that they  
 6 suggested you take a look at?  
 7 MS. FORGIE: First of all, objection.  
 8 Don't answer anything about any discussions you and I  
 9 had or you had with any other lawyer, please.  
 10 A No, I don't remember which ones were which.  
 11 They all were put together in piles and became part  
 12 of one large accumulation of documents.  
 13 BY MR. GRIFFIS:  
 14 Q Okay. To get back to the Northwest Center  
 15 for Alternatives to Pesticides, you never heard of  
 16 that group before?  
 17 MS. FORGIE: Objection.  
 18 A I have.  
 19 BY MR. GRIFFIS:  
 20 Q So you don't know that it's a lobbying  
 21 group opposed to pesticides?  
 22 A I didn't know that.  
 23 Q And you didn't know this journal was  
 24 dedicated to that same cause?  
 25 MS. FORGIE: Objection, asked and answered.

1 You can answer again.  
 2 A I didn't know that.  
 3 BY MR. GRIFFIS:  
 4 Q Do you know if it purports to even be peer  
 5 reviewed?  
 6 MS. FORGIE: Objection, asked and answered.  
 7 You can answer it again.  
 8 A I assumed it was, but I don't actually know  
 9 that for a fact.  
 10 BY MR. GRIFFIS:  
 11 Q Yes, sir. And the article you cite is by  
 12 the Journal of Pesticide Reform editor, it wasn't  
 13 something submitted to the editor but written by the  
 14 editor of the journal, correct?  
 15 MS. FORGIE: Objection, asked and answered.  
 16 You can answer it again.  
 17 A I don't know that.  
 18 BY MR. GRIFFIS:  
 19 Q You didn't notice that when you looked at  
 20 the article?  
 21 A No.  
 22 (Exhibit 16-6, Carolyn Cox article, was  
 23 marked for identification.)  
 24 BY MR. GRIFFIS:  
 25 Q Do you see, sir -- I've handed you Exhibit

1 MS. FORGIE: Objection, asked and answered.  
 2 This is bordering on badgering the witness.  
 3 A I don't see --  
 4 MS. FORGIE: Wait. Let me get my objection  
 5 in. He said he doesn't know. Now you're badgering  
 6 him.  
 7 You can answer it one more time.  
 8 A I don't know if it's different or not.  
 9 BY MR. GRIFFIS:  
 10 Q Sir, I asked a different question. I said  
 11 the cite on page 13 is "Cox, C., Glyphosate Fact  
 12 Sheets: Part 1, Toxicology; Part 2, Human Exposure  
 13 and Ecological Effects" from the Journal of Pesticide  
 14 Reform.  
 15 That's your cite on page 3?  
 16 MS. FORGIE: Objection, asked and answered.  
 17 A But Part 1 is not labeled "toxicology"  
 18 here.  
 19 BY MR. GRIFFIS:  
 20 Q What we have as Exhibit --  
 21 A And Part 2 does not have a label either.  
 22 Q Yes, sir. What we have as Exhibit 6 -- and  
 23 I understand you've seen a different version, sir,  
 24 perhaps -- is labeled "Glyphosate Fact Sheet" and we  
 25 have Part 1 and Part 2 and it's by Carolyn Cox in the

1 6, the -- and this is the Cox article you cited,  
 2 right?  
 3 MS. FORGIE: Objection, give him a chance  
 4 to look, please.  
 5 A I don't know that it is. I don't think it  
 6 is. Or it could be and mine was in a different  
 7 format because it looks quite different, actually.  
 8 BY MR. GRIFFIS:  
 9 Q These are the glyphosate fact sheets, part  
 10 1 of 2 and part 2 of 2; do you see that on the top  
 11 line, sir?  
 12 A Uh-huh.  
 13 Q And it says "Carolyn Cox and Glyphosate  
 14 Fact Sheet, Part 1 and Part 2," that's your citation  
 15 on page 13 of your expert report, correct?  
 16 MS. FORGIE: Objection, asked and answered.  
 17 You can answer it again.  
 18 A I don't know whether it's the same document  
 19 or not.  
 20 BY MR. GRIFFIS:  
 21 Q Your citation, sir, on page 13 of your  
 22 expert report, is "Cox, C., Glyphosate Fact Sheets:  
 23 Part 1, Toxicology; Part 2, Human Exposure and  
 24 Ecological Effects. Journal of Pesticide Reform."  
 25 Correct?

1 Journal of Pesticide Reform, correct?  
 2 MS. FORGIE: Objection, asked and answered.  
 3 You can answer it again. You're badgering him.  
 4 A That's what your document says, but I'm not  
 5 sure -- it looks different than the document that I  
 6 -- that's all I can say. It might be the same, it  
 7 might not. I don't know.  
 8 BY MR. GRIFFIS:  
 9 Q Do you see that it says "Carolyn Cox is  
 10 JPR's editor"?  
 11 A Yes.  
 12 Q Okay. Now, are articles from the Journal  
 13 of Pesticide Reform generally accepted as reliable in  
 14 your field?  
 15 MS. FORGIE: Objection.  
 16 A I don't know the answer to that.  
 17 BY MR. GRIFFIS:  
 18 Q Do you know if it's generally accepted --  
 19 the Journal of Pesticide Reform, do you know if it's  
 20 generally accepted as scientifically reliable?  
 21 MS. FORGIE: Objection, asked and answered.  
 22 You can answer it again.  
 23 A I don't know the answer to that.  
 24 BY MR. GRIFFIS:  
 25 Q In your expert report, sir, on page 3, your

1 second citation -- I'll wait for you to get there.  
2 The second citation, Citation 4, is to the IARC  
3 Monographs, correct?

4 MS. FORGIE: He's not there yet.

5 A Yes.

6 BY MR. GRIFFIS:

7 Q Tell me how much you relied on the IARC  
8 Monographs and the IARC findings in reaching your  
9 conclusions about glyphosate and Non-Hodgkin's  
10 Lymphoma.

11 A Well, it was one of the documents I  
12 reviewed in the -- as well as many other things that  
13 I reviewed. And I reviewed it carefully and I pulled  
14 a lot of the articles that were referenced there as  
15 part of the materials that I reviewed. So I used it  
16 more as an information source than anything else,  
17 just like the other documents that I looked at.

18 Q Did you use it as kind of a guideline to  
19 which articles you should take a look at?

20 MS. FORGIE: Objection.

21 A It was a starting point, but, you know,  
22 then I did my own searches, I reviewed the EPA  
23 documents, the EFSA documents, all kinds of documents  
24 so --

25 BY MR. GRIFFIS:

1 conclusion to draw my own conclusion.

2 BY MR. GRIFFIS:

3 Q Do you intend to argue to a judge or a jury  
4 that they should believe that glyphosate causes  
5 Non-Hodgkin's Lymphoma because IARC -- in part  
6 because IARC reached a conclusion like that?

7 MS. FORGIE: Objection, asked and answered.  
8 You can answer it again.

9 A No, I would give my own conclusions.

10 BY MR. GRIFFIS:

11 Q You read the deposition of Dr. Blair,  
12 correct?

13 A I did.

14 Q And you saw that he testified that the IARC  
15 working group spent only one or two days total in  
16 analyzing whether glyphosate causes cancer, right?

17 MS. FORGIE: Objection, mischaracterizes  
18 the deposition.

19 A I don't remember that. I know the IARC  
20 spent about a week reviewing four or five different  
21 pesticides, but how much time they spent on each one,  
22 I don't really know.

23 BY MR. GRIFFIS:

24 Q A week -- evaluating four or five would  
25 leave obviously less than a week for any one of them,

1 Q And how influenced were you in reaching  
2 your own conclusions that IARC had reached the  
3 conclusions that they had after doing their review?

4 MS. FORGIE: Objection.

5 A I wasn't influenced. My strategy was to  
6 make up my own mind based on all the literature that  
7 I reviewed.

8 BY MR. GRIFFIS:

9 Q Are you relying on the fact that IARC went  
10 through this process and reached the conclusions that  
11 they did to support your views that glyphosate causes  
12 Non-Hodgkin's Lymphoma?

13 MS. FORGIE: Objection, asked and answered.  
14 You can answer it again.

15 A No.

16 BY MR. GRIFFIS:

17 Q So you won't be telling a jury or a judge  
18 that IARC reached these conclusions and that's one of  
19 the reasons that you should agree with me that  
20 glyphosate causes Non-Hodgkin's Lymphoma; is that  
21 correct?

22 MS. FORGIE: Objection, asked and answered.  
23 You can answer it again.

24 A Well, I think it is telling that IARC came  
25 to that conclusion, but I did not rely on the IARC

1 right?

2 MS. FORGIE: Objection.

3 A Depending on how the time was apportioned,  
4 it depends entirely on that. I wasn't part of the  
5 IARC, so I have no firsthand knowledge.

6 Q Yes, sir. If Dr. Blair testified, and it  
7 was true, that the IARC working group only spent one  
8 or two days total analyzing whether glyphosate can  
9 cause cancer, that's less time than you spent, right?

10 MS. FORGIE: Objection, mischaracterizes  
11 the deposition.

12 A Yes. But as I understand it, the IARC  
13 spent -- the different people in the IARC spent quite  
14 literally months analyzing data and writing draft  
15 reports prior to their meeting, so they -- they spent  
16 a lot of time in aggregate.

17 BY MR. GRIFFIS:

18 Q And did you see that Dr. Blair testified  
19 with regard to that issue, that the evaluation  
20 process didn't start until day 1 of the one-week  
21 meeting?

22 MS. FORGIE: Objection, mischaracterizes  
23 the deposition and asked and answered. You can  
24 answer it again.

25 A I don't remember that, but I think the

1 evaluation really started when people were reviewing  
2 documents and writing draft reports months before.

3 BY MR. GRIFFIS:

4 Q And you -- do you recall that Dr. Blair  
5 testified that the months before period was used for  
6 gathering studies and gathering information and not  
7 analysis?

8 A And writing draft reports.

9 MS. FORGIE: Wait. Is there a question?

10 MR. GRIFFIS: Yes.

11 BY MR. GRIFFIS:

12 Q Do you recall Dr. Blair testified to that?

13 MS. FORGIE: Objection, asked and answered  
14 and mischaracterizes.

15 A Repeat the question. I'm sorry.

16 BY MR. GRIFFIS:

17 Q Yes, sir. Do you recall that Dr. Blair  
18 testified that that month or longer period that you  
19 just referred to was, in fact, spent gathering  
20 studies and not analyzing them?

21 MS. FORGIE: Objection, asked and answered,  
22 mischaracterizes the deposition testimony.

23 A I don't remember that, but my  
24 recollection -- what I do recollect is that there  
25 were subgroup leaders who were analyzing data and

1 linking environmental exposures to cancer, right?

2 MS. FORGIE: Objection.

3 A Well, epidemiology is one source of data.  
4 I'm not sure it's the best. In some studies it's the  
5 best. In some analyses it's the best, in others it's  
6 not the best.

7 BY MR. GRIFFIS:

8 Q Yes, sir. I'm not talking about any  
9 particular set of data. I'm talking about as a  
10 general proposition, as a comparison of classes of  
11 evidence, epidemiologic studies in humans provide the  
12 best and most convincing data linking environmental  
13 exposures to cancer, correct?

14 MS. FORGIE: Objection, asked and answered.  
15 You can answer it again.

16 A It depends entirely on the quality of the  
17 data.

18 BY MR. GRIFFIS:

19 Q Do you recall testifying in Wendell versus  
20 Johnson & Johnson that epidemiological studies in  
21 humans provide the best and most convincing data  
22 linking environmental exposure to cancer?

23 MS. FORGIE: Objection.

24 A I don't remember.

25 BY MR. GRIFFIS:

1 manuscripts and writing draft reports. So when they  
2 came to the meeting in Leon, they came with draft  
3 reports which had analyzed data.

4 Q So people who are not subgroup leaders then  
5 would be in the position of dealing with, as you  
6 understand the process, an already written draft  
7 report and having a day or two to analyze all that  
8 data and reach their own conclusions; is that fair?

9 MS. FORGIE: Objection, mischaracterizes  
10 his prior testimony and asked and answered.

11 A So I don't know what the other members were  
12 doing during that time. I assumed that they had  
13 access to the same documents, but I don't really know  
14 what they did.

15 BY MR. GRIFFIS:

16 Q Okay. Your first category of evidence that  
17 you set forth in your expert report is epidemiology;  
18 is that right?

19 A Yes.

20 Q Why is that?

21 A You have to start somewhere. I didn't -- I  
22 could have started with the animal toxicology as  
23 well. It was an arbitrary decision.

24 Q You would agree that epidemiologic studies  
25 in humans provides the best and most convincing data

1 Q What is your view of the importance of  
2 epidemiology and the role of epidemiology in a body  
3 of evidence that includes epidemiology and animal  
4 studies and mechanistic evidence like genotoxicity or  
5 oxidative stress evidence?

6 A I think epidemiology is one of the  
7 disciplines that is important, but all the  
8 disciplines are important. And depending on the  
9 situation, one could be more important than the other  
10 depending on the quality and quantity of the data.

11 Q With regard to the quality and quantity of  
12 data that exists regarding Non-Hodgkin's Lymphoma,  
13 how do you rank epidemiology, animal studies and  
14 mechanistic data in terms of their importance in  
15 reaching a conclusion?

16 MS. FORGIE: Objection.

17 A I think they're all important.

18 BY MR. GRIFFIS:

19 Q They're all equally important?

20 A Yes.

21 MS. FORGIE: Counsel, at some point when  
22 it's convenient can we have a break?

23 MR. GRIFFIS: Now is fine.

24 MS. FORGIE: Thank you.

25 THE VIDEOGRAPHER: We are off the record at



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1 10:20 a.m.  
 2 (Exhibit 16-7, Article, was marked for  
 3 identification.)  
 4 THE VIDEOGRAPHER: We are back on the  
 5 record at 10:32 a.m.  
 6 BY MR. GRIFFIS:  
 7 Q Sir, we established earlier that you've  
 8 been paid so far in this litigation \$103,450 and you  
 9 told me that since April 19th, which is the last date  
 10 on the bills you provided to us, you worked about a  
 11 hundred hours, correct?  
 12 A Yes.  
 13 Q So just doing the math, a hundred hours at  
 14 \$500 an hour is \$50,000; \$103,000 plus \$50,000 is the  
 15 \$153,000 that you've earned so far in this  
 16 litigation, correct?  
 17 A Yes.  
 18 Q I've marked as Exhibit 7 the original  
 19 article by Sir Austin Bradford Hill that became known  
 20 as the Bradford Hill Criteria; do you recognize that,  
 21 sir?  
 22 A Yes.  
 23 Q And in the right-hand column on the first  
 24 page, page 295, this is before -- I'll back up a  
 25 moment.

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1 The Bradford Hill Criteria are a number of  
 2 numbered criteria like strength, consistency, et  
 3 cetera, and that starts in the third full paragraph  
 4 on page 295 in the right-hand column, right?  
 5 MS. FORGIE: Objection.  
 6 A Yes.  
 7 BY MR. GRIFFIS:  
 8 Q And immediately before that, setting this  
 9 up, Dr. Bradford Hill describes what it is that the  
 10 criteria are for; is that right?  
 11 MS. FORGIE: Objection.  
 12 A I'd have to read the preamble. I don't  
 13 know.  
 14 BY MR. GRIFFIS:  
 15 Q Let's -- I'll read that paragraph, the  
 16 paragraph immediately before the numbered paragraph  
 17 strength. And you just follow along and make sure I  
 18 get it right, sir. "Disregarding then any such  
 19 problem in semantics we have this situation. Our  
 20 observations reveal an association between two  
 21 variables, perfectly clearcut and beyond what we  
 22 would care to attribute to the play of chance. What  
 23 aspects of that association should we especially  
 24 consider before deciding that the most likely  
 25 interpretation of it is causation?" And then he goes

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1 into the first criteria in strength, right?  
 2 A Yes.  
 3 Q Okay. So I read that correctly, sir?  
 4 A Yes.  
 5 MS. FORGIE: Objection. I object to the  
 6 use of the word "criteria." You're looking at me  
 7 like what is the grounds.  
 8 MR. GRIFFIS: I'm not looking at you  
 9 anymore.  
 10 MS. FORGIE: Right, you looked at me?  
 11 MR. GRIFFIS: I did look at you. Then I  
 12 stopped.  
 13 MS. FORGIE: You can look at me. I don't  
 14 care. But that's the grounds.  
 15 BY MR. GRIFFIS:  
 16 Q You call them the Hill Criteria?  
 17 A Some people call them the Hill Criteria. I  
 18 believe they're more guidelines that people should  
 19 use rather than criteria. It's a matter of  
 20 semantics.  
 21 Q In your expert report, you call them "these  
 22 guidelines or criteria," correct?  
 23 A Yes.  
 24 MS. FORGIE: Objection.  
 25 BY MR. GRIFFIS:

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1 Q Either term is right?  
 2 A Either term is right.  
 3 Q Okay. So the third sentence that I read,  
 4 sir, "What aspects of that association should we  
 5 especially consider before deciding that the most  
 6 likely interpretation of it is causation?"  
 7 Now, what Dr. Bradford Hill is doing here  
 8 is pointing out that when two things are associated  
 9 with one another, there's a difference between them  
 10 being associated with one another and the one causing  
 11 the other; is that right?  
 12 MS. FORGIE: Objection.  
 13 A That's right.  
 14 BY MR. GRIFFIS:  
 15 Q Association means we have observed that one  
 16 happens and the other tends to happen more commonly  
 17 and that might be due to a causal association or that  
 18 might be due to something else; is that fair?  
 19 A Yes.  
 20 Q And among the things that it might be due  
 21 to are some different causation that we're not seeing  
 22 in the data or confounding or bias or the play of  
 23 chance.  
 24 Those are all possibilities for the  
 25 perceived association; is that right?

1 MS. FORGIE: Objection.

2 A That's right.

3 BY MR. GRIFFIS:

4 Q He says, "Our observations reveal an  
5 association between two variables, perfectly clearcut  
6 and beyond what we would care to attribute to the  
7 play of chance."

8 Dr. Bradford Hill is considered one of the  
9 founders of modern epidemiology; is that right?

10 A Yes.

11 Q And the association he's talking about here  
12 is an association seen in epidemiological data,  
13 right?

14 MS. FORGIE: Objection.

15 A People use these guidelines or criteria  
16 also with regard sometimes to animal data and other  
17 data. So they're sort of general guidelines  
18 criteria. Most often they're applied to  
19 epidemiology, but they can be applied to other  
20 disciplines as well.

21 BY MR. GRIFFIS:

22 Q When you say "applied to epidemiology," I  
23 want us to all understand each other.

24 Epidemiology is sort of a threshold, we  
25 find an association in epidemiology and then in

1 Q Okay. Let's talk about "perfectly clearcut  
2 and beyond what we care to attribute to the play of  
3 chance."

4 Modern epidemiologists have a number of  
5 statistical tools that they use to establish  
6 whether something is beyond what we would care to  
7 attribute to the play of chance, correct?

8 A Yes.

9 Q And statistical significance is one of  
10 those tools, correct?

11 A Yes.

12 Q And the -- although there are a number of  
13 confidence levels that people can select for  
14 particular studies based on their prior assumptions  
15 about the data, the most commonly used confidence  
16 interval in science is the 95 percent confidence  
17 interval, right?

18 MS. FORGIE: Objection.

19 A Yes.

20 BY MR. GRIFFIS:

21 Q And a 95 percent confidence interval means  
22 what?

23 A It means that you can have 90 percent  
24 confidence or 95 -- 95 percent confidence or 95  
25 percent certainty that the value that you see is not

1 looking at the factors we pull in data from animal  
2 studies if it's available, mechanistic data if it's  
3 available from other disciplines, right?

4 MS. FORGIE: Objection.

5 A Or it could happen the other way. You  
6 could start with animal data that showed an  
7 association and then you might go and do your  
8 epidemiology later. There are different orders that  
9 things can happen in.

10 BY MR. GRIFFIS:

11 Q Okay, sir. Can you give me an example of a  
12 published Bradford Hill analysis, on any subject  
13 whatsoever, that starts with an association seen in  
14 animal data and then looks at other kinds of  
15 information?

16 MS. FORGIE: Objection.

17 A Not off the top of my head.

18 BY MR. GRIFFIS:

19 Q Can you give me an example of a published  
20 paper that uses -- applies the Bradford Hill analysis  
21 that starts with any kind of association other than  
22 epidemiology, not just animal studies?

23 MS. FORGIE: Objection.

24 A Not off the top of my head.

25 BY MR. GRIFFIS:

1 due to chance, but there's a five percent chance  
2 that -- there is a five percent possibility that it  
3 is due to chance.

4 Q Yes, sir. It doesn't say anything about  
5 causation in itself, correct?

6 MS. FORGIE: Objection.

7 A That's correct.

8 BY MR. GRIFFIS:

9 Q Okay. So what we mean by due to chance,  
10 when we're talking about a 95 percent confidence  
11 interval in the data, is if we did the same  
12 experiment again, there's a 95 percent chance that we  
13 would be in the same range; is that right?

14 MS. FORGIE: Objection.

15 A Yes.

16 BY MR. GRIFFIS:

17 Q And it could be that we would be in the  
18 same range because of some problem with the way we  
19 designed the study or because of confounding or  
20 because of bias or it could be that we would be in  
21 the same range because there's a true causal  
22 association here, we don't know without looking  
23 further; is that fair?

24 MS. FORGIE: Objection.

25 A You would have to repeat the question.

1 That was a complicated question.

2 BY MR. GRIFFIS:

3 Q Sure. Yes, sir. A 95 percent -- 95  
4 percent chance that we would get the same results  
5 again, that could mean there's a 95 percent chance we  
6 would get it again if we ran the experiment again  
7 because the new experiment would have the same biases  
8 or confounding or other problems as the first  
9 experiment or it could be that there's a true causal  
10 association that we have seen and the second study  
11 would find it too, right?

12 MS. FORGIE: Objection.

13 A That's correct.

14 BY MR. GRIFFIS:

15 Q Okay. You remember, sir, that when you  
16 looked at the IARC Monograph, the IARC working group  
17 reached particular conclusions about the different  
18 types of evidence that they looked at; they had a  
19 conclusion about epidemiology that was limited to  
20 them, they had a conclusion about the animal studies  
21 and a conclusion about the mechanistic data, correct?

22 MS. FORGIE: Objection.

23 A That's correct.

24 BY MR. GRIFFIS:

25 Q And you recall -- I got it right that the

1 A That's the IARC's definition.

2 BY MR. GRIFFIS:

3 Q Yes, sir. Do you agree that the evidence  
4 is limited if you were to apply the IARC definition?

5 MS. FORGIE: Objection.

6 A I would probably say it was sufficient, but  
7 I don't quibble with the IARC. They have their own  
8 terminology, their own rules and if you -- and so the  
9 IARC working group applied the IARC methodology and  
10 that's what they said.

11 BY MR. GRIFFIS:

12 Q I'll read the standards again. "Positive  
13 association has been observed between exposure to the  
14 agent and cancer."

15 You believe a positive association is  
16 demonstrated in the epidemiology, correct?

17 A Yes.

18 Q For which a causal interpretation is  
19 considered by the working group to be credible and  
20 you consider there to be a credible causal  
21 association in the epidemiology, correct?

22 A Yes.

23 Q But chance, bias or confounding could not  
24 be ruled out with reasonable confidence.

25 And do you agree or disagree with regard to

1 working group's assessment about the epidemiological  
2 evidence was that it was, quote, "limited," close  
3 quote, right?

4 A Yes, that's a term they use based on the  
5 criteria they use in general for IARC conclusions,  
6 so --

7 Q Yes, sir. Did you read the preamble that  
8 sets forth what those criteria were?

9 A Yes, I did.

10 Q Do you recall that the criteria for limited  
11 evidence of carcinogenicity in the human study, the  
12 epidemiology, it says "a positive association has  
13 been observed between exposure to the agent and  
14 cancer for which a causal interpretation is  
15 considered by the working group to be credible, of  
16 which chance, bias or confounding could not be ruled  
17 out with reasonable confidence?

18 MS. FORGIE: Objection.

19 A That's the IARC definition.

20 BY MR. GRIFFIS:

21 Q And do you agree that the epidemiology  
22 evidence that exists with regard to glyphosate and  
23 Non-Hodgkin's Lymphoma is limited by the IARC  
24 definition?

25 MS. FORGIE: Objection.

1 the epidemiology on glyphosate and Non-Hodgkin's  
2 Lymphoma, that chance, bias or confounding cannot be  
3 ruled out with reasonable confidence?

4 MS. FORGIE: Object.

5 A I don't use that convention when I evaluate  
6 the epidemiology data. That's the IARC's convention.  
7 That's the terminology they use.

8 BY MR. GRIFFIS:

9 Q Yes, sir. And you said you don't quibble  
10 with them on it.

11 I'm trying to find out whether you agree or  
12 disagree that -- is it your view, sir, that chance,  
13 bias or confounding can be ruled out with reasonable  
14 confidence in the epidemiology data in glyphosate and  
15 Non-Hodgkin's Lymphoma?

16 MS. FORGIE: Object to form.

17 A Yes.

18 BY MR. GRIFFIS:

19 Q So you disagree with IARC on that?

20 A Well, it's a matter of degree in terms of  
21 the confidence one has in the data. And IARC  
22 basically had two categories they could use: They  
23 could use 1 or the 2A and they didn't feel they had  
24 enough data to put it into one so they left it in 2A.  
25 But I think that the epidemiologic studies are

1 well-constructed, they're well-done and they took  
2 every precaution to, as best they can, eliminate  
3 bias, eliminate -- to account for confounding. And,  
4 you know, so we have to accept the studies on the  
5 basis of their quality and who performed them and,  
6 you know, the results.

7 Q Yes, sir. Is it your view that the  
8 evidence on epidemiology is sufficient, in part,  
9 because it's the best -- the information we have on  
10 epidemiology is the best epidemiology evidence  
11 available so we have to take it the way it is?

12 MS. FORGIE: Objection.

13 A The epidemiology data is high-quality data.  
14 I wouldn't necessarily use the term "best," but it --  
15 they're well-done studies with very credible results,  
16 published in peer-reviewed journals and accepted by  
17 IARC and all the regulatory agencies as part of their  
18 reviews, so I accept it.

19 BY MR. GRIFFIS:

20 Q You read the deposition of Dr. Neugut,  
21 right?

22 A Yes.

23 Q Did you read the deposition of Dr. Portier?

24 A I did.

25 Q Do you agree with Dr. Neugut that the

1 the same answer, that it's an important part of the  
2 information, but no one would just look at one piece  
3 of the information to come to a conclusion.

4 BY MR. GRIFFIS:

5 Q Do you agree with Dr. Portier that the  
6 genotoxicology alone is not sufficient to say there's  
7 a causal association?

8 BY MS. FORGIE: Objection.

9 A Yes.

10 BY MR. GRIFFIS:

11 Q I'm going to ask you some general questions  
12 of the same sort that I was asking when we were  
13 talking about the Bradford Hill paper, sir. This is  
14 not about this particular set of data before us, but  
15 about association and causation in general, all  
16 right.

17 Do you agree that associations with high  
18 relative risks are more likely to be causal assuming  
19 reasonably stable data?

20 MS. FORGIE: Objection.

21 A In general, yes.

22 BY MR. GRIFFIS:

23 Q And do you agree that significant  
24 associations may not be causal, significant meaning  
25 statistical significance, but causal associations

1 epidemiology alone is not sufficient to say there's a  
2 causal association between glyphosate and  
3 Non-Hodgkin's Lymphoma?

4 MS. FORGIE: Objection, asked and answered.  
5 You can answer it again.

6 A Well, I would never look at the  
7 epidemiology alone. But what I did is I looked at  
8 the total body of information and epidemiology was  
9 one part, an important part.

10 BY MR. GRIFFIS:

11 Q Do you agree or disagree with Dr. Neugut's  
12 statement that epidemiology alone is not sufficient  
13 to say there's a causal association?

14 MS. FORGIE: Objection, asked and answered.  
15 You can answer it again.

16 A I would say by itself, it isn't. But no  
17 one would ever just do that kind of analysis.

18 BY MR. GRIFFIS:

19 Q Okay. And you know that Dr. Portier also  
20 said that the epidemiology alone is not sufficient to  
21 say there's a causal association and you agree with  
22 that, right?

23 MS. FORGIE: Objection, asked and answered.  
24 You can answer it again.

25 A Well, I just answered the question, I have

1 should be statistically significant?

2 MS. FORGIE: Objection.

3 A In general, that's true, yes.

4 BY MR. GRIFFIS:

5 Q Do you agree with Dr. Neugut, from his  
6 deposition, sir, that a positive epidemiology study  
7 is one with an odds ratio of greater than one that  
8 was statistically significant?

9 MS. FORGIE: Objection. Could I have that  
10 question read back?

11 MR. GRIFFIS: It was do you agree with  
12 Dr. Neugut.

13 A Could you repeat it?

14 BY MR. GRIFFIS:

15 Q Sure. Do you agree with Dr. Neugut, sir,  
16 from his deposition, that a positive epidemiology  
17 study is one with an odds ratio of greater than one  
18 and was statistically significant?

19 MS. FORGIE: Objection.

20 A That would be considered a positive study,  
21 yes.

22 BY MR. GRIFFIS:

23 Q And do you agree that you would not -- with  
24 Dr. Neugut from his deposition -- you agree with  
25 Dr. Neugut you would not label an exposure as being

1 even associated with an outcome unless there is a  
2 finding an increased risk of significance?

3 MS. FORGIE: Objection, mischaracterizes  
4 the deposition.

5 A So one can overinterpret the whole concept  
6 of statistically significant. And so sometimes  
7 results are not entirely -- they may be a borderline  
8 significance.

9 BY MR. GRIFFIS:

10 Q Is it necessary --

11 MS. FORGIE: Wait, let him finish.

12 A One has to look at the totality of the  
13 evidence. Some of it may be statistically  
14 significant, some of it might be borderline  
15 significant, some of it might be elevated but not  
16 significant. One has to look at all the data, the  
17 totality of the data. One cannot make decisions  
18 based on one data point.

19 BY MR. GRIFFIS:

20 Q Certainly there are a number of substances  
21 about which you can say, based on statistically  
22 significant data, unquestionably statistically  
23 significant data, that there is a positive causal  
24 association between that and a cancer, correct?

25 A Yes.

1 MS. FORGIE: Objection.  
2 BY MR. GRIFFIS:

3 Q And glyphosate is not one of those  
4 substances, correct?

5 MS. FORGIE: Objection.

6 A With glyphosate, there are multiple  
7 epidemiologic studies, there are multiple animal  
8 studies, there are a number of mechanistic studies  
9 that all show statistically significance with regard  
10 to etiology.

11 BY MR. GRIFFIS:

12 Q So you believe that glyphosate does qualify  
13 as a substance for which there is unquestionably  
14 statistically significant data upon which you can  
15 rely in finding a true causal association?

16 MS. FORGIE: Objection, asked and answered.  
17 You can answer it again.

18 A I believe the data is convincing.

19 BY MR. GRIFFIS:

20 Q Are there any --

21 MS. FORGIE: Let him finish.

22 MR. GRIFFIS: Sorry, I thought you were.

23 THE WITNESS: I was.

24 BY MR. GRIFFIS:

25 Q Are there any epidemiology -- are there any

1 statistically significant associations between  
2 glyphosate and Non-Hodgkin's Lymphoma with an odds  
3 ratio of greater than one that are controlled for  
4 other pesticides?

5 MS. FORGIE: Objection.

6 A Yes.

7 BY MR. GRIFFIS:

8 Q Tell me what.

9 A Tell you one?

10 Q Tell me them.

11 A Well, they're shown in my table. The De  
12 Roos study has an elevation of 2.1 that's  
13 statistically significant. The Eriksson study has an  
14 elevation of 1.51 which was not statistically  
15 significant. And the Hardell has an increase of 1.85  
16 that is not statistically significant. And although  
17 I don't have it listed here, if you look at the NAPP  
18 study, that shows a statistically significant  
19 increase risk for NHL and for diffuse large B-cell  
20 lymphoma that is adjusted for other pesticides. So,  
21 in fact, all four of the major studies has shown an  
22 increased risk ratio adjusted for other pesticides,  
23 two of which are significant --

24 Q The two that are significant --

25 MS. FORGIE: Wait. Were you finished?

1 A -- and two that are not.

2 BY MR. GRIFFIS:

3 Q The two that are significant in your view  
4 are De Roos, Item 3 on your chart, and the NAPP study  
5 that you didn't actually list on your chart; is that  
6 right?

7 MS. FORGIE: Objection.

8 A Right.

9 BY MR. GRIFFIS:

10 Q All right. We'll get to NAPP later.

11 Could you tell us briefly why you chose not  
12 to include that in your expert report?

13 A Yeah. It was an arbitrary decision. I  
14 felt like I would be sort of using it twice because  
15 the NAPP study is based on the McDuffie study and De  
16 Roos study. It's a pooling of that data. So it's  
17 really the same data. So I decided -- and the fact  
18 that it -- it has not been published, I decided not  
19 to use it. But I --

20 Q Okay.

21 A I'm happy to talk about it.

22 MS. FORGIE: Were you finished?

23 THE WITNESS: Yes.

24 BY MR. GRIFFIS:

25 Q To be fair, if we were to put NAPP into

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1 your table, it would be, so that we don't double  
 2 count, we need to delete McDuffie and De Roos because  
 3 it's using the same data?  
 4 A Yes.  
 5 MS. FORGIE: Objection.  
 6 BY MR. GRIFFIS:  
 7 Q And some of these studies actually kind of  
 8 have the same issue; they represent a combination of  
 9 two or more older studies, right?  
 10 A Yes.  
 11 MS. FORGIE: Objection.  
 12 BY MR. GRIFFIS:  
 13 Q Do you agree, sir, it's important to have  
 14 consistent findings across different epidemiologic  
 15 studies to determine a causal relationship?  
 16 MS. FORGIE: Objection.  
 17 A Yes.  
 18 (Exhibit 16-8, Study - Etiologic  
 19 Heterogeneity Among Non-Hodgkin Lymphoma Subtypes:  
 20 The InterLymph Non-Hodgkin Lymphoma Subtypes Project,  
 21 was marked for identification.)  
 22 BY MR. GRIFFIS:  
 23 Q Sir, I have marked as Exhibit 8 a study in  
 24 the Journal of the National Cancer Institute  
 25 Monographs, 2014, on which you are a coauthor, among

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1 many other coauthors, entitled "Etiologic  
 2 Heterogeneity among Non-Hodgkin's Lymphoma Subtypes:  
 3 The InterLymph Non-Hodgkin's Lymphoma Subtype  
 4 Project," correct?  
 5 A Yes.  
 6 Q And would you tell us, first of all, what  
 7 your role was in this study?  
 8 A Well, I was involved in organizing the  
 9 study, designing how the different subtypes were  
 10 grouped. And I was actually a peer reviewer for  
 11 about four or five of the other papers that were part  
 12 of this monograph. So I was sort of, in a way, one  
 13 of the editors. So this -- the whole monograph was  
 14 based on pooled analyses of many epidemiological  
 15 studies.  
 16 Q And by "monograph," you mean a single  
 17 edition of the journal that was devoted to a common  
 18 subject, multiple papers within --  
 19 A This is one of the papers, correct.  
 20 Q So you were a peer review on some of the  
 21 other papers?  
 22 A Yes.  
 23 Q And please explain briefly what this study,  
 24 the one I've marked as Exhibit 8, was doing.  
 25 A Well, study 8 took a look at all the data

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1 globally and I think showed that some risk factors  
 2 are important for some types, some subtypes, but not  
 3 important for other subtypes. So that -- and this is  
 4 something we've known from other data that certain  
 5 risk factors are important for some subtypes, but  
 6 don't have any -- don't have any role in other  
 7 subtypes.  
 8 On the other hand, there are some risk  
 9 factors which appeared to increase the risk for all  
 10 subtypes, so --  
 11 Q So you can't really generalize about risk  
 12 factors without actually looking at the data; is that  
 13 fair?  
 14 MS. FORGIE: Objection.  
 15 A Right.  
 16 BY MR. GRIFFIS:  
 17 Q When you say "subtypes," what you're  
 18 talking about is subtypes of Non-Hodgkin's Lymphoma,  
 19 right?  
 20 A Yes.  
 21 Q Non-Hodgkin's Lymphoma is a heterogenous  
 22 group of conditions, not a single unitary condition,  
 23 right?  
 24 MS. FORGIE: Objection.  
 25 A Well, traditionally it's been thought of as

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1 a single disease, but I think our concepts and ideas  
 2 have changed about it so that we really believe now  
 3 that some of the subtypes are quite distinctive, some  
 4 subtypes are related to other subtypes, but other  
 5 subtypes are not at all related to other subtypes.  
 6 So it is a very heterogenous group of diseases.  
 7 Q And this study, Exhibit 8, sir, was a  
 8 statistical analysis of a large amount of data about  
 9 the etiology of various subtypes of Non-Hodgkin's  
 10 Lymphoma, meaning things that cause those various  
 11 subtypes of Non-Hodgkin's Lymphoma, right?  
 12 A Yes.  
 13 Q On page 138, sir --  
 14 A 138?  
 15 Q Yes. I'm in the "discussion" section.  
 16 A Okay.  
 17 Q I'm going to start with the second sentence  
 18 in the "discussion" section, sir. "Based on a novel  
 19 methodological approach to cluster NHL subtypes  
 20 according to a broad spectrum of risk factors, the  
 21 majority of risk factors showed differences in risk  
 22 among NHL subtypes whereas fewer factors showed  
 23 consistent risks among subtypes," correct?  
 24 MS. FORGIE: Objection.  
 25 A That's what it says. I have to read it

1 again to understand it.

2 BY MR. GRIFFIS:

3 Q Okay. And do you -- isn't that exactly  
4 what you were just telling me, that what you have  
5 found, based on this work and other work, that some  
6 risk factors are associated with particular subtypes  
7 and some risk factors are associated with multiple  
8 subtypes?

9 MS. FORGIE: Objection. Also, he's  
10 requested time to review which I think should --

11 A I think it says the same thing. You're  
12 right.

13 BY MR. GRIFFIS:

14 Q Okay. It goes on to say, "Overall, this  
15 approach most strongly distinguished T-cell from  
16 B-cell lymphomas with additional heterogeneity among  
17 specific types of B-cell lymphoma, although the  
18 patterns of effect heterogeneity varied substantially  
19 for the different risk factors," right?

20 A Yes, that's what it says.

21 Q Can you explain what that means,  
22 distinguishing -- "most strongly distinguish T-cell  
23 from B-cell lymphomas with some additional  
24 heterogeneity among specific types of B-cell  
25 lymphoma"?

1 A I haven't read this paper for a long time,  
2 but let me attempt here. It says --

3 MS. FORGIE: You can take your time to read  
4 it.

5 THE WITNESS: Let me read the comment  
6 again.

7 BY MR. GRIFFIS:

8 Q Let me be clear. What I -- my question is  
9 primarily asking you to make it clear to a relative  
10 lay person what T-cell and B-cell lymphoma means in  
11 the context of that sentence, because they may not  
12 know the difference.

13 MS. FORGIE: And make it clear you read as  
14 much as you need to read.

15 A Let me read the comment again.

16 BY MR. GRIFFIS:

17 Q Sure.

18 A So what it's saying is there seemed to be  
19 risk factors for B-cell lymphoma and there seemed to  
20 be risk factors for T-cell lymphoma. Those are two  
21 different immunologically types -- subtypes of  
22 Non-Hodgkin's Lymphoma. So there seemed to be some  
23 correlation of certain factors with more so with T or  
24 more so with B and then even within B, with some  
25 subtypes of B.

1 Q Okay.

2 A I think that's what it said.

3 Q It would be fair to say, sir, before we go  
4 and turn to the specific data on glyphosate, that the  
5 conclusion that different risk factors may or may not  
6 have heterogenous impact on Non-Hodgkin's Lymphoma  
7 would be true of glyphosate?

8 MS. FORGIE: Objection.

9 A So it could be true for glyphosate. We  
10 don't know. I mean, the -- there are a few studies  
11 that have looked at risk for B versus -- I think B or  
12 B versus T, but at least for B because B is the  
13 biggest group. And the NAPP actually looked at the  
14 large subtypes, because for the small subtypes you  
15 don't have enough cases so they aggregated those into  
16 one sort of very heterogenous group.

17 BY MR. GRIFFIS:

18 Q The other group?

19 A The other group, yeah.

20 Q So some of the studies have actually  
21 looked -- broken it down by subtype, but as a general  
22 proposition, it would be necessary to look at the  
23 data on glyphosate to figure out whether it was the  
24 kind of risk factor that affects different subtypes  
25 differently or whether it affects the subtypes the

1 same?

2 MS. FORGIE: Objection, mischaracterizes  
3 his testimony.

4 A So traditionally, in the past,  
5 epidemiologists looked at the NHL as a -- as an  
6 entity. But as a pathologist, one of the things that  
7 I really pushed hard in the InterLymph group was this  
8 idea of looking at subtypes, because we've learned a  
9 lot about how distinctive some of the various  
10 subtypes are, so it would make sense to look and see  
11 whether there aren't specific risk factors for  
12 subtypes. And for some types we have already known  
13 that. But looking at things, environmental things  
14 that might have more specificity for subtypes. That  
15 was one of the things that I really pushed hard into  
16 the InterLymph group. That was one of my  
17 contributions.

18 MR. GRIFFIS: I'm going to turn now, sir,  
19 to the epidemiology studies that you listed in Table  
20 1 of your expert report. Let's take a five-minute  
21 break before we do that.

22 THE VIDEOGRAPHER: We are off the record at  
23 11:06 a.m.

24 (Brief recess.)

25 THE VIDEOGRAPHER: We are back on the

1 record at 11:18 a.m.

2 (Exhibit 16-9, Cancer Epidemiology,  
3 Biomarkers & Prevention, was marked for  
4 identification.)

5 BY MR. GRIFFIS:

6 Q Sir, I've marked as Exhibit 9 the McDuffie  
7 article and this is the first of the epidemiology  
8 articles that you put into your expert report, Number  
9 1 on your Table 1, your table of epidemiologic  
10 studies of Non-Hodgkin's Lymphoma and glyphosate and  
11 the first one you discussed, right?

12 A Yes.

13 Q And the study looked at many different  
14 substances at once, it wasn't specifically designed  
15 to test the hypothesis that glyphosate caused  
16 Non-Hodgkin's Lymphoma, right?

17 MS. FORGIE: Objection.

18 A Right.

19 BY MR. GRIFFIS:

20 Q Now, why is it important for an  
21 epidemiology study to describe at the outset which  
22 specific relationships are being investigated?

23 Let me rephrase that, because I don't mean  
24 that they should write it at the beginning of the  
25 paper, but why is it important for epidemiologists

1 and people performing epidemiology studies to decide  
2 up front which specific relationships are being  
3 examined and to declare that?

4 MS. FORGIE: Objection.

5 A Well, it can impact on how you design the  
6 study and how many cases and how many controls you  
7 need, so it's important to understand what your  
8 intent is for the study in order to design the study  
9 properly.

10 In this study, they -- the question  
11 generally was looking at whether a specific class is  
12 or even specific pesticides are associated with  
13 Non-Hodgkin's Lymphoma, so it was a more general  
14 approach rather than looking at one class of  
15 pesticides or one specific pesticide.

16 Q Yes, sir. And when they mentioned, when  
17 they were discussing how they set up the study, the  
18 specific classes and chemical groups and individual  
19 compounds they mentioned -- I'm over on page 1156,  
20 right-hand column.

21 A Okay.

22 Q And here they're talking about how they  
23 collected the pesticide data and how they drilled  
24 down from broadest categories of exposure to classes  
25 to chemical groups and finally individual compounds.

1 And that's at the end of the first  
2 paragraph, right?

3 A The pesticide data was collected at various  
4 levels -- separate levels, if that's what you're  
5 talking about.

6 Q Right. And the specific examples that they  
7 gave are of the phenoxyherbicides which don't include  
8 glyphosate and the individual compounds that they  
9 mentioned in the example also don't include  
10 glyphosate, right?

11 A Yes.

12 Q And the authors describe their analyses in  
13 the study as exploratory, right?

14 MS. FORGIE: Objection.

15 A Where do you see it?

16 BY MR. GRIFFIS:

17 Q Page 1161, sir.

18 A Oh, in the --

19 Q When you get there I'll direct you more  
20 specifically. 1161 -- sorry, are you there?

21 A Yeah.

22 Q Right-hand column, the second full  
23 paragraph, third paragraph. It says, "We reported  
24 results for a number of chemical agents and  
25 exposures, not all of which were specified in

1 hypothesis. Therefore, the statistical analyses  
2 related to these unspecified agents should be  
3 considered exploratory. As a consequence of  
4 conducting multiple comparisons, a small number of  
5 statistically significant results may be attributable  
6 to chance."

7 That's what they wrote, right?

8 A Yes.

9 Q The issue they're talking about here is  
10 when you gather a whole bunch of data about a whole  
11 bunch of possible association, you are likely, just  
12 by the play of chance, to see statistically  
13 significant association just due to the operation of  
14 chance, right?

15 MS. FORGIE: Objection.

16 A That's certainly a possibility, yes.

17 BY MR. GRIFFIS:

18 Q If you're using a 95 percent confidence  
19 interval, it would happen about one out of every 20  
20 associations, right?

21 MS. FORGIE: Objection.

22 A Right.

23 BY MR. GRIFFIS:

24 Q And glyphosate isn't mentioned in the  
25 abstract or in the discussion section of this



1 article, right?

2 A I'd have to read through it to be sure.

3 Q Okay. Go ahead.

4 MS. FORGIE: Objection.

5 A Yeah, that's correct. Glyphosate is not  
6 mentioned, although they do comment that risks were  
7 found for a number of herbicides so they don't  
8 specify.

9 BY MR. GRIFFIS:

10 Q Now, Table 2, sir, is a listing of a number  
11 of individual herbicides with some associated odds  
12 ratios.

13 Would you explain the difference between  
14 the odds ratio A and the odds ratio B column in Table  
15 2, sir?

16 A Yeah. So you have to look at the footnote  
17 and odds ratio A is sort of adjusted for -- it's  
18 adjusted for age and province or residence. And then  
19 -- so adjusted on two variables. And then B is  
20 adjusted on that, as well as I think they list a  
21 bunch of medical variables, as well as a positive  
22 history of cancer in first-degree relatives. So it's  
23 a more detailed adjustment.

24 Q It's more adjusted?

25 A More adjusted, yes.

1 Q Now, we established earlier that you  
2 wouldn't be the person to figure out exactly which  
3 things need to be adjusted for or to construct the  
4 statistical tools used to do the adjustment. But  
5 would you explain, please, why it is that the column  
6 B adjustment is more helpful than the column A  
7 adjustment.

8 MS. FORGIE: Objection.

9 A I think it's more helpful because it -- it  
10 adjusts for more variables and it equalizes the  
11 analysis in a better way. And, you know, a lot of  
12 the things they've adjusted for I don't think are  
13 important, but some of the things are important. You  
14 always want to adjust for age and province or state  
15 or residence just because there could be differences  
16 in different places. And it's good to adjust for a  
17 family history of -- not sure of a family history of  
18 cancer, but a family history of hematopoietic cancer  
19 would be a better thing to adjust for. So -- I don't  
20 know. I mean, the second adjustment is not really,  
21 to me, very much better than the first.

22 Q Yes, sir. You chose, when you created your  
23 chart in your expert report, your Table 1 listing,  
24 the epidemiology studies and some selected risk  
25 estimates pulled out of those epidemiology studies

1 and they were selected, right, assuming you didn't  
2 report every single risk assessment from the study?

3 A I didn't. No, I reported just for  
4 glyphosate.

5 Q And not every single one for glyphosate,  
6 you pulled particular ones out to show us, correct?

7 MS. FORGIE: Objection.

8 A Right.

9 BY MR. GRIFFIS:

10 Q For example, the very first one that you  
11 report from McDuffie is the 1.2 from the more  
12 adjusted odds ratio column, correct?

13 MS. FORGIE: Objection.

14 A Yes. You can see it's not much different  
15 than the one that's adjusted, seeing just a couple  
16 variables, it's almost the same.

17 BY MR. GRIFFIS:

18 Q It didn't change the numbers much, but it's  
19 a better figure because it adjusts for more relevant  
20 variables, right?

21 MS. FORGIE: Objection, asked and answered.  
22 You can answer that again.

23 A That's the reason I selected that one.

24 BY MR. GRIFFIS:

25 Q Yes, sir. Now, in your expert report, you

1 also point to an analysis from the McDuffie paper of  
2 the odds ratios for less than or equal to two days a  
3 year of exposure to glyphosate and one for greater  
4 than two days per year of glyphosate, right?

5 A Yes.

6 Q That is from Table 8 on page 1161, correct?

7 A Yes.

8 Q And they did not adjust -- those figures  
9 are not adjusted for exposure to other pesticides,  
10 right?

11 A That's correct.

12 Q And that is the 2.12 odds ratio with a  
13 confidence interval of 1.2 to 3.73 and you put that  
14 into your table and bolded it, right?

15 A Yes.

16 Q Now, that is certainly a major confounder  
17 for the issue of whether glyphosate can cause  
18 Non-Hodgkin's Lymphoma, right?

19 MS. FORGIE: Objection.

20 A What's a major confounder?

21 BY MR. GRIFFIS:

22 Q Exposure to other pesticides.

23 A Yes, it could be.

24 Q And they said -- the authors said, on page  
25 1160, in the right-hand column at the bottom,

1 "clearly, we had few exposed men whose exposure was  
2 limited to one pesticide or one class of pesticides,"  
3 right?

4 A Yes, that's what it says.

5 Q So confounding was certainly happening in  
6 this study, right?

7 MS. FORGIE: Objection.

8 A Well, it's potentially confounding. We  
9 don't really know it's confounding, but there's  
10 potential for confounding.

11 BY MR. GRIFFIS:

12 Q The 2.12, that you listed on your Table 1  
13 and put into bold, wasn't even adjusted for the other  
14 medical variables that we saw adjusted for in Table  
15 2, right?

16 MS. FORGIE: Objection.

17 A No, it was just adjusted for age and  
18 province of residence.

19 MR. GRIFFIS: I've been told we need to change  
20 the tape, so I'm going to pause and we can do that.

21 THE WITNESS: Okay.

22 THE VIDEOGRAPHER: This marks the end of  
23 Videotape Number 1 in the deposition of Dr. Dennis  
24 Weisenburger. We're off the record at 11:32 a.m.  
25 (Brief recess.)

1 THE VIDEOGRAPHER: We are back on the  
2 record at 11:34 a.m. This marks the beginning of  
3 Videotape Number 2 in the deposition of Dr. Dennis  
4 Weisenburger.

5 BY MR. GRIFFIS:

6 Q Doctor, I'm on Table 8 in the McDuffie  
7 study.

8 A Okay.

9 Q Exhibit 9. And again, this is the table  
10 from which you pulled the 2.12 odds ratio that you  
11 put in Table 1 in your expert report and bolded.

12 The analysis that you cited in your expert  
13 report on the issue of dose response of glyphosate in  
14 Non-Hodgkin's Lymphoma, is it greater than zero, less  
15 than or equal to two versus greater than two, days  
16 per year of exposure, does not take into account the  
17 duration of exposure, correct?

18 MS. FORGIE: Objection.

19 A That's correct.

20 BY MR. GRIFFIS:

21 Q So, for example, a person could use  
22 glyphosate twice a year for each of 10 consecutive  
23 years and they'd be put in the low exposure group and  
24 someone who used it three times in their life but all  
25 three times in the same year on different days would

1 be put into the high exposure group, right?

2 MS. FORGIE: Objection.

3 A I'm not sure that's true. I'd have to look  
4 in the methods to see if they have any qualifiers --  
5 BY MR. GRIFFIS:

6 Q Okay. Go ahead.

7 A -- to that. Based on what they say in the  
8 methods, you really can't know, but I would assume  
9 that's correct.

10 Q It's possible that the dose response  
11 analysis in this study could be backward with regard  
12 to these two groups, the low exposure group and the  
13 high exposure group could be backwards depending on  
14 how duration matches up with this measure that they  
15 chose of dates per year, right?

16 MS. FORGIE: Objection.

17 A So this parameter, less than or equal to  
18 two days and greater than two days, is a surrogate  
19 for dose intensity rather than total dose. So  
20 intensity is important as well as time and this looks  
21 more at intensity, so low intensity versus high  
22 intensity.

23 BY MR. GRIFFIS:

24 Q Well, sir, someone could be exposed to it,  
25 tiny amounts of glyphosate with a trivial exposure on

1 three different days in a year and put into the high  
2 risk group, or somebody could be massively exposed on  
3 two days during the year and be put into the low risk  
4 group, right?

5 MS. FORGIE: Objection, asked and answered.  
6 You can answer it again.

7 A It's certainly possible, but that's the  
8 way -- that's the way they did it in this study.

9 BY MR. GRIFFIS:

10 Q Yes, sir. It's possible, though, that the  
11 actual exposures, both in terms of total number of  
12 exposures and intensity of exposures, could be  
13 reversed between these two groups, correct?

14 MS. FORGIE: Objection, asked and answered.  
15 You can answer it again.

16 A Well, as I said, this is a measure of  
17 intensity of exposure, so it's looking at people who  
18 had more exposure in a short period of time, which is  
19 a year, versus those who had less exposure in a short  
20 period of time. So it -- it is what it is.

21 BY MR. GRIFFIS:

22 Q But my statement is correct, that the  
23 people that are placed in the low group and the  
24 people that were placed -- a person could be put in  
25 the lower exposure group having had a more meaningful

1 exposure to glyphosate than someone who is placed  
2 into the high exposure group, right?

3 A It's possible.

4 MS. FORGIE: Objection, asked and answered.  
5 You can answer it again.

6 A It's possible.

7 BY MR. GRIFFIS:

8 Q Sir, there's no odds ratio reported in this  
9 study between glyphosate and NHL, Non-Hodgkin's  
10 Lymphoma, that is statistically significant and is  
11 adjusted for other pesticides, right?

12 MS. FORGIE: Objection, asked and answered.

13 A That's correct.

14 MR. GRIFFIS: Exhibit 10 will be the  
15 Hardell study.

16 (Exhibit 16-10, Hardell study, was marked  
17 for identification.)

18 BY MR. GRIFFIS:

19 Q Sir, we talked earlier about how some of  
20 the epidemiology studies were actually groupings of  
21 smaller, older epidemiology studies and that's true  
22 of this one, right?

23 A Yes.

24 Q This Hardell 2002 study looked at the  
25 Hardell 1999 and the Nordstrom 1998 studies, right?

1 A Yes, and pooled them.

2 Q And this is like the McDuffie study,  
3 another study where data was gathered for a large  
4 group of herbicides and pesticides and other  
5 chemicals, not focussed on glyphosate, correct?

6 MS. FORGIE: Objection.

7 A Yes.

8 BY MR. GRIFFIS:

9 Q So you would expect to see multiple  
10 statistically significant associations just due to  
11 chance alone in such a grouping of data, right?

12 MS. FORGIE: Objection.

13 A You certainly could.

14 BY MR. GRIFFIS:

15 Q There were only eight people with  
16 Non-Hodgkin's Lymphoma exposed to glyphosate, even in  
17 this pooled analysis out of 404 total cases, right?

18 MS. FORGIE: Objection.

19 A That's correct.

20 BY MR. GRIFFIS:

21 Q And you say that -- in your Table 1 in your  
22 expert report, that there is limited statistical  
23 power to this study, right?

24 A Yes.

25 Q Is that because of the very small number of

1 people exposed?

2 A Yes.

3 Q And could you explain what "limited  
4 statistical power" means?

5 A Well, it means when you have a small number  
6 of exposed cases, your ability to detect significant  
7 differences is limited by the number of cases.

8 Q Yes, sir.

9 A So the power is weak.

10 Q And when power is weak, you can get false  
11 results in both directions, right; you can get  
12 seemingly false positive associations that are really  
13 based on how scant the data is and you can get  
14 seeming false negative associations that are really  
15 based on how scant the data is; fair?

16 MS. FORGIE: Objection.

17 A Yes, you can get either false positive or  
18 false negative results.

19 BY MR. GRIFFIS:

20 Q Now, Dr. Hardell and his colleagues did  
21 multivariate analysis adjust for confounders in this  
22 study, right?

23 A Yes.

24 Q What is multivariate analysis?

25 A Well, it's a form of analysis where you

1 can -- you can look at how different variables affect  
2 each other and you can modify the effects by the  
3 effects due to other variables. So you can come to a  
4 more -- a more, I guess, accurate appraisal of what  
5 the true result is.

6 Q Okay. In the -- and Table 7 reports the  
7 univariate and the multivariate analyses that they  
8 employ to get the various odds ratios that they  
9 reported for a number of specific substances,  
10 including glyphosate, right?

11 A Yes.

12 Q And you chose to put into your Table 1 in  
13 your expert report the 3.04, 1.08 to 8.52, from the  
14 univariate analysis; is that right?

15 A Yes.

16 Q And you also listed the multivariate one,  
17 1.85, 0.55 to 6.2?

18 A Yes.

19 Q You bolded the 3.04 one and not the 1.85  
20 one.

21 First of all, why are some things bolded  
22 and some things not bolded in Table 1 of your expert  
23 report?

24 A So I bolded the ones that were  
25 statistically significant.

1 Q Okay. And the better controlled one, the  
2 multivariate analysis, is not statistically  
3 significant in the Hardell study, right?

4 MS. FORGIE: Objection.

5 A Right.

6 BY MR. GRIFFIS:

7 Q And you say that the multivariate analysis  
8 that you report here, 1.85, not statistically  
9 significant, is adjusted for other pesticides, right?

10 A Yes.

11 Q Let's go to the statistical analysis  
12 section, so 1044 -- page 1044.

13 A Okay.

14 Q It goes over onto the next page. I showed  
15 you where the section starts, but the part I would  
16 like you to focus on is the second page, 1045. They  
17 talk about both univariate and multivariate analyses  
18 were done. We were just in the table that shows the  
19 results of that.

20 And they say, "in this pooled analysis,  
21 adjustment was made for study area and vital status,"  
22 right.

23 A Right.

24 Q Vital status means alive or dead?

25 A Correct.

1 Q So they didn't control in the multivariate  
2 analysis for other pesticides, correct?

3 A If you read on, it says, "when risk  
4 estimates for different pesticides were analyzed."  
5 I'm assuming -- that's a good question.

6 Q They say in the next sentence --

7 MS. FORGIE: Wait, he's reading so he can  
8 answer your question.

9 A It's not clear from the methods, but in the  
10 results section, they talk about multivariate  
11 analysis. Tables 6 and 7, it says "multivariate  
12 analysis of exposure to phenoxyacetic acids,  
13 insecticides, fungicides" --

14 MR. GRIFFIS: Can you tell me where you're  
15 reading?

16 THE WITNESS: Yeah, it's the third  
17 paragraph on 1046.

18 A It says, "an increased risk persisted for  
19 exposure to herbicides, fungicides and impregnating  
20 agents. A separate multivariate analysis was  
21 performed for exposure to herbicides. Lower risk  
22 estimates were obtained, although all herbicides  
23 still constituted risk factors for NHL." It implies  
24 they did risk adjustment for other pesticides. I  
25 know -- I mean, other experts have also come to that

1 conclusion.

2 Q Do they say anywhere that they controlled  
3 for other pesticides?

4 MS. FORGIE: Objection, asked and answered.  
5 He just answered that question. You can answer it  
6 again.

7 A It doesn't clearly say.

8 BY MR. GRIFFIS:

9 Q On page 1047, sir, three paragraphs down  
10 from the table, Table 7 on the left-hand side,  
11 talking about the multivariate analysis as performed  
12 for herbicides, fungicides and impregnating agents.  
13 And two -- three sentences in, they say, "The results  
14 in multivariate analysis must be interpreted with  
15 caution since exposure to different types of  
16 pesticides correlate," correct?

17 MS. FORGIE: Objection. You left out part  
18 of the sentence.

19 MR. GRIFFIS: No, I read the whole  
20 sentence.

21 MS. FORGIE: No.

22 MR. GRIFFIS: The sentence says, "the  
23 results in multivariate analysis must be interpreted  
24 with caution since exposure to different types of  
25 pesticides correlate."

1 MS. FORGIE: But you started to read "in  
2 the multivariate analysis exposure to herbicides,  
3 fungicides and impregnated agents increased the risk"  
4 and you left out although OR was lower than the unit  
5 variant analysis.

6 MR. GRIFFIS: Okay. Now I'm focussed on  
7 the results.

8 MS. FORGIE: So skipping the first two  
9 sentences to the third sentence, is that what you're  
10 doing?

11 MR. GRIFFIS: Yeah, that's what I said I  
12 was doing.

13 A I don't know --

14 MS. FORGIE: Objection, asked and answered.  
15 You can answer it again.

16 A All I can say is that I assume the  
17 multivariate analysis included analysis for other  
18 pesticides and other people who reviewed this paper  
19 came to the same conclusions. So -- but I'm not sure  
20 at this point.

21 BY MR. GRIFFIS:

22 Q You agree with me, sir, they don't say  
23 anywhere that they controlled for other pesticides  
24 and they say that, hey, when you look at the  
25 multivariate analysis result you have to interpret

<p style="text-align: right;">Page 106</p> <p>1 them with caution because there is, in fact, 2 correlation with exposures to different pesticides, 3 right? 4 MS. FORGIE: Objection, asked and answered. 5 He's answered this twice. You can answer it a third 6 time, but it's starting to be harassing. 7 A That's what they say. 8 BY MR. GRIFFIS: 9 Q And the statement that "the results in 10 multivariate analysis must be interpreted with 11 caution since exposure to different types of 12 pesticides correlate" doesn't make sense if they have 13 already controlled for the effective exposure to 14 different types of pesticides in the multivariate 15 analysis, right? 16 MS. FORGIE: Objection, asked and answered. 17 You can answer it again. 18 A It doesn't make sense. 19 BY MR. GRIFFIS: 20 Q Now, whether Table 7 did or didn't control 21 for other pesticides and herbicides, that odds ratio 22 is not statistically significant, right? 23 A Correct. 24 Q It's certainly the case that there is no 25 odds ratio in Hardell that shows a statistically</p>	<p style="text-align: right;">Page 108</p> <p>1 record. The time is 12:48 p.m. 2 (Exhibit 16-11, De Roos 2003 study, was 3 marked for identification.) 4 BY MR. GRIFFIS: 5 Q Sir, I've marked as Exhibit 11 the De Roos 6 2003 paper and this is the paper that appears in your 7 expert report, Table 1, correct, Item 3? 8 A Yes. 9 Q And this study pooled three smaller older 10 studies: The Cantor study from 1992, the Zahm study 11 from 1990 and the Hoar study from 1986, correct? 12 A Yes. 13 Q Did I pronounce those names correctly? 14 A Yes. 15 Q And you were one of the coauthors on the De 16 Roos 2003 paper, right? 17 A Yes. 18 Q And what was your role? 19 A So the Nebraska study is one of the three 20 studies that they pooled and that was the study that 21 I was the PI on. So it was all data from Nebraska. 22 I helped organize the study, I managed the study, I 23 did all the pathology on the study. 24 Q Okay. And is there a sense in which De 25 Roos 2003 supersedes Cantor 92, Zahm 94, Hoar 86?</p>
<p style="text-align: right;">Page 107</p> <p>1 significant association between glyphosate and 2 Non-Hodgkin's Lymphoma controlled for other 3 pesticides; true? 4 MS. FORGIE: Objection. 5 A Well, the multivariate analysis for 6 glyphosate is not statistically significant. 7 BY MR. GRIFFIS: 8 Q Is there any other odds ratio reported in 9 this study that shows a statistically significant 10 association between glyphosate and Non-Hodgkin's 11 Lymphoma controlled for other pesticides? 12 MS. FORGIE: Objection, asked and answered. 13 This is the fifth time he's explained it to you, many 14 times. 15 A No. 16 BY MR. GRIFFIS: 17 Q The next thing I'm going to look at, 18 Doctor, is the De Roos 2003. That's a little bit 19 intricate and it's almost lunchtime. 20 Would you like to break? 21 A Sure. 22 THE VIDEOGRAPHER: We are off the record at 23 11:54 a.m. 24 (Lunch recess.) 25 THE VIDEOGRAPHER: We are back on the</p>	<p style="text-align: right;">Page 109</p> <p>1 MS. FORGIE: Objection. 2 A I'm not sure I'd use that terminology. It 3 pooled the data from those three studies so they're 4 bigger numbers and more power to analyze. So in a 5 way, yes, because I used it instead of the other 6 three. And some of the other three don't maybe even 7 look at glyphosate, so this one had enough cases to 8 do that. 9 Q The idea of pooling, when you do it right 10 like this, is to try to get more power and get more 11 information than could be contained in the smaller 12 studies by comparing like to like; is that fair? 13 A Yes. 14 Q That's the sense when I mean supersede; 15 this, if it's done right, should be better than the 16 sum of the parts; is that fair? 17 MS. FORGIE: Objection. 18 A Yes. 19 BY MR. GRIFFIS: 20 Q That was your intent anyway? 21 A Yes. 22 Q And none of the studies that went into 23 this -- Cantor, Zahm or Hoar -- was designed to test 24 the hypothesis that glyphosate specifically was 25 associated with Non-Hodgkin's Lymphoma, right?</p>

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1 MS. FORGIE: Objection.  
 2 A That's correct.  
 3 BY MR. GRIFFIS:  
 4 Q This looked at -- they looked at and the De  
 5 Roos 2003 pooled analysis looked at 47 pesticides  
 6 simultaneously, right?  
 7 A Yes.  
 8 Q And as we discussed earlier, with so many  
 9 comparisons going on, multiple comparisons, more than  
 10 20 comparisons, you would expect some false positives  
 11 just by virtue of the fact that you're looking at so  
 12 many different statistical comparisons at once,  
 13 right?  
 14 MS. FORGIE: Objection.  
 15 A Yes.  
 16 BY MR. GRIFFIS:  
 17 Q Generally speaking, smaller studies with  
 18 fewer patients are more prone to chance complicating  
 19 their findings or falsifying their findings, right?  
 20 A Yes.  
 21 Q Now, in -- did you read the expert reports  
 22 of any of the other expert witnesses in the  
 23 litigation, sir?  
 24 A Yes.  
 25 Q Did you read the report of Dr. Neugut?

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1 A Yes.  
 2 Q Did you see that Dr. Neugut said that the  
 3 Cantor study, one of the ones that's pooled here, had  
 4 low power because there were only 26 cases of  
 5 Non-Hodgkin's Lymphoma with exposure to glyphosate?  
 6 MS. FORGIE: Objection.  
 7 A I don't remember that.  
 8 BY MR. GRIFFIS:  
 9 Q Okay. Well, let's set aside whether he  
 10 said it.  
 11 Do you agree that the Cantor study has low  
 12 power because there are only 26 cases in  
 13 Non-Hodgkin's Lymphoma with exposure to glyphosate?  
 14 MS. FORGIE: Objection.  
 15 A I would actually probably have to look at  
 16 the study. 26 cases is a fair number of cases even  
 17 compared to the other cases we've been studying so --  
 18 Q Okay.  
 19 MS. FORGIE: Were you finished with your  
 20 answer?  
 21 BY MR. GRIFFIS:  
 22 Q Hardell is one that you listed in your  
 23 expert report as having low statistical power, right?  
 24 A Right.  
 25 Q And that was one with eight individuals

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1 with exposure glyphosate in Non-Hodgkin's Lymphoma,  
 2 right?  
 3 A Right.  
 4 Q So 26, you seem to have a different  
 5 threshold perhaps than Dr. Neugut that at eight you  
 6 would agree with him about the low statistical power,  
 7 right?  
 8 MS. FORGIE: Objection.  
 9 A Yeah, I agree that eight is, as I said in  
 10 my report, it has limited power.  
 11 BY MR. GRIFFIS:  
 12 Q And some of the other studies that you list  
 13 on your Table 1 in your expert report have comparable  
 14 or less than Hardell, right, like Cocco has only four  
 15 individuals with exposure to glyphosate in  
 16 Non-Hodgkin's Lymphoma?  
 17 A Yes.  
 18 Q And Orsi has only 12 exposure to glyphosate  
 19 in Non-Hodgkin's Lymphoma?  
 20 A Yes.  
 21 Q Do you think Orsi has limited statistical  
 22 power?  
 23 A Yes.  
 24 Q Now, I'm looking at your Table 1 in your  
 25 expert report, sir. You report only one odds ratio

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1 from the De Roos study and that is a 2.1 with a  
 2 confidence interval of 1.1 to 4.0.  
 3 A Correct.  
 4 Q And that's bolded which in your -- in the  
 5 rubric you were using means it was statistically  
 6 significant. And there's an asterisk which refers us  
 7 to the comment over on the right, "adjusted for other  
 8 pesticides," correct?  
 9 A Yes.  
 10 Q And when I asked you earlier, are there any  
 11 statistically significant findings with an odds  
 12 ration of greater than one in testing for other  
 13 pesticides, in the epidemiology literature you said  
 14 yes, there's one in De Roos 2003, meaning this one,  
 15 and there's also one in the North American Pooled  
 16 Project data.  
 17 And although you didn't list it in your  
 18 expert report, you were aware of that one, correct?  
 19 A Correct.  
 20 MS. FORGIE: Objection.  
 21 BY MR. GRIFFIS:  
 22 Q So those were the two.  
 23 Now, on page 2 of the De Roos study, we  
 24 have the "statistical analyses" section and the data  
 25 that was -- the odds ratios that were given in this

<p style="text-align: right;">Page 114</p> <p>1 were controlled in two different ways, the logistical 2 regression and hierarchical regression, correct? 3 A Yes. 4 Q And in the "statistical analysis" section, 5 they explain -- it's explained that the pesticide -- 6 other pesticide exposures were controlled in the 7 hierarchical regression analysis, correct? 8 A Yes. 9 Q And not in the logistical regression 10 analysis, right? 11 A They're controlled in both. 12 Q Where does it say that? 13 A I have to sit down and read the whole paper 14 again to really be sure. 15 MS. FORGIE: Do you want him to read the 16 whole paper to find it? 17 MR. GRIFFIS: Looking for him to finish his 18 sentence. 19 A So on the title for Table 3, it says 20 "Effect estimates for use of specific pesticides and 21 NHL incidence, adjusting for use of other 22 pesticides," and there's an asterisk. And the 23 asterisk says, "Each estimate is adjusted for use of 24 all other pesticides listed in Table 3, age and study 25 site." Logistic regression and hierarchical</p>	<p style="text-align: right;">Page 116</p> <p>1 Q Okay. And then "the standard logistic 2 regression models did not assume any prior 3 distribution of pesticide effects, in contrast to the 4 hierarchical regression modelling;" did I read that 5 correctly? 6 A Uh-huh. 7 Q Explain what that means. 8 A Well, I'm not really sure what it means. I 9 think it means that they made adjustments for each of 10 the pesticides, but they didn't really take into 11 consideration how often they were covariates, how 12 often they were used, whereas the other one, the 13 hierarchical regression, was a more detailed 14 analysis. 15 Q If you keep reading the next sentence under 16 the title "Hierarchical regression of multiple 17 pesticide exposures" gives us some more information 18 saying "in the first-level model of the hierarchical 19 regression analysis, NHL disease status was regressed 20 simultaneously on the 47 pesticide exposures, age and 21 study site." 22 Can you explain what it means to be 23 regressed simultaneously on the 47 pesticide 24 exposures? 25 A No, I can't. I'm not an expert on these</p>
<p style="text-align: right;">Page 115</p> <p>1 regression use slightly different methods to do 2 basically the same thing. 3 Q Okay. Let's go to page 2 of 9, 4 "statistical analysis" section. 5 A 209. 6 Q Two of 9? 7 MS. FORGIE: Page 2. 8 THE WITNESS: Page 2. I'm sorry. 9 BY MR. GRIFFIS: 10 Q And I'm looking at the first paragraph 11 under "statistical analysis" first, about halfway 12 down the paragraph where it says "we employed two 13 approaches to our analysis: Standard statistical 14 regression (maximum likelihood estimation), and 15 hierarchical regression." And then it says, "all 16 models included variables for age and indicator 17 variables for study site." It goes on to explain 18 that it was considered whether to control for 19 first-degree relative with hematopoietic cancer, 20 education and smoking, but those weren't important 21 confounders; I'm right so far? 22 MS. FORGIE: No. Objection. 23 BY MR. GRIFFIS: 24 Q Is that correct so far? 25 A I think so, yeah.</p>	<p style="text-align: right;">Page 117</p> <p>1 kind of multivariate analyses and differences. 2 Q Then please explain a little more -- I 3 believe you said earlier that the logistic regression 4 control for other pesticides was less thorough or 5 less sophisticated or less complete than the 6 hierarchical. 7 Would you explain what you meant by that if 8 I even got it right? 9 MS. FORGIE: Objection. 10 A I think that's the best I can do. 11 BY MR. GRIFFIS: 12 Q Okay. 13 A They explain it in their -- on the end of 14 the description of hierarchical regression. They 15 say, "Because our prior covariates were crudely 16 defined and because there is little information on 17 factors that would be expected to affect the 18 magnitude of the effect of pesticides on NHL 19 incidence, we also performed a hierarchical 20 regression analysis of multiple pesticides using an 21 intercept-only model in which all pesticide effects 22 were assumed to arise from a common prior 23 distribution with a prior residual variance. In 24 other words, this modelling assumed that there was no 25 a priori reason to believe that any specific</p>

<p style="text-align: right;">Page 118</p> <p>1 pesticide was more likely to be associated with NHL 2 incidence than any other pesticide in the model." 3 So it's a different way of doing it. I'm 4 not sure -- I'm not sure it's better or more 5 sophisticated or less sophisticated. That would be a 6 question for an epidemiologist or a statistician. 7 Q Which of the people on the paper would that 8 be a question for? 9 A It would be a question for De Roos or Zahm 10 or Cantor or Blair, Burmeister also. They're all 11 epidemiologists. Burmeister is a statistician. 12 Q When the -- I'm sorry, you were just 13 reading from a paragraph that extends from page 4 14 over to page 5. And I'm now looking at the last 15 sentence in that paragraph, sir, that's on page 5. 16 It says, "Indeed a linear regression 17 analysis of 47 logistic regression beta coefficients 18 for the pesticides regressed on the prior covariates 19 found no statistical significant association at a 20 significance level of P less than 0.05 results not 21 shown." Can you explain -- 22 A Where is that? I'm sorry. 23 Q You were reading from the paragraph that 24 extends from page 4 to page 5. 25 A No, I was reading from page 2.</p>	<p style="text-align: right;">Page 120</p> <p>1 A Yeah. 2 Q So there could have been a column of 3 logistic regression -- sorry, linear regression 4 analysis next to the logistic regression and 5 hierarchical regression, but none of those would have 6 been statistically significant, right? 7 MS. FORGIE: Objection. 8 A That's what it says. 9 BY MR. GRIFFIS: 10 Q Okay. So there was -- to sum up, I think, 11 if I got this correct, there were three different 12 ways that the data was analyzed in this study: 13 Statistical regression, hierarchical regression and 14 linear regression; am I right so far? 15 MS. FORGIE: Objection. 16 A I believe so. 17 BY MR. GRIFFIS: 18 Q In the logistic -- and you believe that the 19 logistic regression, hierarchical regression and 20 linear regression all controlled for other 21 pesticides, correct? 22 A Yes. 23 Q In the logistic regression, there was a 24 statistically significant odds ratio, 2.1 with a 25 confidence interval of 1.1 to 4.0, correct?</p>
<p style="text-align: right;">Page 119</p> <p>1 Q Were you? 2 A Uh-huh. 3 Q I was looking at an almost identical 4 sentence that was extending from 4 to 5 talking about 5 the linear intercept model. Anyway, if you turn to 6 page 5 and look at the paragraph that ends there. 7 A So they looked at it one way and it was 8 statistically significant and they looked at it a 9 second way and it was still elevated, but it was no 10 longer statistically significant. 11 Q And the linear regression analysis, which 12 is another way they looked at it but did not show the 13 results, found no statistically significant 14 association, correct? 15 MS. FORGIE: Objection. 16 BY MR. GRIFFIS: 17 Q Do you need to know where I am, sir? 18 A I know where you're at. I need to read 19 this again. 20 Q Sure. 21 A That's what it says. They used another 22 method called "linear regression analysis," but it 23 doesn't show the data. 24 Q Yeah, it says "data results not shown," 25 right?</p>	<p style="text-align: right;">Page 121</p> <p>1 A Correct. 2 Q In the hierarchical regression, it was not 3 statistically significant, correct? 4 A That's correct, but it was still elevated. 5 Q And in the linear regression, it was also 6 not statistically significant, although we don't know 7 what the numbers are, right? 8 A Correct. 9 Q Did you originally have access to those 10 numbers? 11 MS. FORGIE: Objection. 12 A I never saw the numbers. 13 BY MR. GRIFFIS: 14 Q So you wouldn't have seen the -- a table 15 with the linear regression analysis? 16 A No, I don't -- I don't remember. I don't 17 think so, but I don't remember. 18 Q You don't generate these tables? 19 A No. 20 Q The value that you reported in your expert 21 report was the one that is statistically significant 22 and not the -- not either of the nonsignificant 23 values, correct? 24 A Correct. 25 Q Why is that?</p>



<p style="text-align: right;">Page 122</p> <p>1 A Well, because, you know, I probably should 2 have -- I probably should have listed both, but I 3 listed the one that was statistically significant. 4 Q And is it fair to say you don't know which 5 of the three regressions best controls for other 6 pesticides exposures? 7 MS. FORGIE: Objection. 8 A I don't know which one does, no. They 9 don't really talk about that. 10 BY MR. GRIFFIS: 11 Q Please explain what the North American 12 Pooled Project is. 13 A Yeah, so the North American Pooled Project 14 is a pooling project of studies -- the three studies 15 in the De Roos 2003 paper and the McDuffie paper, so 16 it's a pooling of Canadian and U.S. case control 17 studies. 18 Q We talked a few minutes ago about how 19 there's a sense in which the De Roos 2003 paper 20 supersedes the three papers that it pooled, Cantor, 21 the Zahm and Hoar. 22 In the same sense, does the North American 23 Pooled Project supersede the De Roos 2003 and 24 McDuffie papers? 25 MS. FORGIE: Objection.</p>	<p style="text-align: right;">Page 124</p> <p>1 Q The findings -- and as we discussed 2 earlier, the findings that are going to be published 3 in the paper that's in draft right now have been 4 presented at various scientific conferences and there 5 are slide shows corresponding to that, right? 6 A Yes. 7 (Exhibit 16-12, slide show, was marked for 8 identification.) 9 BY MR. GRIFFIS: 10 Q I've marked as Exhibit 12 a slide show from 11 a presentation -- 12 MS. FORGIE: Are we on 12? Sorry. 13 BY MR. GRIFFIS: 14 Q -- PowerPoint presentation that was done by 15 Dr. Pahwa in Brazil; is that correct? 16 A Yes. 17 Q And you've seen these slides before, they 18 were sent to you, right? 19 A Yes. 20 Q You got e-mails from Dr. Pahwa and others 21 and sending e-mails back and forth discussing the 22 slides attached, correct? 23 MS. FORGIE: Objection. 24 A Yes. 25 BY MR. GRIFFIS:</p>
<p style="text-align: right;">Page 123</p> <p>1 A Yes, because it pools them and uses the 2 data in bigger, more powerful study. 3 BY MR. GRIFFIS: 4 Q And again, the intent of pooling is to 5 increase the power and increase the value of the 6 statistical analyses performed on the data; is that 7 fair? 8 MS. FORGIE: Objection. 9 A Yes. 10 BY MR. GRIFFIS: 11 Q Now, there hasn't been a publication yet 12 from the North American Pooled Project, right? 13 MS. FORGIE: Objection. 14 A There's a publication that's actually been 15 published. 16 BY MR. GRIFFIS: 17 Q On the subject of glyphosate and 18 Non-Hodgkin's Lymphoma, there hasn't been a 19 publication yet? 20 MS. FORGIE: Objection. 21 A No, there hasn't, not to my knowledge. 22 BY MR. GRIFFIS: 23 Q And that's what is, we were talking about 24 earlier, that's in draft, right? 25 A Yes.</p>	<p style="text-align: right;">Page 125</p> <p>1 Q Now, unfortunately, the -- she didn't turn 2 on page numbering on the slides, but if you'll turn 3 to the ninth slide -- 4 MS. FORGIE: You mean ninth by page number 5 or double sides; which nine do you mean? 6 MR. GRIFFIS: Mine isn't. Mine's by page 7 number. 8 MS. FORGIE: Okay. So it's going to be 18 9 for us. 10 MR. GRIFFIS: No. There aren't -- do you 11 have page numbers on yours? 12 MS. FORGIE: No. We have double-sided. 13 BY MR. GRIFFIS: 14 Q What would be the ninth slide? 15 A Just show us. 16 MS. FORGIE: Yeah, just show us. 17 THE WITNESS: It's this one? 18 BY MR. GRIFFIS: 19 Q Yeah. So the ninth slide is showing 20 glyphosate used and NHL risks for ever/never use of 21 glyphosate, correct? 22 A Yes. 23 Q What is ever/never? 24 A So if they've ever been exposed, they're 25 counted as exposed and if they've never been exposed,</p>

1 they're counted as unexposed.

2 Q It's one of the ways that epidemiologists  
3 assess causation, correct, ever/never?

4 MS. FORGIE: Objection.

5 A Yes, sir, it's a rather crude method.

6 BY MR. GRIFFIS:

7 Q Yes, sir. And we have a column called  
8 "odds ratio A, 95 percent confidence interval" and  
9 one called "odds ratio B, 95 percent confidence  
10 interval," right?

11 A Yes.

12 Q The first column, odds ratio A, adjusts for  
13 age, sex, state province and lymphatic or  
14 hematopoietic cancer in first-degree relative, a  
15 proxy respondent and use of any personal protective  
16 equipment, correct?

17 A Yes.

18 Q And B adjusts for everything that I just  
19 said from A, plus use of 2,4-D, which is another  
20 pesticide, use of Dicamba, use of Malathion, two more  
21 pesticides, right?

22 A Correct.

23 Q And in the "adjusted for other pesticides"  
24 column, there are no statistically significant  
25 results, correct?

1 A That's correct.

2 Q And does that accurately reflect the draft  
3 data on ever/never use of pesticides?

4 MS. FORGIE: Objection.

5 A Yes. The numbers are different, but I  
6 think the findings are similar.

7 BY MR. GRIFFIS:

8 Q So for ever and never use of pesticides,  
9 the NAPP, North American Pooled Project, has a null  
10 finding for glyphosate and NHL overall, right?

11 MS. FORGIE: Objection.

12 A It's not a null finding, but it's not  
13 statistically significantly increased.

14 BY MR. GRIFFIS:

15 Q And if you look at the subtypes, the odds  
16 ratio for each subtype varied, correct?

17 A Yes.

18 Q And they were all nonsignificant, right?

19 A Yes.

20 Q And one was less than zero as a matter of  
21 fact -- less than one, correct?

22 A Yes.

23 Q And what does an odds ratio of less than  
24 one as compared to one that's greater than one mean?

25 A It doesn't mean much. It means that it's

1 less than one, so it's -- it could be equivalent to  
2 one, but you see the range goes between .4 and 1.15,  
3 so it's somewhere in that range.

4 Q Right. I'm probably just asking too simple  
5 a question.

6 For a jury or judge that doesn't know  
7 statistics, generally speaking, an odds ratio of  
8 greater than one is --

9 A Suggests risk.

10 Q -- suggests risks, all things being equal,  
11 and whether all things are equal or not is always a  
12 matter of debate, and an odds ratio of less than one  
13 suggests a decrease, all things being equal; is that  
14 fair?

15 MS. FORGIE: Objection.

16 A Well, I would say it means there's no  
17 increased risk, there's no increased risk. You could  
18 say a decreased risk, but we don't really believe  
19 that glyphosate prevents cancer.

20 BY MR. GRIFFIS:

21 Q Sir, turn to the third slide from the end,  
22 please. The title is "Proxy vs. Self Respondents."

23 A Start at the beginning.

24 Q Third from the end is the easiest way to  
25 get there. Start at the back, go in three.

1 A Oh, there. Got it.

2 Q So here we have two columns: One is "proxy  
3 and self respondents" and the other is "self  
4 respondents only," correct?

5 A Correct.

6 Q And there was an issue with some question  
7 about the value of the proxy responses as compared to  
8 the value of the self responses in this data, right?

9 MS. FORGIE: Objection.

10 A That was one of the things they -- that's  
11 one of the things they analyzed as a possible  
12 covariate.

13 BY MR. GRIFFIS:

14 Q And they found that the proxy responses  
15 were less reliable than the self respondents which is  
16 consistent with standard epidemiology, right?

17 MS. FORGIE: Objection.

18 A It's often -- that's often the case,  
19 although not always.

20 BY MR. GRIFFIS:

21 Q And it was in this data, right?

22 MS. FORGIE: Objection.

23 A Well, they don't actually show you the data  
24 for the proxy, but you would assume that that's true  
25 because the odds ratios are higher for -- well, for

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1 some of them than when you add the proxies in than  
 2 when you do the self respondents. But for others  
 3 it's really no different.  
 4 Q Yes, sir. And I'm not asking you based on  
 5 what's revealed on this slide, but based on your  
 6 knowledge of this study and your knowledge of the  
 7 underlying studies, the issues of less reliable data  
 8 from proxy respondents was something that you all  
 9 found and identified in that data, correct?  
 10 MS. FORGIE: Objection, asked and answered.  
 11 You can answer it again.  
 12 A I don't think it was clear in the analysis  
 13 frankly. There were some other -- there were some  
 14 other slides -- there's another slide set that looked  
 15 at it and really didn't seem there was any real  
 16 difference. So here you see for some of them, the  
 17 odds ratio were a little higher when you had the  
 18 proxies, but for others it's really not. So I really  
 19 can't answer that question with regard to the  
 20 specific project based on this data.  
 21 Q Okay.  
 22 A I mean, if you aggregated all of this data  
 23 together, it may not be much different.  
 24 Q Do you recall, sir, whether the NAPP  
 25 scientists looked at the issue of proxy versus self

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1 respondents and were concerned about unreliability,  
 2 the relative unreliability of the proxy respondents?  
 3 MS. FORGIE: Objection, asked and answered.  
 4 You can answer it again.  
 5 A They looked at it with that thought in  
 6 mind, but I don't see anything here that would  
 7 convince me that it's a major issue.  
 8 BY MR. GRIFFIS:  
 9 Q Okay. And I'm not asking about this slide,  
 10 but your memory of the project.  
 11 Do you recall in the project that being  
 12 identified as a concern and that the proxy data was,  
 13 in fact, less reliable than the self respondent data?  
 14 MS. FORGIE: Objection, asked and answered.  
 15 You can answer it again.  
 16 A No, I don't recall that. In fact, in the  
 17 analyses they did, they used proxy as a covariate so  
 18 they adjusted for it.  
 19 BY MR. GRIFFIS:  
 20 Q In which set?  
 21 A In almost all of the data sets.  
 22 Q When adjusted for proxy respondents, the  
 23 statistical significance of statistically significant  
 24 findings decreased, right?  
 25 MS. FORGIE: Objection, asked and answered.

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1 You can answer it again.  
 2 A I don't know which data you're talking  
 3 about.  
 4 BY MR. GRIFFIS:  
 5 Q I'm asking about your memory of the study  
 6 in the data analyses therein.  
 7 MS. FORGIE: Objection, asked and answered.  
 8 A I remember the data that it wasn't a major  
 9 issue.  
 10 BY MR. GRIFFIS:  
 11 Q Okay. So I want to look at the various  
 12 measures -- what this chart is showing, in addition  
 13 to proxy and self respondents in one column and self  
 14 respondents in another, is several measures of  
 15 intensity, right; we have never/ever in the first two  
 16 rows; we have duration, number of years of use in the  
 17 next two; frequency, which is something we saw from  
 18 McDuffie in the next two; and then lifetime days,  
 19 which is number of years times number of days per  
 20 year in the last two, right?  
 21 MS. FORGIE: Objection.  
 22 A Right.  
 23 BY MR. GRIFFIS:  
 24 Q And the lifetime days is a measure that was  
 25 not reported in the published studies that we've

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1 looked at to date; is that right?  
 2 MS. FORGIE: Objection, there's two  
 3 questions pending.  
 4 A That is correct.  
 5 BY MR. GRIFFIS:  
 6 Q The lifetime days analysis would adjust for  
 7 the possible exposure, misclassification issue that  
 8 we talked about with regard to McDuffie which was  
 9 only measuring greater than zero, less than or equal  
 10 to two days versus greater than two days per year,  
 11 right?  
 12 MS. FORGIE: Objection, mischaracterizes.  
 13 A It's just a different parameter to measure  
 14 that really -- it does a different -- it does a  
 15 different thing.  
 16 BY MR. GRIFFIS:  
 17 Q It captures both the number of days per  
 18 year and for how many years you've been using it?  
 19 A Right.  
 20 Q And it puts that information together so  
 21 that people who have been exposed to glyphosate on  
 22 more occasions over the course of their life and more  
 23 frequently will be -- will tend to be put into a  
 24 higher risk group than those who have not, correct?  
 25 MS. FORGIE: Objection.

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1 A That's correct.  
 2 BY MR. GRIFFIS:  
 3 Q Now, the odds ratio for Non-Hodgkin's  
 4 Lymphoma with exposure in the highest dose category  
 5 of greater than seven days per year is 1.08 in the  
 6 first column, proxy and first respondents, and 1.06  
 7 in the second column, self respondents, correct?  
 8 A Correct.  
 9 Q And neither one of those is statistically  
 10 significant, right?  
 11 A Right.  
 12 Q Those are null results?  
 13 MS. FORGIE: Objection.  
 14 A Correct.  
 15 BY MR. GRIFFIS:  
 16 Q Do you recall Dr. Blair testifying in the  
 17 deposition that you read that the self-reported data  
 18 of proxies is less reliable than self-reported data  
 19 of the individual who had the exposure?  
 20 MS. FORGIE: Objection, mischaracterizes  
 21 the testimony.  
 22 A I don't remember that.  
 23 BY MR. GRIFFIS:  
 24 Q You agree that, generally speaking, that's  
 25 correct?

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1 MS. FORGIE: Objection.  
 2 A It's a concern that it has to be  
 3 considered. It depends. In some studies it hasn't  
 4 been a problem, in other studies it has. So it's  
 5 always something to be considered.  
 6 BY MR. GRIFFIS:  
 7 Q Yes, sir. The ever/never odds ratio  
 8 calculated for the self respondents was less than  
 9 1.0, correct?  
 10 A Yes.  
 11 Q When looking at the number of years of  
 12 exposure, sir, duration in terms of number of years,  
 13 you looked at greater than zero and less than or  
 14 equal to 3.5 years of exposure versus more than 3.5  
 15 years of exposure, correct?  
 16 A Yes.  
 17 Q And there was, if anything, a negative  
 18 trend in the data with people who had been exposed  
 19 for a longer period of time having a lower odds  
 20 ratio, correct?  
 21 MS. FORGIE: Objection.  
 22 A That's correct, although the numbers aren't  
 23 so very different.  
 24 BY MR. GRIFFIS:  
 25 Q That was true for both proxy and self

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1 respondents and self respondents, correct?  
 2 MS. FORGIE: Objection, asked and answered.  
 3 You can answer it again.  
 4 A Correct.  
 5 BY MR. GRIFFIS:  
 6 Q And none of the figures were statistically  
 7 significant, right?  
 8 A Correct.  
 9 Q Now, you mentioned there has been a  
 10 publication by the North American Pooled Project for  
 11 multiple myeloma, right?  
 12 A Yes.  
 13 Q And the findings were negative for  
 14 glyphosate in multiple myeloma, right?  
 15 MS. FORGIE: Objection.  
 16 A Yes.  
 17 BY MR. GRIFFIS:  
 18 Q You don't claim, sir, that glyphosate or  
 19 any glyphosate-containing product causes any kinds of  
 20 cancer other than Non-Hodgkin's Lymphoma, correct?  
 21 MS. FORGIE: Objection.  
 22 A That's correct.  
 23 BY MR. GRIFFIS:  
 24 Q In other publications upon which you've  
 25 been a coauthor, sir, you've expressed concerns about

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1 proxy respondents, right?  
 2 MS. FORGIE: Objection.  
 3 A Proxies are always a concern. They have to  
 4 be considered.  
 5 BY MR. GRIFFIS:  
 6 Q They're more likely to give don't know  
 7 answers than self responders, right?  
 8 MS. FORGIE: Objection.  
 9 A Yes.  
 10 BY MR. GRIFFIS:  
 11 Q They are more likely to give unreliable  
 12 answers with regard to pesticide exposure, right?  
 13 MS. FORGIE: Objection.  
 14 A I would say maybe less reliable. I  
 15 wouldn't say unreliable.  
 16 MR. GRIFFIS: Take a two-minute break?  
 17 MS. FORGIE: Sure.  
 18 MR. GRIFFIS: Give me five if you prefer.  
 19 MS. FORGIE: I'd rather take five.  
 20 THE VIDEOGRAPHER: Off the record at 1:34  
 21 p.m.  
 22 (Brief recess.)  
 23 THE VIDEOGRAPHER: We are back on the  
 24 record at 1:54 p.m.  
 25 (Exhibit 16-13, September 21, 2005 draft

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1 publication, was marked for identification.)  
 2 BY MR. GRIFFIS:  
 3 Q Doctor, I've marked as Exhibit 13 a copy at  
 4 the top where it says, "Date of last revision:  
 5 September 21, 2015," draft publication on glyphosate  
 6 used in risk of NHL, Non-Hodgkin's Lymphoma, major  
 7 histological subtypes in the North American Pooled  
 8 Project; did I identify that correctly?  
 9 A Yes.  
 10 Q This is one of the drafts that was  
 11 exchanged among the coauthors of the North American  
 12 Pooled Project of this potential publication of  
 13 glyphosate and NHL, correct?  
 14 A Yes.  
 15 Q On page 8, sir, under "statistical  
 16 analyses," the second paragraph, it says at the  
 17 start, "It was possible that the use of other  
 18 pesticides in the NAPP may confound the relationship  
 19 between glyphosate used and NHL risk;" did I read  
 20 that correctly?  
 21 A Yes.  
 22 Q And then at the end of the paragraph, it  
 23 explains which pesticides were correlated with  
 24 glyphosate as confounders saying, "Pesticides that  
 25 were most strongly correlated with glyphosate,

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1 defined in this study as Spearman coefficients  
 2 greater than or equal to 0.35 and Cohen's Kappa value  
 3 greater than or equal to 0.30, and that were  
 4 significantly or strongly associated with NHL in  
 5 previous studies were evaluated as confounders," and  
 6 it identifies the herbicides 2,4-D and Dicamba and  
 7 Malathion, right?  
 8 A Yes.  
 9 Q And it's correct that those were  
 10 confounders in this data, correct?  
 11 MS. FORGIE: Objection.  
 12 A Well, they were considered to be  
 13 confounded. I don't know the underlying data, but  
 14 they were highly correlated with glyphosate and at  
 15 least 2,4-D and I think others, too, have been  
 16 reported as increasing risks, so they were considered  
 17 potential confounders and that's why they adjusted  
 18 for them.  
 19 BY MR. GRIFFIS:  
 20 Q When you say "increasing the risk," you  
 21 mean increasing the risk of NHL?  
 22 A Yes.  
 23 Q Turn to page 10, please.  
 24 MS. FORGIE: You can take your time to  
 25 review this if you need to.

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1 A Okay.  
 2 BY MR. GRIFFIS:  
 3 Q I'm looking at the header "Glyphosate use  
 4 and NHL risks overall and by major histological  
 5 subtype." And the first paragraph reports a  
 6 significant association between glyphosate used in  
 7 risk of NHL overall and with regard to subtypes, it  
 8 says the magnitude of risk differed by subtype.  
 9 A Yes.  
 10 Q And that's an accurate reflection of the  
 11 data in the North American Pooled Project, right?  
 12 MS. FORGIE: Objection.  
 13 A Yes.  
 14 BY MR. GRIFFIS:  
 15 Q It goes on to say, "Associations were  
 16 attenuated and no longer statistically significant  
 17 when the model represented by odds ratio A was  
 18 further adjusted for ever use of 2,4-D, Dicamba and  
 19 Malathion," right?  
 20 A Yes.  
 21 Q So ever and never -- the ever and never  
 22 association disappeared when it was controlled for  
 23 confounding by these other pesticides, right?  
 24 A Correct.  
 25 Q The next paragraph discusses duration and

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1 says "There was a general inverse trend in risks  
 2 except for cases of SLL" -- what is SLL?  
 3 A Small lymphocytic lymphoma.  
 4 Q -- "where the odds increase with longer  
 5 duration of glyphosate used."  
 6 And this trend was of borderline  
 7 statistical significance, correct?  
 8 A Yes.  
 9 MS. FORGIE: Objection.  
 10 BY MR. GRIFFIS:  
 11 Q So glyphosate use examined by duration  
 12 shows a general inverse trend for most of the  
 13 subtypes examined, right?  
 14 MS. FORGIE: Objection.  
 15 A That's what it says.  
 16 BY MR. GRIFFIS:  
 17 Q And then that's an accurate description of  
 18 the data, right?  
 19 MS. FORGIE: Objection.  
 20 A Yeah, it's an accurate -- apparently it's  
 21 an accurate description of the data from this early  
 22 version of the manuscript.  
 23 BY MR. GRIFFIS:  
 24 Q An additional adjustment for the chemicals  
 25 2,4-D, Dicamba and Malathion generally resulted in

1 attenuated risk estimates compared to models  
2 unadjusted for these pesticides, correct?

3 MS. FORGIE: Objection.

4 A Except for SLL.

5 BY MR. GRIFFIS:

6 Q Except for SLL for which the addition of  
7 these agents in logistic regression model had no  
8 substantial effect on risk, correct?

9 A Correct.

10 Q Was there a later draft of this document  
11 among the documents that you gave to Ms. Forgie?

12 A There's probably more than one.  
13 (Phone ringing).

14 Q How recent would the drafts be dated,  
15 approximately?

16 MS. FORGIE: Objection.

17 A I don't know how many -- there had been --  
18 there are more recent drafts, let me say that. I  
19 don't know how many.

20 BY MR. GRIFFIS:

21 Q I'm trying to understand generally, was  
22 this something that was worked on some in 2016 so  
23 there might be a draft or two or is it something  
24 that's being actively revised right now so there  
25 would be much more up-to-date drafts or what?

1 A It was definitely worked on in 2016 and  
2 even 2017.

3 Q Did you turn over drafts from 2016 and  
4 2017?

5 MS. FORGIE: Objection.

6 A To who?

7 BY MR. GRIFFIS:

8 Q Ms. Forgie.

9 A No, I didn't.

10 Q Do you have drafts from 2016 and 2017?

11 A I do.

12 MS. FORGIE: To be clear, he didn't give me  
13 any.

14 BY MR. GRIFFIS:

15 Q The next paragraph, sir, on page 10, talks  
16 about frequency of glyphosate used, correct? This is  
17 the greater than or equal to two days and greater  
18 than zero, less than or equal to two days a year?

19 A Yes.

20 Q And the last sentence says, "The pattern of  
21 increased risks with more frequent glyphosate  
22 handling was still apparent for NHL overall and all  
23 subtypes, all the trends were no longer statistically  
24 significant upon adjusting for these three  
25 pesticides," correct?

1 MS. FORGIE: Objection.

2 A That's what it says.

3 BY MR. GRIFFIS:

4 Q Does that accurately reflect the data?

5 MS. FORGIE: Objection.

6 A It may have changed in subsequent  
7 manuscripts.

8 BY MR. GRIFFIS:

9 Q Do you claim that in the current  
10 manuscript, any of the associations between  
11 glyphosate and Non-Hodgkin's Lymphoma or any subtype  
12 that control for other pesticides is statistically  
13 significant?

14 A Yes.

15 Q Which?

16 A So for greater than two days, there's a  
17 statistically significant increase for NHL overall  
18 and for large B-cell lymphoma. And there are  
19 nonsignificant increase of the same magnitude for the  
20 other subtypes as well.

21 Q What do you mean by "nonsignificant  
22 increase of the same magnitude"?

23 A It means that if NHL overall was -- had a  
24 twofold increase risk that was statistically  
25 significant, the other subtypes had a similar

1 magnitude, twofold, greater or less, but not  
2 statistically significant.

3 Q Okay. So --

4 A So that should be actually reflected in  
5 table 2 in the manuscript here which you don't  
6 provide.

7 Q Which was not provided to us.

8 A Well --

9 Q So the data for duration, number of years  
10 of exposure, that shows a negative trend with  
11 increasing duration, correct, meaning most recent  
12 data?

13 MS. FORGIE: Objection.

14 A I don't -- I can't comment on it. I don't  
15 remember that precisely, but I do remember that  
16 duration was only significant for small lymphocytic  
17 lymphoma; for others, it didn't increase duration, it  
18 did not significantly increase risk. The risks might  
19 actually have gone down. I don't remember that data  
20 precisely without having it in front of me.

21 Q Well, we have Exhibit 12, the slide show --

22 MS. FORGIE: Well, objection.

23 Q -- on the table of proxy versus self  
24 respondents for duration, frequency and lifetime  
25 days.

1 MS. FORGIE: Objection, he's already stated  
2 there's tables missing from Exhibit 13.

3 BY MR. GRIFFIS:

4 Q You have drafts with these tables in them?

5 A I do.

6 Q I demand production of them.

7 MS. FORGIE: Don't respond.

8 BY MR. GRIFFIS:

9 Q That wasn't for you, that was for you.

10 The duration data, sir -- you can take a  
11 look at the slide show if that helps you, three pages  
12 from the back, looking at number of years of  
13 exposure -- there's a negative trend with increasing  
14 duration of exposure in the North American Pooled  
15 Project data, correct?

16 A Correct.

17 Q And that's reflected in the current drafts  
18 as well, right?

19 MS. FORGIE: Objection. You mean this  
20 draft?

21 MR. GRIFFIS: No, I mean the one on his  
22 computer.

23 A That's what the words in the draft say.

24 BY MR. GRIFFIS:

25 Q I'm not talking about this draft, I'm

1 BY MR. GRIFFIS:

2 Q So the direction of the trend, when you  
3 look at the number of years, is the opposite of the  
4 trend when you look at the number of days per year  
5 and when you combine the two, significance is  
6 extinguished, correct?

7 A Correct. I think we saw this same  
8 phenomenon on our paper on 2,4-D, so my impression of  
9 the data is intensity of exposure is a better -- is a  
10 better measure of risk than length of exposure.

11 Q Or it's a better way to get statistically  
12 significantly findings to report?

13 MS. FORGIE: Objection.

14 A That's what epidemiologists look to do.

15 BY MR. GRIFFIS:

16 Q Find the best significant risks to report?

17 MS. FORGIE: Objection.

18 A No, to find the truth.

19 BY MR. GRIFFIS:

20 Q Why is the truth the biggest number?

21 A I didn't say it was. I just said  
22 epidemiologists look at things in different ways to  
23 find the truth.

24 Q Okay. What you said was it seems that the  
25 intensity is the best measure. It also is the

1 talking about the most recent one on your computer.

2 MS. FORGIE: I'm going to object to that.  
3 That's confidential. I don't know how you got a copy  
4 of this draft, but that information is confidential.  
5 This is not a published document. It's unfair to be  
6 asking him things he may or may not have seen.

7 A I don't remember precisely. I do remember  
8 the duration was -- did not show any significant  
9 results except possibly for small lymphocytic  
10 lymphoma.

11 BY MR. GRIFFIS:

12 Q The data that you've been -- your group has  
13 been reporting publicly -- and you can see this in  
14 the slide show -- shows a negative trend with  
15 increasing duration, right?

16 A For NHL overall.

17 Q And it shows a positive trend for frequency  
18 when calculated in terms of number of days per year,  
19 correct?

20 A Yes.

21 Q And it shows nothing statistically  
22 significant when the two are summed, correct, number  
23 of years times number of days per year, right?

24 MS. FORGIE: Objection.

25 A That's correct.

1 measure that has a statistically significant finding  
2 associated with it.

3 Why, other than the fact that it's the only  
4 one that has a statistically significant increased  
5 trend, is it the best measure?

6 MS. FORGIE: Objection, asked and answered.  
7 You can answer it again.

8 A Well, this is my personal opinion, and that  
9 is that the intensity of the exposure is the most  
10 important feature of the exposure. If you get high  
11 doses over a short period of time, it is, in general,  
12 increases risk much more than lower exposures over a  
13 long period of time. So if you do the product of low  
14 exposures over a long period of time, you don't  
15 get -- often don't get much of an increase in risk.  
16 That's what we saw in 2,4-D. But if you look at high  
17 exposures over a short period of time, you see  
18 increased risk because it's the high exposures that  
19 really increase the risk.

20 BY MR. GRIFFIS:

21 Q What your data is measuring is not how much  
22 glyphosate people were exposed to, but on how many  
23 days during a particular year they were exposed,  
24 right?

25 MS. FORGIE: Objection.

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1 A It's a surrogate for that.  
 2 BY MR. GRIFFIS:  
 3 Q And do you know of any data showing it's a  
 4 useful surrogate or that it reliably correlates with  
 5 the amount of glyphosate to which they were actually  
 6 exposed?  
 7 A Not for glyphosate, no.  
 8 Q For any substance?  
 9 A Not that I can remember. But it's a  
 10 commonly used surrogate.  
 11 Q On page 13, sir --  
 12 A Page 13?  
 13 MS. FORGIE: Back to Exhibit 13?  
 14 MR. GRIFFIS: Yes.  
 15 BY MR. GRIFFIS:  
 16 Q Second full paragraph, looking at the first  
 17 two sentences, "a fairly consistent decrease in NHL  
 18 risk was found when odds ratios were further adjusted  
 19 for pesticides 2,4-D, Dicamba and Malathion. This  
 20 observation suggested that elevated risk of NHL may  
 21 be attributed in part to pesticides other than  
 22 glyphosate;" did I read that correctly?  
 23 A Yes.  
 24 Q Is that a correct description of the data  
 25 in the most recent draft?

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1 MS. FORGIE: Objection.  
 2 A Yes, I think so.  
 3 BY MR. GRIFFIS:  
 4 Q Page 15, second full paragraph, starting  
 5 with the second sentence, "NHL is a constellation of  
 6 heterogenous cancers that each has its own causes,  
 7 risk factors and etiologies" --  
 8 A Make sure I know where you're at.  
 9 Q Page 15, second full paragraph, starting  
 10 with second sentence. "NHL is a constellation of  
 11 heterogenous cancers that each has its own causes,  
 12 risk factors and etiologies. Pesticides, including  
 13 individual agents such as glyphosate, may exert  
 14 different effects on these subtypes and the large  
 15 size of the NAPP made it possible to parse this out;"  
 16 did I read that correctly?  
 17 A Yes.  
 18 Q Is that an accurate description of the data  
 19 included the most recent drafts?  
 20 MS. FORGIE: Objection.  
 21 A Yes. Although it only looked at the most  
 22 common subtype -- the three most common subtypes.  
 23 (Exhibit 16-14, 8/26/15 e-mail, was marked  
 24 for identification.)  
 25 BY MR. GRIFFIS:

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1 Q Sir, I've marked as Exhibit 14 an e-mail  
 2 from Aaron Blair dated August 26th, 2015 to multiple  
 3 people, including yourself.  
 4 When Dr. Pahwa was headed to Brazil for her  
 5 presentation, she circulated her slides to you and  
 6 the other coauthors, right?  
 7 A Yes.  
 8 Q And Aaron Blair suggested to the group that  
 9 the group should notify IARC that the presentation  
 10 was coming, correct?  
 11 A Yes.  
 12 Q And nobody disagreed with that, right?  
 13 MS. FORGIE: Objection. I mean, in this  
 14 e-mail?  
 15 A I don't remember. I don't think anybody  
 16 disagreed, but I don't remember.  
 17 BY MR. GRIFFIS:  
 18 Q Why was it important to notify IARC?  
 19 A I don't know. It wasn't my idea. I think  
 20 IARC was interested in the results of this study, so  
 21 maybe they -- maybe they thought that it was  
 22 appropriate to send the slides to IARC. I don't  
 23 know.  
 24 Q Did you have any opinion on whether it was  
 25 important to notify IARC?

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1 A No.  
 2 (Exhibit 16-15, 8/27/15 e-mail, was marked  
 3 for identification.)  
 4 BY MR. GRIFFIS:  
 5 Q Exhibit 15, sir, is an e-mail thread. If  
 6 you look at the bottom of the first page, on August  
 7 26th, 2015 --  
 8 MS. FORGIE: Hold on, I have a problem with  
 9 my mic.  
 10 BY MR. GRIFFIS:  
 11 Q On August 26th, 2015, Aaron Blair sent a  
 12 number of talking points for consideration to the  
 13 group, correct?  
 14 MS. FORGIE: Objection.  
 15 A Yes.  
 16 BY MR. GRIFFIS:  
 17 Q He said, "Below is a start of thinking  
 18 about talking points to questions about IARC," right?  
 19 A Right.  
 20 Q And one of the things he said is  
 21 "adjustment for other pesticides made the  
 22 associations that you saw not significant," right?  
 23 A That's correct.  
 24 MS. FORGIE: Objection.  
 25 A That's for ever and never, I believe.



1 BY MR. GRIFFIS:

2 Q He said, "the association may differ by  
3 histological type and that FL was not linked to  
4 glyphosate at all," correct?

5 MS. FORGIE: Objection.

6 A That's what he says. I'm not sure that --  
7 I'm not sure what he's basing that on.

8 BY MR. GRIFFIS:

9 Q You disagree that FL is not linked to  
10 glyphosate at all?

11 A I don't have -- I don't have an opinion one  
12 way or the other.

13 Q Do you have an opinion, one way or the  
14 other, whether FL is linked to glyphosate at all in  
15 the NAPP data?

16 A If you look at the greater than two days  
17 exposure, the odds are increased for FL. It's just  
18 not significant.

19 Q What is FL?

20 A Follicular lymphoma.

21 (Exhibit 16-16, 11/27/14 e-mail, was marked  
22 for identification.)

23 BY MR. GRIFFIS:

24 Q By the way, does this refresh your memory  
25 that you received e-mails from Aaron Blair?

1 MS. FORGIE: Objection. He already stated  
2 that.

3 A There were e-mails circulating --

4 MS. FORGIE: There's no question pending.

5 BY MR. GRIFFIS:

6 Q You remember earlier in the deposition you  
7 said you never got an e-mail from Aaron Blair?

8 MS. FORGIE: Objection, that  
9 mischaracterizes his testimony.

10 A No. What I said was that I had not  
11 communicated directly with Aaron Blair about -- these  
12 were group e-mails, okay, so they were going around  
13 to everyone. I didn't do any direct communication  
14 back and forth to Aaron Blair. These were all group  
15 e-mails.

16 BY MR. GRIFFIS:

17 Q So when you were interpreting our document  
18 requests for this deposition, you interpreted any  
19 communications with Chris Portier and Aaron Blair and  
20 others as meaning communications that were just the  
21 two of you going back and forth rather than e-mails  
22 coming to you and others from those people?

23 A They were group e-mails.

24 Q So you interpreted it to exclude any group  
25 e-mails; is that right?

1 MS. FORGIE: Objection. He's also stated  
2 he didn't save all these. How could he remember.  
3 This isn't fair.

4 MR. GRIFFIS: That's a speaking objection.  
5 I move to strike it.

6 A It's true, I don't have these e-mails in my  
7 computer anymore, so I didn't remember -- I didn't  
8 remember some of them, although I knew there was this  
9 group e-mail conversation, okay, and you have it  
10 here.

11 BY MR. GRIFFIS:

12 Q I have some of it.

13 Sir, do you know for a fact that there are  
14 no e-mails on your computer pertaining to glyphosate  
15 in any way that are to or from Aaron Blair or Chris  
16 Portier or the other people we listed with or without  
17 others copied?

18 MS. FORGIE: Objection, asked and answered.

19 A So the only things that I have are the  
20 PowerPoint presentations that were sent to Ms. Forgie  
21 and I assumed it had been sent on to you. So I gave  
22 her everything I had.

23 BY MR. GRIFFIS:

24 Q Were there e-mails associated with those  
25 PowerPoint presentations?

1 A With some of them there were, yes.

2 Q And the drafts of the NAPP study on  
3 glyphosate and NHL, are there e-mails associated with  
4 those?

5 MS. FORGIE: Objection. He never stated.

6 A You mean with the PowerPoint presentations?

7 BY MR. GRIFFIS:

8 Q I'm talking about the drafts of the  
9 in-press NAPP study on glyphosate.

10 MS. FORGIE: Objection, mischaracterizes  
11 his prior testimony.

12 A Sure there are e-mails associated with that  
13 because those were circulated in the group e-mails as  
14 well and people commented, made changes and this  
15 is -- this is normal.

16 BY MR. GRIFFIS:

17 Q Yes, sir. So you do have e-mails with some  
18 other people on our list that you're calling group  
19 e-mails that pertain to the exchanges about the  
20 drafts of the NAPP; is that right?

21 MS. FORGIE: Objection, mischaracterizes  
22 his testimony. Also, you've produced information  
23 that he would consider confidential and I do as well.

24 A I do as well.

25 BY MR. GRIFFIS:

1 Q Yes, sir. Is what I said correct, though?  
 2 MS. FORGIE: Objection. If it relates to  
 3 confidential information about confidential drafts --  
 4 A I don't know. I didn't go back and look  
 5 for manuscripts because we considered manuscripts  
 6 confidential.  
 7 BY MR. GRIFFIS:  
 8 Q Yes, sir.  
 9 A And the conversations around manuscripts  
 10 confidential. These are works in progress.  
 11 Q There are e-mails that are associated with  
 12 the draft, for example, e-mails transmitting the  
 13 drafts or commenting on the drafts between you and  
 14 your coauthors with regard to the pending NAPP  
 15 publication that is in press right now, correct?  
 16 MS. FORGIE: Objection, you're getting into  
 17 confidential information. I've already told you he  
 18 did not provide me any manuscripts because he  
 19 considered them confidential. They didn't come to me  
 20 and they're not going to you.  
 21 MR. GRIFFIS: I'm asking about the  
 22 existence of any e-mails, not the content of e-mails.  
 23 A There were e-mails. I'm not sure if I have  
 24 them on my computer or not.  
 25 BY MR. GRIFFIS:

1 BY MR. GRIFFIS:  
 2 Q All right. I'm sorry. I've gotten a  
 3 little confused. Can I see what you have marked in  
 4 front of you.  
 5 So January 14th, 2016 e-mail from Kenneth  
 6 Cantor to you, among other people, attaching five  
 7 abstracts for the IARC meeting and these are NAPP  
 8 abstracts, correct?  
 9 A Correct.  
 10 Q Tell me what the NAPP abstracts for the  
 11 IARC meeting are.  
 12 A I'm not sure I can tell you all of them.  
 13 Q I don't mean list each one.  
 14 What's the IARC meeting and why is NAPP  
 15 sending abstracts?  
 16 A So the IARC apparently has an annual  
 17 meeting or a regular meeting in which new research is  
 18 presented and the NAPP group targeted these five  
 19 abstracts to the IARC meeting for presentation and  
 20 one of them was the NHL abstract. The other ones, I  
 21 don't know exactly what they were. I think one was  
 22 myeloma. I don't know what the other ones were.  
 23 Q Was someone on the team tasked with putting  
 24 these abstracts together?  
 25 MS. FORGIE: Objection.

1 Q I would ask you not to delete any e-mails  
 2 that have the word "glyphosate."  
 3 MS. FORGIE: Don't respond.  
 4 MR. GRIFFIS: And I'll ask you to see that  
 5 that that happens as counsel.  
 6 MS. FORGIE: You're not entitled to  
 7 confidential information. I don't know where you  
 8 received these e-mails. I don't know where you  
 9 received these manuscripts. But I can tell you I did  
 10 not receive any manuscripts from Dr. Weisenburger  
 11 because that is confidential and you know it is. I  
 12 don't have any draft manuscripts, but if I did, I  
 13 would not produce them. It's privileged.  
 14 MR. GRIFFIS: Anything else?  
 15 MS. FORGIE: I'll probably think of  
 16 something else.  
 17 MR. GRIFFIS: Save it for briefing.  
 18 MS. FORGIE: I think it's inappropriate.  
 19 Have these been previously produced, Counsel, these  
 20 draft manuscripts?  
 21 MR. GRIFFIS: Yes, it's all been produced.  
 22 MS. FORGIE: When were they produced?  
 23 MR. GRIFFIS: By Aaron Blair.  
 24 MS. FORGIE: That's not what I was told,  
 25 but I'll look again. Thank you.

1 A It was Pahwa and the Canadian group.  
 2 BY MR. GRIFFIS:  
 3 Q And Ken Cantor, Dr. Cantor writes, at the  
 4 bottom of the first page here, "results in the second  
 5 abstract (glyphosate) are less than convincing, given  
 6 that control for other pesticides results in  
 7 attenuated odds ratios which aren't in the abstract,"  
 8 correct?  
 9 A That's what it says.  
 10 Q And do you agree with that?  
 11 A I can't remember what was in that final  
 12 abstract. These are drafts of abstracts. So  
 13 apparently in the draft that he saw that was the  
 14 case, but I don't remember.  
 15 (Exhibit 16-17, 8/22/16 e-mail, was marked  
 16 for identification.)  
 17 BY MR. GRIFFIS:  
 18 Q Sir, on August 14th, 2016, you e-mailed  
 19 Dr. Christopher Portier asking him the status of an  
 20 EU glyphosate review and wanted to know the status?  
 21 A Correct.  
 22 Q Wanted to know if glyphosate had been  
 23 approved for use and if there had been restrictions,  
 24 right?  
 25 A Right. This is in followup to the letter

1 we had written as a group where he had been the first  
2 author and then the manuscript, so I was just curious  
3 to know whether there had been any action on the part  
4 of the EU, so it was a simple question.

5 Q Is this the only occasion on which you have  
6 directly corresponded with Portier directly, not with  
7 group e-mail, but you e-mailing him and him  
8 responding to you?

9 MS. FORGIE: Objection, asked and answered.  
10 You can answer it again.

11 A To the best of my knowledge. I've never  
12 met him, I've never -- so I don't really know him.  
13 This was in followup to the document that I was a  
14 cosignature on.

15 BY MR. GRIFFIS:

16 Q The document on which you're a cosignature,  
17 there were actually a couple of them, there was a  
18 letter to the EU commissioner and there was a  
19 followup publication letter, correct?

20 A Right.

21 Q And as to those, did you receive e-mails  
22 from Chris Portier to you and to others soliciting  
23 your signing on to those letters?

24 MS. FORGIE: Objection, asked and answered.

25 A I received an e-mail from someone. I don't

1 A Yeah, but this is two or three years  
2 possibly. I don't have it on my computer.

3 Q Have you looked for it?

4 A I know it's not there because nothing --  
5 practically nothing there from 2016 is still there.  
6 And this was prior to this. I don't know when it  
7 was. It's probably '15.

8 Q Dr. Portier responded to you and told you  
9 that the EU approved the use of glyphosate for 18  
10 months while the European Chemical Agency reviews the  
11 data and then you forwarded that to Aaron Blair,  
12 correct?

13 A I did, that's right.

14 Q And you said, "It seems important to get  
15 our US/Canadian paper on this" -- meaning the NAPP  
16 data, right -- "submitted soon so it could be  
17 considered in this review." You just nodded, but the  
18 court reporter can't take that down.

19 A True, I was concerned it was taking a long  
20 time to get the NAPP data submitted, so I was trying  
21 to push the group, the NAPP group to get the data  
22 submitted so that it could be publicly available.

23 Q What do you consider the NAPP data to  
24 contribute to the picture on glyphosate in NHL?

25 A Well, it -- as we've discussed, it pools

1 know who it was.

2 BY MR. GRIFFIS:

3 Q And did you just respond and say yes, I  
4 will sign off or was there an exchange on the  
5 subject?

6 MS. FORGIE: Objection.

7 A There was not an exchange. I read it -- I  
8 read -- I read one or two drafts, I made some  
9 suggested corrections in the drafts and sent them  
10 back to Portier. They weren't substantial changes.  
11 They were mainly grammar and phrasing of things.

12 BY MR. GRIFFIS:

13 Q Are they still on your computer, the edits?

14 A No.

15 Q He sent a draft document in Word format or  
16 some other format and you edited it on your computer  
17 and sent the changes back?

18 MS. FORGIE: Objection.

19 A It would have printed -- I don't do a lot  
20 of stuff on my computer so I did it manually. It  
21 probably would have been scanned and sent back to  
22 him.

23 BY MR. GRIFFIS:

24 Q Would there be a PDF image on your computer  
25 possibly?

1 the data from two large studies and it's able to  
2 do -- have a more powerful approach to analyzing some  
3 of the dose response and subtype data.

4 Q What is the information that is different  
5 in the NAPP data from what is available in the  
6 underlying data?

7 A Well, the data is very similar to what's  
8 been presented in the various meetings.

9 Q When you say "the various meetings," you're  
10 referring to, among others, the Brazil slide show?

11 A Right.

12 (Exhibit 16-18, 5/5/16 e-mail, was marked  
13 for identification.)

14 BY MR. GRIFFIS:

15 Q Sir, Exhibit 18, a May 5th, 2016 e-mail  
16 from Kathryn Forgie to you forwarding an article,  
17 correct?

18 A Yes.

19 Q And you responded saying, "when do you want  
20 to discuss your first case," correct?

21 A Correct.

22 Q What did you mean by "first case"?

23 A Well --

24 MS. FORGIE: I'm going to object. I think  
25 this is all privileged information. I'm going to let

1 him answer, but I'm not going to waive our privilege.

2 A She had some specific cases she wanted to  
3 discuss.

4 BY MR. GRIFFIS:

5 Q Like cases about the specific people rather  
6 than about general causation?

7 A Yes.

8 Q And you forwarded that to Aaron Blair and  
9 said "FYI;" why did you do that?

10 A Probably to let him know I was consulting  
11 with her. I'm not sure he knew that I was retained  
12 by her.

13 Q When is the last time you purged your  
14 e-mails, sir?

15 MS. FORGIE: Objection, asked and answered.  
16 You can answer it again.

17 A Maybe within the last few months. I'm not  
18 sure exactly when.

19 BY MR. GRIFFIS:

20 Q Now, we discussed earlier that there was an  
21 open letter to the EU commissioner that you signed  
22 off on at the request of either Chris Portier or  
23 someone else who e-mailed you, you couldn't remember  
24 whom. And later, there was a publication on  
25 differences between the IARC analysis and the

1 for identification.)

2 MS. FORGIE: 19 is the additional  
3 materials; is that right?

4 MR. GRIFFIS: Plus your cover e-mail.

5 MS. FORGIE: I haven't seen the cover  
6 e-mail.

7 BY MR. GRIFFIS:

8 Q Sir, Exhibit 19 is an e-mail that we  
9 received yesterday, which was a Sunday, at 12:56 p.m.  
10 Eastern time, attaching what was called "an  
11 additional materials list."

12 Do you recognize the additional materials  
13 list?

14 A Yes, I prepared these lists.

15 Q When did you review the materials on the  
16 additional materials list?

17 A Over the last few months.

18 Q And there are 45 citations on the  
19 additional materials list, right?

20 A Yes, I guess so. Let me look.

21 Q Okay. They're numbered.

22 A It looks different than what I sent.

23 Q Let me see, make sure I give you the right  
24 thing. Yeah, that's what we received.

25 A So it was actually three separate lists

1 analysis performed by the European Food Safety  
2 Agency, correct?

3 MS. FORGIE: Let me stop for a second.  
4 I've just been advised there's a problem with phone  
5 interference. Is there any way we can check on that?

6 MR. GRIFFIS: We can go off the record.

7 THE VIDEOGRAPHER: Off the record at 2:31  
8 p.m.

9 (Brief recess.)

10 THE VIDEOGRAPHER: We are back on the  
11 record at 2:45 p.m. This marks the beginning of  
12 Videotape Number 3 of the deposition of  
13 Dr. Weisenburger.

14 MS. FORGIE: I've been advised that the  
15 rough draft, which is exhibit -- I mean the draft  
16 manuscript, which is Exhibit 13, was, in fact,  
17 produced by Dr. Blair but not attached to his  
18 deposition which is why I didn't know about it. So I  
19 apologize. I stand corrected on that. We still  
20 believe that all of this information is privileged in  
21 terms of the academic privilege and we don't think  
22 it's appropriate to discuss it, nor would we  
23 produce -- nor have any drafts been produced to me  
24 because of that privilege. That's all.

25 (Exhibit 16-19, 9/10/17 e-mail, was marked

1 which looks like they've been consolidated into one  
2 list.

3 Q When did you send the three lists, sir?

4 A It was within --

5 MS. FORGIE: Objection, that's privileged.

6 THE WITNESS: Did I send it, it's  
7 privileged?

8 MS. FORGIE: Yeah, communications between  
9 us are privileged.

10 MR. GRIFFIS: Please direct him not to  
11 answer that.

12 MS. FORGIE: Don't answer that.

13 BY MR. GRIFFIS:

14 Q Sir, did you send the first of those lists  
15 more than a week ago?

16 MS. FORGIE: Don't answer that. Actually,  
17 you can go ahead and answer it. Don't say anything  
18 about any communications we had, just the date.

19 A Yeah, so it would have been sent last  
20 Tuesday, the day after Labor Day.

21 BY MR. GRIFFIS:

22 Q All three lists?

23 A Yes.

24 Q Have you been -- and why were there three  
25 lists?

1 A One was additional materials reviewed, one  
2 was additional materials relied on and one was other  
3 additional things reviewed.

4 Q And what is the difference between  
5 reviewed, relied on and other additional things  
6 reviewed?

7 MS. FORGIE: Objection.

8 A Well, I can't tell -- I mean, I could show  
9 you the three lists. I have them with me.

10 MS. FORGIE: No, that's okay. Just if  
11 you -- if there's a difference, you can tell us. If  
12 not --

13 A So there was a list of manuscripts that I  
14 relied on that I would have referenced in my -- in my  
15 report, if I had them at the time I wrote the report,  
16 there was a list of materials I reviewed that I  
17 wouldn't have referenced in my report and then there  
18 was a list of other materials that I reviewed that I  
19 thought were important like the -- for example, the  
20 letter to the commissioner of the EFS -- whatever it  
21 is, EFSA, and the manuscript that I was a coauthor on  
22 with Portier. I also listed the Aaron Blair  
23 deposition -- no, that was on my other one. I listed  
24 the draft of the Agricultural Health Study that was  
25 attached to the Aaron Blair deposition, I listed the

1 most recent meta analysis that was done, things that  
2 I had reviewed since I wrote my report.

3 BY MR. GRIFFIS:

4 Q When you reviewed the Blair deposition, did  
5 it come with exhibits attached?

6 A I don't think it did. I don't think it  
7 did. Because otherwise I would have printed it. So  
8 when I reviewed the Blair deposition, I had only the  
9 deposition and then only later, fairly recently, did  
10 I ask for --

11 MS. FORGIE: Don't give any statements  
12 about communications between us.

13 A Okay. I didn't -- I had no access to it.

14 BY MR. GRIFFIS:

15 Q So you asked to have it provided to you?

16 A Yes.

17 Q How long ago was that?

18 MS. FORGIE: Just give him the date on  
19 communications, approximately.

20 A I don't know the date. It was a month or  
21 two ago, fairly recent.

22 BY MR. GRIFFIS:

23 Q Okay. So you -- you originally had a list  
24 that showed which materials you considered important  
25 enough you would have included them in your expert

1 report had you had them at the time; is that right?

2 MS. FORGIE: Objection.

3 A I would have referenced them in my report,  
4 yes.

5 BY MR. GRIFFIS:

6 Q Do you have anything to add to your expert  
7 report or change about your expert report in the  
8 light of the various materials that you reviewed that  
9 were disclosed to us yesterday?

10 A No, there wouldn't be any substantial  
11 changes.

12 Q So these would be additional references  
13 that you would be relying on with sufficient  
14 importance to put a parenthetical referenced to them  
15 in your report; is that right?

16 A Yes.

17 MS. FORGIE: Objection.

18 BY MR. GRIFFIS:

19 Q And do you remember which references those  
20 are looking at the list in front of you?

21 A Well, this is a consolidated list.

22 Q Yes, sir.

23 A I couldn't go and tell you which was which  
24 off the top of my head. I couldn't.

25 Q So you can't unscramble the list without

1 looking at what was provided to us?

2 MS. FORGIE: Objection.

3 A Probably not.

4 BY MR. GRIFFIS:

5 Q You told us that you sent those lists two  
6 weeks ago.

7 Were there any materials that you have seen  
8 since you sent those three lists to plaintiff's  
9 counsel that you consider important enough to be on  
10 the list?

11 A No.

12 MS. FORGIE: Objection.

13 A I sent the lists last Tuesday which would  
14 have been less than a week ago.

15 BY MR. GRIFFIS:

16 Q I'm sorry, I wrote two weeks ago about  
17 something else.

18 MS. FORGIE: That's why I objected. It was  
19 the day after Labor Day is when he sent them. I know  
20 that because it was my daughter's birthday.

21 BY MR. GRIFFIS:

22 Q Did you see anything since you sent the  
23 three lists last Tuesday?

24 A No, I didn't review anything, anything new.

25 Q Yes, sir. So with last Tuesday as the

1 bound farthest forward in time, how far back does  
2 your review of documents on that list go; months?

3 A Yeah, to the time that I wrote my report,  
4 submitted my report.

5 Q So it's a catchup of everything from the  
6 time of your report until now?

7 A Yes.

8 Q And the -- when we looked at your billings,  
9 the 2017 billing and the April 19th, did that match  
10 up in any way to your expert report drafting?

11 A So the biggest -- the last and biggest bill  
12 was submitted I think right after I submitted my  
13 report.

14 Q Okay. So the hundred hours since then that  
15 you estimated that you had worked since April 19th of  
16 2017 would include your review of these materials and  
17 other work that you did; is that right?

18 A Yes.

19 MR. GRIFFIS: I'm going to make an  
20 objection on the record. This isn't for you to  
21 respond to, it's to put it on the record at this  
22 time. That is, that the Federal Rules of Civil  
23 Procedure require a timely disclosure of an expert's  
24 opinions and the bases, therefore, this certainly  
25 pertains to the bases, therefore, and that disclosure

1 has to be timely and updated in a timely fashion to  
2 permit appropriate cross-examination.

3 Because this was provided to us 45  
4 substantial citations the day before your deposition  
5 and on a Sunday while we were traveling to get all  
6 the way across the country, we reserve the right to  
7 reopen your deposition at plaintiff's counsel's  
8 expense to question you about these 45 citations and  
9 the substance thereof.

10 In addition, we reserve the right to reopen  
11 your deposition at plaintiff's counsel's cost and  
12 expense with regard to e-mails for which we will seek  
13 disclosure, drafts of the NAPP document and other  
14 documents that we requested in the Notice of  
15 Deposition that we were told, in response to the  
16 Notice of Deposition, would be produced to the extent  
17 that we didn't already have them or that they were  
18 not otherwise objectionable. And we did not receive  
19 them.

20 We will be filing appropriate motions.  
21 That doesn't call for any response from you or any  
22 action from you.

23 MS. FORGIE: I'm going to respond to it.  
24 We, of course, don't agree with that. We think that  
25 every document that was not already publicly

1 available or already produced in the MDL was produced  
2 to you except for those for which we claim academic  
3 privilege. And we believe that the academic  
4 privilege does apply to draft manuscripts of the  
5 NAPP. And he's already stated there were no e-mails  
6 that were provided that were already -- weren't  
7 already produced to you that we're aware of. And  
8 with regard to the articles, he said they don't  
9 change his opinion, they're just additional reading,  
10 they didn't change his opinion in his expert report.

11 MR. GRIFFIS: And sir, with regard to the  
12 request that I made earlier, that you do not delete or  
13 get rid of any e-mails or documents, et cetera, that  
14 also doesn't call for a response from you, but it does  
15 trigger legal obligations and I advise you to speak to  
16 counsel about that, without me sitting around, about  
17 what obligations that produces on your behalf and her  
18 behalf and the rest of the plaintiff's committee.

19 MS. FORGIE: And we don't agree with that  
20 either. We'll take it up with him separately and  
21 privately.

22 MR. GRIFFIS: Thank you.

23 BY MR. GRIFFIS:

24 Q Sir, one of the things that you have  
25 published on in the past is an increase in the

1 incidence of Non-Hodgkin's Lymphoma nationwide that  
2 began in the 1950s, correct?

3 A Yes.

4 Q And that was something that -- a number of  
5 hypotheses were generated about what could be causing  
6 that, including such things as better reporting,  
7 better surveillance and those were pretty much ruled  
8 out as explanations for the increase, correct?

9 MS. FORGIE: Objection.

10 A Well, we really don't know why it increased  
11 dramatically in that sort of 20-year period. We  
12 don't really understand why. Part of it was probably  
13 HIV/AIDS, part of it was probably better reporting,  
14 better recognition of lymphomas by pathologists. But  
15 most of it we don't understand.

16 BY MR. GRIFFIS:

17 Q And the -- what do you consider to be the  
18 known causes of Non-Hodgkin's Lymphoma that are  
19 firmly established by science?

20 A Okay. One is immunosuppression, another  
21 one is a family history of hematopoietic cancer or  
22 lymphoma, certain autoimmune diseases increase risk,  
23 certain infections increase risk, HIV/AIDS is an  
24 example, ST (indecipherable) virus infection,  
25 infection of other viruss like HTL V1 or HH V8 or

1 hepatitis C, certain bacterial infections. And then  
2 there are a variety of chemicals, solvents,  
3 pesticides, maybe other things I'm not thinking of.  
4 That's a good portion of the list.

5 Q Solvents and pesticides, those are  
6 obviously very broad categories.

7 Do you consider all solvents and all  
8 pesticides to be causes of Non-Hodgkin's Lymphoma?

9 A No. But there are certain solvents and  
10 general exposure to solvents which increase risk.  
11 And for pesticides, there are some pesticides which  
12 are accepted risk factors and other ones which are  
13 suspected and other ones that probably aren't risk  
14 factors.

15 Q Which solvents do you consider to be  
16 accepted risk factors for Non-Hodgkin's Lymphoma?

17 A So -- trying to think of the terminology --  
18 it's usually exposure to mixed solvents, often  
19 solvents including what are called mineral oils.  
20 There's some evidence for benzene. But most of the  
21 solvent literature is on general exposure to mixed  
22 solvents, so it's not parsed out very well.

23 Q Okay. So what pesticides do you consider  
24 to be accepted risk factors for Non-Hodgkin's  
25 Lymphoma?

1 MS. FORGIE: Objection.

2 A Well, I think -- there's good data on  
3 2,4-D, there's data on Lindane, there's data on --  
4 off the top of my head, I think Malathion is another  
5 one. I mean, I don't have an active list for  
6 pesticides. But those are some examples of people  
7 commonly associated with NHL.

8 BY MR. GRIFFIS:

9 Q Other than solvents and pesticides, what  
10 other environmental factors do you consider to be  
11 causes of Non-Hodgkin's Lymphoma?

12 A There's some data on exposure to diesel  
13 fumes which, in a way, would be exposure to  
14 petrochemicals and solvents, so it falls within the  
15 same category.

16 Q Do you consider that to be a generally  
17 accepted risk factor?

18 MS. FORGIE: Objection.

19 A It's a reported risk factor. I don't know  
20 whether it's generally accepted or not.

21 BY MR. GRIFFIS:

22 Q Okay. Go on.

23 A That's all I can think of at the moment.

24 Q This rising epidemic of Non-Hodgkin's  
25 Lymphoma that began in the 1950s, at least the first

1 part of the increase could not have been caused by  
2 glyphosate since glyphosate wasn't around yet,  
3 correct?

4 MS. FORGIE: Objection.

5 A That's correct.

6 BY MR. GRIFFIS:

7 Q Do you agree, sir, that most Non-Hodgkin's  
8 Lymphomas are spontaneous?

9 MS. FORGIE: Objection.

10 A Well, I think most -- I think most  
11 Non-Hodgkin's Lymphomas, we don't have an obvious  
12 etiology that we can point to.

13 BY MR. GRIFFIS:

14 Q You testified in the past that 80 to 90  
15 percent -- 80 to 90 percent of Non-Hodgkin's Lymphoma  
16 cases are idiopathic, correct?

17 MS. FORGIE: Objection.

18 A As far as we know, but I think that that's  
19 changing because we're finding more causes over time.

20 BY MR. GRIFFIS:

21 Q What do you think the percentage is now?

22 MS. FORGIE: Objection.

23 A I don't know. Maybe 70 percent.

24 BY MR. GRIFFIS:

25 Q It's more than half?

1 A Yes.

2 (Exhibit 16-20, article, was marked for  
3 identification.)

4 BY MR. GRIFFIS:

5 Q Exhibit 20 is the Eriksson study that you  
6 listed on Table 1 in your expert report; is that  
7 right?

8 A Yes.

9 Q And this is another study, like the others  
10 we've been discussing, that looked at potential  
11 associations between Non-Hodgkin's Lymphoma and a  
12 wide variety of different herbicides, insecticides  
13 and other pesticides, right?

14 A Yes.

15 Q So like McDuffie, it was an exploratory  
16 study, correct?

17 MS. FORGIE: Objection.

18 A Yes.

19 BY MR. GRIFFIS:

20 Q And you report that Eriksson showed a  
21 statistically significant response?

22 A Yes.

23 Q And you were talking about data from Table  
24 2 on page 1659, right?

25 A Yes.

1 Q So less than or equal to 10 days of  
2 exposure, there was an odds ratio of 1.69, greater  
3 than 10 days there was an odds ratio of 2.36,  
4 correct?  
5 A Yes.  
6 Q And that wasn't adjusted for other  
7 pesticides, right?  
8 A That's correct.  
9 Q And the odds that are -- the odds ratio  
10 given in Table 3, which break down by NHL subtype,  
11 also were not adjusted for other pesticides, right?  
12 A That's correct.  
13 Q You don't know if any of the odds ratios  
14 reported on either of those tables would be  
15 statistically significant if they were controlled for  
16 other pesticides; is that fair?  
17 MS. FORGIE: Objection.  
18 A Yes.  
19 BY MR. GRIFFIS:  
20 Q Now, the only odds ratio that is  
21 controlled -- the only adjusted odds ratio adjusted  
22 for exposure to other pesticides is the multivariate  
23 analysis in Table 7; is that right?  
24 A That's correct.  
25 Q The multivariate analysis there is not

1 statistically significant, correct?  
2 A That's correct.  
3 Q And Table 2, sir, exposure to various  
4 herbicides and Table 4, exposure to various other  
5 pesticides, virtually every substance looked at has an  
6 unadjusted odds ratio above one, right?  
7 MS. FORGIE: Objection.  
8 A That's true -- well, there's one that's  
9 under -- two under.  
10 BY MR. GRIFFIS:  
11 Q Yeah, I said virtually.  
12 MS. FORGIE: Objection.  
13 BY MR. GRIFFIS:  
14 Q It's true that virtually every one is over  
15 one?  
16 A To me, virtually every one means every one,  
17 but not every one.  
18 MS. FORGIE: You're talking about what's in  
19 the table.  
20 BY MR. GRIFFIS:  
21 Q Talking about Table 2 and Table 4.  
22 A Almost every one.  
23 Q Okay. That would suggest the possibility  
24 of systemic bias in the study, right, the fact that  
25 almost everything is found to be greater than one?

1 MS. FORGIE: Objection.  
2 A Well, it would suggest some kind of bias.  
3 BY MR. GRIFFIS:  
4 Q It's impossible to tell from this study  
5 whether the unconfounded odds ratio that they give  
6 for glyphosate exposure for more than 10 years would  
7 be statistically significant if it was controlled for  
8 other pesticides, right?  
9 MS. FORGIE: Can I have that question read  
10 back, please.  
11 (The requested portion of the record was  
12 read by the reporter at 3:15 p.m.)  
13 MS. FORGIE: Objection.  
14 A I don't know -- I don't know what number  
15 you're -- or what category you're talking about.  
16 BY MR. GRIFFIS:  
17 Q I need to fix it because I meant days, not  
18 years. Table 2, exposure to various herbicides,  
19 glyphosate less than or equal to 10 days and greater  
20 than 10 days.  
21 MS. FORGIE: What's the question?  
22 MR. GRIFFIS: I'm pointing him to the  
23 table.  
24 BY MR. GRIFFIS:  
25 Q The question is, there's no way to tell

1 whether the purportedly statistically significant  
2 finding for glyphosate exposure of greater than 10  
3 days duration would be statistically significant if  
4 adjusted for other pesticides, correct?  
5 MS. FORGIE: Objection.  
6 A There's no way to know that's correct.  
7 BY MR. GRIFFIS:  
8 Q There's no statistically significant odds  
9 ratio greater than one that is controlled for other  
10 pesticides in this study, the Eriksson study,  
11 correct?  
12 MS. FORGIE: Objection.  
13 A I'm sorry, can you repeat that again?  
14 BY MR. GRIFFIS:  
15 Q There's no statistically significant  
16 association between glyphosate and Non-Hodgkin's  
17 Lymphoma or any subtype of Non-Hodgkin's Lymphoma in  
18 this study that is statistically significant greater  
19 than one and controlled for other pesticides, right?  
20 A That's correct.  
21 MS. FORGIE: Objection.  
22 MR. GRIFFIS: Mark as Exhibit 1 the De Roos  
23 2005 study.  
24 MS. FORGIE: Exhibit 1?  
25 MR. GRIFFIS: 21.



(Exhibit 16-21, article, was marked for identification.)

BY MR. GRIFFIS:

Q You discuss that in your expert report on page 5, but it's not in your Table 1, correct?

A That's correct.

Q And you report that the study did not find a significantly elevated risk of cancer overall or types of cancer including NHL, right?

A Yes.

Q And you have a couple of critiques of it. You said the median followup time in the study was only 6.7 years, too short a time to detect a meaningful increase in NHL or other cancers including glyphosate, right?

A Yes.

Q Can you explain what you mean by that, please?

A Well, usually you do a cohort study, you follow the individuals for a long period of time, say 20 or even 30 years. So this was a very early preliminary analysis of data.

Q Okay. How long a period of time do you need between an exposure of an environmental -- possible environmental risk factor for Non-Hodgkin's

BY MR. GRIFFIS:

Q So if an individual is -- and you were making an intensity distinction, correct, so that if someone's -- has an intense exposure, their latency period to presentation would probably be shorter than someone with less intense exposure?

A In general.

Q So for an individual patient, you would expect to see NHL more than two years, less than 30 years after exposure, depending on intensity?

MS. FORGIE: Objection.

A So for NHL, I would expect cases to start appearing maybe two years after exposure, but you could see cases for many years, more than 30 years.

BY MR. GRIFFIS:

Q Okay. So from greater than two and no outer bound; is that right?

A Yes.

MS. FORGIE: Objection.

BY MR. GRIFFIS:

Q For epidemiology. Epidemiology obviously collects multiple people, it's not looking at one individual.

To have a meaningful test of whether a particular -- let's say pesticides to be topical, for

Lymphoma and presentation of the disease in order to detect it?

MS. FORGIE: Objection.

A You mean on average or --

BY MR. GRIFFIS:

Q Let's talk about epidemiology studies first of all.

How long a period do you need for an epidemiology study to provide useful data?

MS. FORGIE: Objection.

A For NHL?

BY MR. GRIFFIS:

Q Yes, sir, for NHL.

A Well, I don't think I can answer that in a general fashion. I think depending on the intensity of the exposure -- depends on the intensity of the exposure and length of the exposure, one can see cases of NHL as early as two years after exposure and as long as 30 or more years after exposure. So it's a very wide -- it's a very wide interval.

Q When you say as early as two years and as long as 30 years, you're talking about individuals, correct?

MS. FORGIE: Objection.

A Yes.

the particular pesticide can cause NHL, how long a period of time do you think you need between the exposures and the cancers that you're measuring?

MS. FORGIE: Objection, asked and answered. You can answer it again.

A I don't think there's any accepted answer to that. Obviously the longer, the better, yeah. So obviously the longer the better. I can't give you a more specific answer than that.

BY MR. GRIFFIS:

Q 6.7 years is too short in your view, right?

MS. FORGIE: Objection.

A In my view it's too short, yes.

BY MR. GRIFFIS:

Q Is 10 too short?

MS. FORGIE: Objection.

A No, probably not. But -- probably not.

BY MR. GRIFFIS:

Q Okay. Where -- I understand that you have to draw a line and it would be a little bit arbitrary, but we have it down between 6.7 and 10, where would you draw that line?

MS. FORGIE: Objection, mischaracterizes his testimony.

A I couldn't draw a line. I think 6.7 years

1 is too short for a cohort study. For the design of  
 2 any epidemiologic study, it would be best to have a  
 3 longer exposure, the longer the better, but I don't  
 4 have a specific number that I can apply to say this  
 5 is the magic number.

6 BY MR. GRIFFIS:

7 Q Okay. The longer the better, 6.7 is too  
 8 short, 10 is probably long enough and you couldn't  
 9 draw a line -- you couldn't be more specific in  
 10 between those two; is that fair? That's fair, sir?

11 A Yes.

12 Q Okay. And the relevant period of time is  
 13 the period between when the people in the study were  
 14 exposed to glyphosate and when the people in the  
 15 study get cancer, that's the period of time we need  
 16 to look at, right?

17 A Correct.

18 Q Now, the De Roos 2005 study, Exhibit 21,  
 19 that's part of a much larger effort called "the  
 20 Agricultural Health Study," right?

21 A That's correct.

22 Q This is one of multiple publications that's  
 23 come out of the Agricultural Health Study, right?

24 A Yes.

25 Q And that's a National Cancer Institute,

1 National Institute of Environmental Health Sciences,  
 2 et cetera, government-funded study, right?

3 A Yes.

4 Q And this is the only prospective cohort  
 5 study that looks at, among other things, possible  
 6 association between glyphosate and cancer, right?

7 A To my knowledge, yes.

8 Q And as you reported in your expert report,  
 9 the results of the study were negative, there was no  
 10 association found between glyphosate exposure and  
 11 Non-Hodgkin's Lymphoma either in crude analysis or in  
 12 analyses controlled for pesticide -- other pesticide  
 13 exposures, right?

14 MS. FORGIE: Objection.

15 A That's correct.

16 BY MR. GRIFFIS:

17 Q You don't rely on this as a study that  
 18 supports your conclusion that glyphosate can cause  
 19 Non-Hodgkin's Lymphoma, correct?

20 A That's correct.

21 Q And when the De Roos 2005 study looked at  
 22 higher exposures to glyphosate, looked at the issue  
 23 of dose response, it found no dose response; is that  
 24 right?

25 A That's correct.

1 Q And the total days of exposure to  
 2 glyphosate of exposed members in the Agricultural  
 3 Health Study cohort was significantly higher than  
 4 those in the case controlled studies that we've been  
 5 looking at so far, right?

6 MS. FORGIE: Objection.

7 A Are you talking about cumulative days?

8 BY MR. GRIFFIS:

9 Q Yes, sir.

10 A Yes, that's true.

11 Q I mean, the lowest exposure group -- I'm  
 12 looking at Table 3 on page 52 -- was between 1 and 20  
 13 days of glyphosate exposure?

14 A Right.

15 Q And the next group was 21 to 56 days and  
 16 the next one is 57 to 2678 days, right?

17 A Right.

18 Q And what they found was the risk in the  
 19 highest exposed group, people exposed from 57 to 2678  
 20 days, had a lower odds ratio than those in the lowest  
 21 exposure group, 1 to 20 days, right?

22 MS. FORGIE: Objection.

23 A That's correct.

24 BY MR. GRIFFIS:

25 Q Now, it's both for cumulative exposure days

1 and intensity weighted exposure days, correct?

2 A That's correct.

3 Q Do you have criticisms of the De Roos 2005  
 4 study other than the followup time of 6.7 years being  
 5 too short?

6 A Well, there are a number of criticisms.  
 7 One, the people that were followed were quite young.  
 8 The median age was only, I think, 45, so such a young  
 9 cohort would need longer followup than, say, a cohort  
 10 with the median age of 65. So that's another reason  
 11 why the followup is too short.

12 The other -- one of the other criticisms is  
 13 that they compared the highest tertile to the lowest  
 14 tertile rather than to those that were unexposed  
 15 which would tend to decrease that kind of analysis --  
 16 that kind of analysis would tend to decrease to the  
 17 null. There are some things that -- which lead one  
 18 to sort of question these results from such a  
 19 preliminary analysis of -- of the data.

20 Q So your three criticisms are median age of  
 21 45 being rather young, that they compared the highest  
 22 tertile -- and that was in the Table 3 we were just  
 23 talking about?

24 A Right.

25 Q Highest tertile to the lowest tertile and

1 not to the unexposed population?  
 2 A Right.  
 3 Q And you considered the 6.7 year median  
 4 followup to be too short, correct?  
 5 MS. FORGIE: Objection.  
 6 A Right.  
 7 BY MR. GRIFFIS:  
 8 Q And the only one of those three criticisms  
 9 you made in your expert report was the last, 6.7 year  
 10 median being too short to follow up, right?  
 11 MS. FORGIE: Objection.  
 12 A It ties in with the age. They tie in  
 13 together. That's the major criticism.  
 14 BY MR. GRIFFIS:  
 15 Q Did you formulate the first two criticisms  
 16 after you wrote your expert report?  
 17 MS. FORGIE: Objection.  
 18 A No.  
 19 BY MR. GRIFFIS:  
 20 Q Okay. You just didn't put them in your  
 21 expert report?  
 22 MS. FORGIE: Objection, mischaracterizes  
 23 his testimony. He said they are in there.  
 24 MR. GRIFFIS: He said they're not.  
 25 MS. FORGIE: He said they tied in together.

1 Agricultural Health Study" and it gives general data  
 2 about the Agricultural Health Study and its  
 3 participants, correct?  
 4 A Yes.  
 5 Q If you look at Table 1, sir, page 365, one  
 6 of the pieces of information they give is years that  
 7 the participants first reply back to pesticide; do  
 8 you see that?  
 9 A Yes.  
 10 Q Do you see that the median number of years  
 11 that people participating is something on the order  
 12 of 15 years with that data?  
 13 A Yes.  
 14 Q And the information collected, is it based  
 15 on information that was collected in 1993 to 1997,  
 16 according to the Exhibit 21, correct, under materials  
 17 and methods, talking about when recruitment of the  
 18 applicator occurred?  
 19 A Yeah, just let me --  
 20 MS. FORGIE: Take your time.  
 21 A Let me see the De Roos study here. 1993 to  
 22 1997.  
 23 BY MR. GRIFFIS:  
 24 Q When these initial questionnaires were  
 25 done, which was '93 to '97, the median exposure to

1 BY MR. GRIFFIS:  
 2 Q The highest tertile to lowest tertile,  
 3 that's not in there at all, right?  
 4 MS. FORGIE: Objection.  
 5 A No, I didn't mention that in my report,  
 6 something -- yeah, I don't -- I -- it's probably  
 7 something that I came upon after I wrote my report.  
 8 BY MR. GRIFFIS:  
 9 Q And you came upon it after you wrote your  
 10 report how?  
 11 A Either by reading the paper or perhaps  
 12 reading the other depositions. I don't remember.  
 13 Q You mentioned that -- never mind.  
 14 The followup time of 6.7 years in the De  
 15 Roos study, that's the number of years after the  
 16 aegis gathered information on prior exposures, right?  
 17 MS. FORGIE: Objection.  
 18 A Right, that's the followup with regard to  
 19 their survival or status.  
 20 (Exhibit 16-22, article, was marked for  
 21 identification.)  
 22 BY MR. GRIFFIS:  
 23 Q Exhibit 22, Doctor, that I've just marked  
 24 as such, is published in Environmental Health  
 25 Perspectives in April 1996. It's titled "The

1 pesticides in the cohort was already about 15 years,  
 2 right?  
 3 MS. FORGIE: Objection.  
 4 A That's correct.  
 5 BY MR. GRIFFIS:  
 6 Q And glyphosate, at the time, had been on  
 7 the market for 20 or more years, right?  
 8 A That's correct. Almost 20 years.  
 9 Q So the potential period of time in the De  
 10 Roos 2005 study for which people could have been  
 11 exposed to glyphosate, just at the time of data  
 12 collection, was 15 to 20 years, right?  
 13 MS. FORGIE: Objection.  
 14 A But we don't really know what the data is  
 15 for glyphosate.  
 16 BY MR. GRIFFIS:  
 17 Q It's potentially 15 to 20 years, right?  
 18 MS. FORGIE: Objection, asked and answered.  
 19 You can answer it again.  
 20 A This is for pesticides in general. So we  
 21 really don't know what the data is for glyphosate.  
 22 BY MR. GRIFFIS:  
 23 Q Is there a reason that the differential  
 24 would skew towards later for glyphosate and not for  
 25 other pesticides?

1 A Yes, because glyphosate was not really very  
2 highly used for many, many years. Only until the mid  
3 1990s did it really take off as being used. So it  
4 was, I think, made up maybe three percent or four  
5 percent of all the pesticides used during those early  
6 years. So it's unlikely that it contributed 15  
7 years. It's unlikely.

8 Q It's certainly not the case that the people  
9 in the De Roos study had 6.7 years between their  
10 exposure to glyphosate and developing cancer if they  
11 did develop cancer, right?

12 MS. FORGIE: Objection, asked and answered.  
13 You can answer again.

14 A Yeah, they would have had exposure because  
15 exposure goes back. But we don't know how far back  
16 it goes.

17 BY MR. GRIFFIS:

18 Q It could have gone, on average, further  
19 than 10 years, right?

20 MS. FORGIE: Objection, asked and answered.  
21 You can answer it again.

22 A It's possible.

23 BY MR. GRIFFIS:

24 Q You have no reason to say that it was 6.7  
25 years and not greater than 10 years, your threshold

1 the number is.

2 Q If the real number is 10 or greater as  
3 opposed to 6.7 you put in your expert report, then  
4 this is not an immature study, correct?

5 MS. FORGIE: Objection, asked and answered.

6 A It is an immature study because we -- for a  
7 cohort study of young applicators, it's very unlikely  
8 that you would see an increased odds ratio with such  
9 a short followup because you wouldn't have  
10 accumulated enough cases of NHL to do that.

11 BY MR. GRIFFIS:

12 Q And the followup, though, is only one part  
13 of the relevant time consideration, correct, the true  
14 time consideration is the time between exposure and  
15 the assessment of cancers, right?

16 MS. FORGIE: Objection, asked and answered  
17 several times. You're starting to badger. You can  
18 answer again.

19 A Yes, it's true. The exposure time is from  
20 the time -- it's actually the time from when they  
21 started the -- using the chemical to the time they  
22 stopped using the chemical. That's exposure time.  
23 And the latency would be the time they started using  
24 the chemical until they developed the cancer.

25 Q Okay. And that is a different number than

1 for a study yielding fruitful data on exposure to a  
2 substance and Non-Hodgkin's Lymphoma, correct?

3 MS. FORGIE: Objection, asked and answered.  
4 He just gave you a reason. You can give it to him  
5 again.

6 A I need to hear the question again.

7 BY MR. GRIFFIS:

8 Q Yes, sir. You have no reason to suppose  
9 that the true period of time for the people who were  
10 exposed to glyphosate, who developed Non-Hodgkin's  
11 Lymphoma, between their exposure and their diagnosis,  
12 was not 10 years or more, the period of time that you  
13 say it is, is a fruitful period for a study?

14 MS. FORGIE: Objection, asked and answered.  
15 You can answer it again.

16 A I have no way to know what it was.

17 BY MR. GRIFFIS:

18 Q The real number is not 6.7, right?

19 MS. FORGIE: Objection, asked and answered.  
20 You can answer it again.

21 A We really don't know what the number was.  
22 We really don't know what the number was because they  
23 could have -- they could have used glyphosate and  
24 they could have stopped before they were even  
25 enrolled in the study. So we really don't know what

1 the time between the initial questionnaire and final  
2 followup; that's a different number, right?

3 MS. FORGIE: Objection, asked and answered.  
4 You can answer it again.

5 A You're asking now exposure time or latency?

6 BY MR. GRIFFIS:

7 Q Well, the 6.7 that you said was too short a  
8 time is based on followup, right?

9 MS. FORGIE: Objection, asked and answered.  
10 You can answer it again.

11 A Yes. That was the median followup time.

12 BY MR. GRIFFIS:

13 Q Okay. But the important figure is not how  
14 long between initial questionnaire and followup in a  
15 particular study, the important number for the issue  
16 of latency, which is your criticism, is between the  
17 initial exposure and the cancer assessment, correct?

18 MS. FORGIE: Objection, asked and answered  
19 like five times. You can answer it again.

20 A Yes.

21 BY MR. GRIFFIS:

22 Q How many years of followup, in addition to  
23 6.7, do you think would make this no longer an  
24 immature study?

25 MS. FORGIE: Objection, asked and answered.

<p style="text-align: right;">Page 202</p> <p>1 A I don't know the answer to that. I 2 think -- I think the -- the best followup would be at 3 least 20 years or more, but I think we don't really 4 know the answer to that question. 5 MS. FORGIE: When you finish with AHS, can we 6 take a quick break, when you're finished? 7 MR. GRIFFIS: Yeah. I'm seeing if I am. 8 Okay. 9 THE WITNESS: Break. 10 THE VIDEOGRAPHER: We're off the record at 11 3:40 p.m. 12 (Brief recess.) 13 THE VIDEOGRAPHER: We are back on the 14 record at 3:55 p.m. 15 (Exhibit 16-23, Draft publication, was 16 marked for identification.) 17 BY MR. GRIFFIS: 18 Q I've marked as Exhibit 23 a draft of 19 2013 -- 2013 draft of updated data from the 20 Agricultural Health Study; have you seen this before, 21 sir? 22 A I have, yes. Thank you. 23 Q When did you see it? 24 A A few weeks ago. 25 Q And you saw it a few weeks ago because you</p>	<p style="text-align: right;">Page 204</p> <p>1 over 10 years. 2 Q Well, you told us that 6.7 was too short 3 and you thought more than 10 would be too long and 4 you couldn't tell us more specifically in between 5 those two, right? 6 MS. FORGIE: Objection, mischaracterizes 7 his testimony. 8 A I didn't give you any threshold. 9 BY MR. GRIFFIS: 10 Q So what is the -- 11 A Other than 6.7 is too short and 10 would 12 probably be a minimum number. 13 Q So 6.7 plus another seven is also too 14 short? 15 MS. FORGIE: Objection, asked and answered. 16 You can answer it again. 17 A Well, I don't know. I mean it's better 18 than 6.7. It's longer than 10. 19 BY MR. GRIFFIS: 20 Q Do you feel that the data in the 2013 draft 21 is immature and has too short a followup time? 22 MS. FORGIE: Objection. 23 A No, but there are other issues with this 24 manuscript which are problematic. 25 BY MR. GRIFFIS:</p>
<p style="text-align: right;">Page 203</p> <p>1 read about it in one of the depositions and asked for 2 a copy? 3 MS. FORGIE: How did you know that? 4 A Well, I -- I knew about it because Aaron 5 Blair was questioned about it and then I did see it 6 referenced in other depositions and I -- so then I 7 asked for a copy, yes. 8 BY MR. GRIFFIS: 9 Q The cancers assessed in the De Roos '05 10 April were done through December 31, '01, and these 11 were in the 2013 data, they were assessed through 12 December 31, 2008; did you see that when you reviewed 13 these two papers? 14 A Yes. 15 Q It's another seven years of followup, 16 correct? 17 A Correct. 18 Q 6.7 plus seven, even if we pay no attention 19 to how long it was before initial questionnaires that 20 people were initially exposed to glyphosate, would 21 take us over your 10-year threshold for an effective 22 epidemiology study on glyphosate and NHL, right? 23 MS. FORGIE: Objection. 24 A So I didn't -- I didn't give you any 25 threshold, but it would -- it would put the followup</p>	<p style="text-align: right;">Page 205</p> <p>1 Q Okay. The followup time is no longer a 2 criticism? 3 MS. FORGIE: Objection. 4 A The followup time is better, much better, 5 okay. 6 BY MR. GRIFFIS: 7 Q It's a much larger cohort than the De Roos 8 2005, right, as far as number of cases? 9 A Yes. 10 MS. FORGIE: Objection. 11 A Yes. 12 BY MR. GRIFFIS: 13 Q And the people in the study are older, 14 people in the cohort are older in the status which 15 addresses your concern about average age of 16 45-year-old applicators, correct? 17 MS. FORGIE: Objection. 18 A Right, but they're still pretty young. 19 BY MR. GRIFFIS: 20 Q They're in a much better age range with the 21 2013 data than they were with the De Roos 2005 data, 22 right? 23 A Yes. 24 MS. FORGIE: Objection, asked and answered. 25 BY MR. GRIFFIS:</p>

<p style="text-align: right;">Page 206</p> <p>1 Q Okay. Sir, go to page 31, please. I'm 2 going to show you some data tables and each time I'm 3 going to take you to the first page of the table so 4 we can see what it is and then the part of the table 5 that has glyphosate data. 6 So on page 31, we have Table 2, which is 7 pesticide exposure, lifetime days and intensity 8 weighted lifetime days and the age adjusted risk of 9 NHL, correct? 10 A Yes. 11 Q And if you go to page 34, you see the 12 glyphosate data there? 13 A Yes. 14 Q And first of all, you see that there were 15 250 -- 89 plus 78 plus 83 -- cases with exposure to 16 glyphosate in the various exposure groups, correct? 17 MS. FORGIE: Objection. 18 A Correct. 19 BY MR. GRIFFIS: 20 Q And do you see that in each case, there is 21 no significant trend and no P value even above one in 22 the data showing any sort of association between 23 glyphosate and Non-Hodgkin's Lymphoma in this data, 24 correct? 25 A That's correct.</p>	<p style="text-align: right;">Page 208</p> <p>1 A That's correct. 2 BY MR. GRIFFIS: 3 Q Page 53, this table is showing -- wait for 4 you to get there. 5 A Yes. 6 Q Page 53, this table is showing pesticide 7 exposures, total days and intensity weighted total 8 days, fully adjusted of NHL, '92 through 2008. 9 And glyphosate data is presented on page 10 59, and again, there are no statistically significant 11 associations in these data, correct? 12 MS. FORGIE: Objection. 13 A So how is this different from the first 14 table we looked at? 15 BY MR. GRIFFIS: 16 Q These are -- these have confounder 17 adjustments. 18 MS. FORGIE: Objection. I object to his 19 statement. There's more to it than that. 20 A So where is the -- 21 BY MR. GRIFFIS: 22 Q Glyphosate data? 23 A Yeah. 24 Q On page 59. 25 A Okay.</p>
<p style="text-align: right;">Page 207</p> <p>1 Q That's true for all of the dosage groups, 2 correct? 3 A Yes. 4 Q Go to page 36, Table 3. This shows 5 exposure, lifetime days and the age adjusted risk of 6 NHL. 7 And this time it's breaking down by 8 Non-Hodgkin's Lymphoma type, correct? 9 MS. FORGIE: Objection. 10 A Here it says "lifetime days." 11 BY MR. GRIFFIS: 12 Q Are you on page 36, Table 3? 13 A Yes. 14 Q So lifetime days -- yes, sir, lifetime 15 days. 16 But it's broken down by NHL subtype, right? 17 A Correct. 18 Q If you go to page 39, there are no 19 statistically significant positive associations for 20 any NHL subtype in these data, correct? 21 A That's correct. 22 Q And the P trend for diffuse large B-cell 23 lymphoma is actually statistically significant 24 negative, right? 25 MS. FORGIE: Objection.</p>	<p style="text-align: right;">Page 209</p> <p>1 Q So my statement is correct, there are no 2 statistically significant associations, positive 3 associations in these data, correct? 4 MS. FORGIE: Objection. 5 A That's correct. 6 BY MR. GRIFFIS: 7 Q And to cut short the flipping through 8 additional tables, you looked through these data 9 tables and you found no statistically significant 10 positive associations between glyphosate and 11 Non-Hodgkin's Lymphoma in these data, correct? 12 A That's correct. 13 Q What are your criticisms of the 2013 AHS 14 data? 15 A Well, I think the main criticism is that 16 when they administered the followup questionnaire, 37 17 percent of the participants failed to respond, so 18 they had a large number of participants that dropped 19 out of the study. And so there are two approaches on 20 how to deal with that; one is to just analyze the 21 data for the other 63 percent, but that would result 22 in a significant -- potential significant selection 23 bias because you don't know what the exposures of the 24 37 percent would have been. 25 The other issue is that instead, they</p>

<p style="text-align: right;">Page 210</p> <p>1 decided to imputate, in effect guess, what the 2 exposures would have been for that 37 percent. And 3 that's a very questionable approach to the missing 4 data because they're basing data on participants that 5 they do have data on and they're basing the data on 6 the fact that participants with the missing data are 7 assumed to have continued to use glyphosate. 8 And another significant criticism is that 9 right about this time, around 1996, the usage of 10 glyphosate took off and began to go up at about a 11 45-degree angle. And they don't really capture much 12 of that at all in this -- in this analysis. So the 13 issue of significant people dropping out of the study 14 with no data and imputating the data, or guessing 15 what the data was, I think is a major problem with 16 this manuscript and is probably one of the reasons 17 why this manuscript hasn't gone anywhere. 18 Q Do you have any other criticisms besides 19 the two that you identified? 20 A I think those are the major criticisms. 21 Q Did you come up with those two criticisms 22 by your own analysis of this study or from looking at 23 some work from other persons? 24 MS. FORGIE: Objection. 25 A Well, part of it was from my own analysis</p>	<p style="text-align: right;">Page 212</p> <p>1 statistics in a study, right? 2 MS. FORGIE: Objection. 3 A No, it would -- most likely what would 4 happen is they have nondifferential -- you don't -- 5 first of all, you don't know what the real values are 6 for a significant proportion of the participants and 7 the methodology they use would have created a 8 nondifferential misclassification which would have 9 made it -- which would have lowered any risk ratios 10 towards the null. So it's a major problem with 11 this -- with this updated manuscript. 12 BY MR. GRIFFIS: 13 Q Same question as for your first criticism, 14 are you assessing the nondifferential bias that you 15 say may exist from increase use of glyphosate using 16 your own epidemiological expertise or are you mostly 17 relying on Dr. Ritz's analysis from her supplemental 18 expert report? 19 MS. FORGIE: Asked and answered. 20 A I'm relying on my expertise. 21 BY MR. GRIFFIS: 22 Q And the -- is it your position, sir, that 23 epidemiology can't be done anymore because so many 24 people are exposed to glyphosate? 25 MS. FORGIE: Objection.</p>
<p style="text-align: right;">Page 211</p> <p>1 and part of it was from reading the rebuttal written 2 by Dr. Ritz who provided a much more detailed and 3 sophisticated explanation than I have. 4 Q Yes, sir. Dr. Ritz, of course, is an 5 epidemiologist? 6 A Yes. 7 Q Do you feel qualified to assess the 8 imputation methodology that was used in the study and 9 critique it or are you really relying on Dr. Ritz for 10 that? 11 MS. FORGIE: Objection, asked and answered. 12 A I'm relying on her assessment. 13 BY MR. GRIFFIS: 14 Q Okay. And with regard to the increase in 15 usage on glyphosate and whether -- it would be 16 necessary for there to be a differential between the 17 cases and the controls for the increase in glyphosate 18 use to cause a relevant fuzzing of the statistics; is 19 that fair to say? 20 MS. FORGIE: Objection. 21 A Say it again. 22 BY MR. GRIFFIS: 23 Q Yes, sir. It would be necessary for there 24 to be a differential in increased glyphosate used 25 between cases and controls for that to alter the</p>	<p style="text-align: right;">Page 213</p> <p>1 A It's my opinion that this is -- this has 2 become a very flawed study due to loss of 3 participants, that it is probably never going to be 4 able to provide relevant results with regard to 5 glyphosate. 6 BY MR. GRIFFIS: 7 Q I was asking about the other criticisms, 8 sir, not that one, increasing glyphosate use. 9 A I'm sorry, ask your question. I must have 10 been thinking ahead of you. I'm sorry. 11 Q Yes, sir. Is it your view that increased 12 glyphosate use makes further epidemiology in the 13 current era impossible because so many people are 14 exposed? 15 MS. FORGIE: Objection. 16 A It makes it much more difficult to 17 demonstrate differences, because in a study like 18 this, you need to have enough unexposed participants 19 to compare to the exposed participants. And if the 20 majority, 70, 80 percent of the participants are 21 exposed, it makes it more difficult to do the study 22 because you need a much larger number of participants 23 to get enough contrast in the exposures to see any 24 difference. 25 BY MR. GRIFFIS:</p>

1 Q Do you know, sir, that some data from --  
2 not involving glyphosate, but involving other  
3 substances, was published in 2014 from this later  
4 data collection?

5 A Yes.

6 Q And that included what was published  
7 despite the dropout issue that you identified as your  
8 first criticism?

9 A Yes, but in that study, the imputation was  
10 likely more accurate because although we don't really  
11 know, it's a guesstimate there too, but it's likely  
12 more accurate because they had -- because of the  
13 pretty level use of the various different pesticides.  
14 In other words, you didn't have this dramatic  
15 increase in those pesticides like we know occurred  
16 for glyphosate.

17 Q Would you support the submission of this  
18 data for publication as something important for  
19 people to know about?

20 MS. FORGIE: Objection, speculation.

21 A I think they should -- I think they should  
22 publish it, but I think, you know, if it has adequate  
23 and critical peer review, it may not be accepted.

24 BY MR. GRIFFIS:

25 Q You saw Dr. Blair's testimony in his

1 update them periodically, so that's -- that's the  
2 natural evolution of reporting on cohort studies. So  
3 people knew the original cohort study was there and  
4 people, I think, were and have been waiting for  
5 followup publications. So I don't know what the IARC  
6 people knew or didn't know.

7 Q Do you know if they've even tried to have  
8 it published?

9 A I don't know that.

10 Q Do you know why?

11 A No.

12 Q You read Dr. Ritz's expert report, not  
13 supplemental, but expert report -- did you read her  
14 expert report?

15 A Yes.

16 Q Did you see she said the NAPP data should  
17 be considered in any analysis?

18 A I think once the NAPP data is published, it  
19 could be -- it could be included in a meta-analysis,  
20 yes. But prior to having it published, I would say  
21 no.

22 Q And you know that Dr. Blair testified -- if  
23 you read his deposition, did you see he testified if  
24 the NAPP data were included in a meta-analysis, the  
25 risk would have been nonsignificant?

1 deposition that he and the other authors discussed  
2 publishing it in advance of IARC so that IARC could  
3 review it and thought it would be important for IARC  
4 to review it; you saw his testimony saying that?

5 MS. FORGIE: Objection, mischaracterizes  
6 the testimony.

7 A I don't remember exactly what was -- I  
8 don't remember that from his -- from his deposition.  
9 If you want to show it to me, I'd be happy to see it,  
10 but I don't remember that specifically.

11 BY MR. GRIFFIS:

12 Q You don't remember them discussing the  
13 possibility of publishing it before IARC?

14 A I don't remember that.

15 Q Do you remember that he testified at his  
16 deposition that he didn't tell anyone at IARC about  
17 this data that he knew about?

18 MS. FORGIE: Objection, mischaracterizes  
19 the testimony.

20 A I think it was generally known that there  
21 was data out there.

22 BY MR. GRIFFIS:

23 Q You think it was generally known by the  
24 IARC participants that there was updated AHS data?

25 A That's what you do with cohort studies, you

1 MS. FORGIE: Objection, mischaracterizes  
2 his testimony.

3 A I don't think we know that until it's  
4 actually done. It wouldn't surprise me actually  
5 because it's the same data that's already in the  
6 meta-analysis, right? You're taking the NAPP and  
7 putting it in and taking the De Roos 2003 and the  
8 McDuffie out, so you're basically putting -- you're  
9 basically putting the same data back into the  
10 meta-analysis.

11 BY MR. GRIFFIS:

12 Q There are analyses and tranches of data  
13 reported in the NAPP data that don't show up at all  
14 in De Roos '03.

15 MS. FORGIE: There's no question.

16 Q Correct?

17 MS. FORGIE: Objection.

18 A The NAPP includes De Roos 2003 and the  
19 McDuffie --

20 Q McDuffie.

21 A -- groups. So it's -- you're really not  
22 changing the data very much.

23 Q For example, the combined data of intensity  
24 by year and by number of days of use during the year,  
25 that's new, it wasn't reported in McDuffie or in De



1 Roos '03, right?

2 MS. FORGIE: Objection.

3 A That's true, that's new data that would  
4 contribute to a meta-analysis, but I doubt whether it  
5 would take the odds ratios down. It would keep them  
6 the same or even increase them because it's the same  
7 basic data.

8 BY MR. GRIFFIS:

9 Q When we say --

10 A But you have to do the analysis. It's hard  
11 to sort of guess what the results would be without  
12 doing it.

13 Q Why haven't the NAPP data been published  
14 yet?

15 MS. FORGIE: Objection, calls for  
16 speculation.

17 A Well, I wish I had the answer to that.  
18 It's been slow and methodical. As you know, I've  
19 been pushing hard to get it published and it's slow  
20 and methodical.

21 BY MR. GRIFFIS:

22 Q You don't know the reason for the holdup?

23 MS. FORGIE: Objection, asked and answered.  
24 You can answer it again.

25 A I don't. It's been slow and methodical.

1 MS. FORGIE: Objection.

2 A That's possible.

3 BY MR. GRIFFIS:

4 Q That's true by the play of chance alone,  
5 it's a math thing, not a science thing?

6 A Right.

7 MS. FORGIE: Objection.

8 BY MR. GRIFFIS:

9 Q So it's really important to look at whether  
10 the number of associations exceeds the number that  
11 you would expect due to chance, whether the  
12 associations that you see are consistent across  
13 animal species, whether they're consistent across  
14 males and females, whether they're consistent with  
15 the tissues targeted, et cetera, correct?

16 MS. FORGIE: Objection, speculation.

17 A All of those things are important to  
18 consider, yes.

19 BY MR. GRIFFIS:

20 Q And none of those analyses appear in your  
21 expert report; is that fair?

22 A I think they do. I mean, I comment on  
23 whether things were statistically significant or not.  
24 I discuss whether they were males or females or both.  
25 What are the other issues that you brought

1 BY MR. GRIFFIS:

2 Q Do you know whether the AHS data is  
3 suffering from the same mysterious slowdowns?

4 MS. FORGIE: Objection.

5 A I don't know. I don't think so, but I  
6 don't know.

7 BY MR. GRIFFIS:

8 Q In your expert report, sir, the section on  
9 animal studies, it starts on page 6.

10 A Yes.

11 Q You say, "glyphosate has also been tested  
12 for carcinogenicity in mice and rats in multiple  
13 studies," and you give some sites, "and some studies  
14 have been positive for the development of tumors,"  
15 right?

16 A Yes.

17 Q And what you mean by positive is  
18 statistically significant associations found for  
19 particular tumors in particular studies, right?

20 A Yes.

21 Q And as we've discussed, if a study looks at  
22 multiple end points, like dozens of cancers in a  
23 group of animals, about one out of 20 of those  
24 associations are going to be positive in any  
25 particular study, right?

1 up?

2 Q Whether the same associations are found  
3 across multiple studies.

4 A So I comment on that in my closing remarks  
5 on Bradford Hill.

6 Q And I think that might have been it.

7 Do you say, in your section on animal  
8 studies, we have seen the consistent results  
9 targeting similar tissues in mice and in rats, in  
10 males and in females across multiple studies?

11 MS. FORGIE: Objection, asked and answered.  
12 You can answer it again.

13 A Well, yes, if you read through the animal  
14 studies, you'll see I do comment on that.

15 BY MR. GRIFFIS:

16 Q Show me where.

17 A So --

18 MS. FORGIE: You mean other than what he's  
19 already pointed out?

20 MR. GRIFFIS: He hasn't pointed out  
21 anything yet.

22 Q Show me where, please.

23 MS. FORGIE: Objection.

24 A Well, there -- you know, there is -- so for  
25 example, probably the best example is the lymphoma

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1 studies on page 7, in the middle paragraph, where you  
 2 see, in one study, lymphomas in both males and female  
 3 mice. In another study, you see it in males, another  
 4 study you see it in males and another study you see  
 5 it in females. So, I mean, that's probably the best  
 6 example.

7 Most of the tumors occurred in males and  
 8 not in females. But there was -- and so I -- I  
 9 summarized where there was a consistency in the --  
 10 under the Bradford Hill Criteria for replication of  
 11 results where I say animal studies are replicated,  
 12 the findings for pancreatic islet cell adenoma,  
 13 cellular adenoma, hemangioma, hemangioma sarcoma and  
 14 malignant lymphoma. And actually, there a couple  
 15 other ones that were also replicated when I reviewed  
 16 the more detailed toxicology studies of Portier and  
 17 Jameson, T-cell tumors of the thyroid were replicated  
 18 and kidney tumors were replicated.

19 Q You said the studies; do you mean the  
 20 expert reports of Portier and Jameson?  
 21 A Yes, the expert reports of Portier and  
 22 Jameson.  
 23 Q Are you relying on their expert reports for  
 24 their --  
 25 A Yes, I am. It was something -- they

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1 reviewed -- they reviewed the actual animal studies.  
 2 I was limited, like IARC, to reviewing summaries of  
 3 the studies, either from IARC or from EPA or from the  
 4 EFSA or -- yeah, so those are the sources that I used  
 5 to compile what I found.

6 Q Did you see in Dr. Portier's deposition  
 7 that he said that the pooling methodology that he  
 8 applied to malignant lymphomas did not work and did  
 9 not show a significant trend when he applied it to  
 10 24-month studies as opposed to the 18-month studies?  
 11 MS. FORGIE: Objection. He didn't read  
 12 that.  
 13 A His report?  
 14 BY MR. GRIFFIS:  
 15 Q His deposition.  
 16 Did you tell me earlier you read his  
 17 deposition?  
 18 A That was a mistake. I didn't read his  
 19 deposition.  
 20 Q You don't know what he said about his  
 21 pooling results and what they didn't show in his  
 22 deposition?  
 23 A No.  
 24 Q If he said the various things that he said  
 25 in his expert report were not so in his deposition,

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1 that would undermine your reliance on the expert  
 2 report; would that be fair to say?  
 3 MS. FORGIE: Objection, mischaracterizes  
 4 the deposition of Portier and -- well, I won't make a  
 5 speaking objection, but you might want to ask him  
 6 about timing of when he read things.  
 7 A So I'm mainly relying on my own evaluation  
 8 of the published reports that I had in hand.  
 9 BY MR. GRIFFIS:  
 10 Q Okay. Now, you also said a little earlier,  
 11 sir, that you didn't have available to you original  
 12 animal data and that IARC also didn't have available  
 13 to it original animal data.  
 14 Did you read the Greim paper?  
 15 MS. FORGIE: Objection.  
 16 A I did and I referenced it and I actually  
 17 discussed it in my report.  
 18 BY MR. GRIFFIS:  
 19 Q Did you look at the raw data that was  
 20 provided, the original data that was provided along  
 21 with the Greim paper?  
 22 A The Greim, no, I did not.  
 23 Q That was available online, as it says in  
 24 the Greim paper, and it's still available online and  
 25 always available online since the Greim paper was

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1 published; did you know that?  
 2 A Yes, I did.  
 3 Q Did you look at it?  
 4 A No, I did not.  
 5 Q And did you read, in the depositions of  
 6 Dr. Blair and Dr. Ross and others who participated in  
 7 IARC, that the Greim data was -- that they could have  
 8 looked at it if they had chosen to, but it was too  
 9 voluminous and they chose not to look at it?  
 10 MS. FORGIE: Objection, mischaracterizes  
 11 the testimony.  
 12 A From the IARC report, what they said is it  
 13 wasn't published in a peer-reviewed journal and it  
 14 wasn't reviewed by another regulatory agency, so by  
 15 their rules that IARC has, they would not review it  
 16 and do an independent analysis. So I'm not -- I'm  
 17 not sure what you said is true.  
 18 Q Okay.  
 19 A I'm not sure. Maybe you should rephrase it  
 20 or ask me again.  
 21 Q Well, you may not be the right person to  
 22 know about the details of IARC's procedures, and tell  
 23 me if you're not, but do you know that IARC has a  
 24 rule that if something as incorrect as Greim was at  
 25 the time of the IARC review, they will review it?

1 MS. FORGIE: Objection.  
 2 A If they knew about it.  
 3 BY MR. GRIFFIS:  
 4 Q And do you know that they admitted that  
 5 they knew about it, it was in their hands and there's  
 6 e-mails proving it?  
 7 MS. FORGIE: Objection, mischaracterizes.  
 8 A I'm not privy to what happened at IARC.  
 9 BY MR. GRIFFIS:  
 10 Q Well, whatever happened at IARC and  
 11 whatever their rules are, is it your rule that you  
 12 won't look at animal data that's provided in an  
 13 electronic annex along with the published article  
 14 like the Greim report?  
 15 MS. FORGIE: Objection.  
 16 A I would probably rely on someone who --  
 17 like Portier or Jameson or somebody else who has more  
 18 experience in doing this than I do.  
 19 BY MR. GRIFFIS:  
 20 Q Fair enough. So knowing that Dr. Portier,  
 21 maybe Dr. Jameson have looked at that data and  
 22 analyzed it and have more experience, you wouldn't  
 23 look at the raw data yourself, you would rely on what  
 24 they have done; is that fair?  
 25 MS. FORGIE: Objection.

1 have that view.  
 2 Is it because you think that that sort of  
 3 data should be transparent to the general public and  
 4 scientists so that anyone can look at it or you think  
 5 that data that is unpublished is of a low quality,  
 6 and therefore, shouldn't be looked at by regulators?  
 7 MS. FORGIE: Object to form.  
 8 A No, I think all the data should be looked  
 9 at by regulators and judged based on its quality.  
 10 And I think probably for the most part it is high  
 11 quality, but one cannot know unless one has the  
 12 opportunity to review it.  
 13 BY MR. GRIFFIS:  
 14 Q Okay. Well, when you said that all data  
 15 that is looked at by EPA and by regulators should be  
 16 published, why do you say that?  
 17 A Well, because then it would be publicly  
 18 available. Then I could sit down and evaluate it, if  
 19 I wanted to, or somebody like Portier could sit down  
 20 and evaluate it or other regulatory agencies could  
 21 sit down and evaluate it. If it's not publicly  
 22 available, it -- you can't evaluate it for quality  
 23 and you can't make up your own mind about, you know,  
 24 what does the data really show, were the analyses  
 25 done by the company pathologist, by the company

1 A I probably wouldn't, no. I think, based on  
 2 what's already been published in the review articles  
 3 and in the analyses that IARC did and that EPA did  
 4 and that EFSA did and the German group did, I mean --  
 5 and -- and in the reports of Jameson and Portier,  
 6 there's an abundance of evidence, which I sort of  
 7 listed here, that I'd like to say reduces tumors of  
 8 various types in rats and mice. And there's some  
 9 consistency in that. It was reproduced more than  
 10 once, twice, three times for some tumors.  
 11 Q Sir, you don't have any problem  
 12 philosophically with unpublished as opposed to  
 13 published data, do you?  
 14 MS. FORGIE: Objection.  
 15 A I personally think that all data that's  
 16 considered should be published and peer reviewed.  
 17 BY MR. GRIFFIS:  
 18 Q What do you mean "all data that's  
 19 considered"?  
 20 A That's considered in any kind of evaluation  
 21 like this, that's considered by the EPA, by IARC, by  
 22 anybody. The data should be publicly available, peer  
 23 reviewed and available for anybody to analyze and  
 24 that has not been the case.  
 25 Q Okay, sir. I want to understand why you

1 biostatisticians correct.  
 2 Q I know it's getting late and you're a  
 3 little tired, but I want to be clear about this.  
 4 The reason that you say that all this data  
 5 should be made public isn't because of -- isn't  
 6 because the process of making it public improves its  
 7 quality so much as you think that all such data  
 8 should be available so that anyone who wants to can  
 9 see, it's an open access sort of --  
 10 A Yes.  
 11 MS. FORGIE: Objection, mischaracterizes  
 12 his prior testimony.  
 13 A There should be total transparency.  
 14 BY MR. GRIFFIS:  
 15 Q Okay. You understand, sir, that regulators  
 16 very frequently do make decisions based on largely an  
 17 unpublished data, correct?  
 18 MS. FORGIE: Objection.  
 19 A That's been the tradition, but I -- I think  
 20 that transparency is a much better approach to this.  
 21 Q And -- late for me too. Take a few  
 22 minutes.  
 23 MS. FORGIE: For all of us.  
 24 THE WITNESS: Are we taking a break?  
 25 MR. GRIFFIS: Sure.

1 THE WITNESS: Can I grab a coffee?  
 2 MR. GRIFFIS: Yeah, let's make it like two  
 3 rather than 10 minutes.  
 4 THE VIDEOGRAPHER: Off the record at 4:34  
 5 p.m. This marks the end of Videotape Number 3 in the  
 6 deposition of Dr. Dennis Weisenburger.  
 7 (Brief recess.)  
 8 THE VIDEOGRAPHER: We are back on the  
 9 record at 4:39 p.m. This marks the beginning of  
 10 Videotape Number 4 in the deposition of Dr. Dennis  
 11 Weisenburger.  
 12 BY MR. GRIFFIS:  
 13 Q Sir, I'm looking at your expert report on  
 14 pages 8 through 10, "mechanisms of carcinogenesis,"  
 15 and you describe several different kinds of studies  
 16 here and the first is human in vivo genotox and then  
 17 in vitro studies and then some studies in in vivo, in  
 18 vitro mammals and other organisms, animals and plants  
 19 both.  
 20 Which category is the most important and  
 21 most relevant to assessing whether glyphosate can  
 22 cause Non-Hodgkin's Lymphoma?  
 23 MS. FORGIE: Objection.  
 24 A For me, the most relevant is the studies  
 25 done to humans, human cells, in mammals, in mammal

1 cells --  
 2 Q All right. And of those, which is the most  
 3 important --  
 4 MS. FORGIE: Are you finished?  
 5 A And other living organisms.  
 6 BY MR. GRIFFIS:  
 7 Q What did you leave out? Was it without a  
 8 rank order or was that just listing everything?  
 9 A It was sort of a rank order.  
 10 Q So the most important is in living humans,  
 11 right?  
 12 MS. FORGIE: Objection, asked and answered.  
 13 You can answer it again.  
 14 A The most important is in humans and  
 15 mammals, in vivo and in vitro. And then other, how  
 16 do you say it, other in vivo studies, non-mammals.  
 17 BY MR. GRIFFIS:  
 18 Q That's another rank of everything?  
 19 A Yes.  
 20 Q Of everything?  
 21 A More or less.  
 22 Q You say on page 8, the first two things you  
 23 talked about are the Paz-y-Mino 2007 and Bolognesi 09  
 24 studies and you say they are particularly informative  
 25 with regard to the genotoxicity of these chemicals in

1 humans in your expert report, right?  
 2 A Yes.  
 3 Q What do you mean by "particularly  
 4 informative"?  
 5 A Well, they're both studies of workers and  
 6 other people who were exposed to glyphosate that was  
 7 sprayed. And in the first study, the exposures were  
 8 quite high, perhaps like you would see in an animal  
 9 study, and in the second study the exposures were  
 10 lower. And in both cases, they saw significant  
 11 increases in genotoxicity in cells of the humans who  
 12 were exposed. So for me, this is strong evidence  
 13 that the formulations that they were exposed to were  
 14 genotoxic.  
 15 (Exhibit 16-24, article, was marked for  
 16 identification.)  
 17 MR. GRIFFIS: That's Exhibit 24, right?  
 18 THE WITNESS: 24.  
 19 BY MR. GRIFFIS:  
 20 Q Exhibit 24, sir, is the Paz-y-Mino 2007  
 21 study. And the study reports the results of  
 22 something called a comet assay test looking at blood  
 23 samples from 24 individuals living in Ecuador near  
 24 the Columbian border and comparing that to  
 25 individuals in a control group not living near the

1 border, right?  
 2 A Yes.  
 3 Q Do you know where the controlled population  
 4 lived?  
 5 A They lived in an area that wasn't sprayed  
 6 with glyphosate. I'll see if they give more details  
 7 to that. Unexposed control group consisted of 21  
 8 unrelated, healthy individuals living 80 kilometers  
 9 away from the spraying area, similar exposed group,  
 10 et cetera.  
 11 Q Where are you reading?  
 12 A It's top of 258, first paragraph on the  
 13 left.  
 14 Q 258?  
 15 A I'm sorry, 458, third page.  
 16 Q They're similar to the exposed group  
 17 regarding demographic characteristics and occupation,  
 18 but were not matched controls, correct?  
 19 A Yes.  
 20 MS. FORGIE: Objection.  
 21 BY MR. GRIFFIS:  
 22 Q That's what it says, right?  
 23 A That's what it says.  
 24 Q And do you know if they had differences in  
 25 income levels?

1 A No.  
 2 Q Do you know if they had differences in  
 3 access to sanitation like indoor plumbing?  
 4 A No.  
 5 Q Do you know if they have differences in the  
 6 degree to which they were urban or rural?  
 7 A Well, they were matched for demographic  
 8 characteristics, so I'm assuming there was some  
 9 matching. They don't give you the details, but urban  
 10 and rural would fit into that category.  
 11 Q You consider urban and rural a demographic  
 12 characteristic?  
 13 A Yes.  
 14 Q Do you know whether they match that?  
 15 A No.  
 16 Q Do you agree the differences in sanitation,  
 17 like indoor plumbing, housing, income levels, et  
 18 cetera, could affect general health and background  
 19 level of genotoxicity?  
 20 MS. FORGIE: Objection.  
 21 A I don't know that without more specifics.  
 22 BY MR. GRIFFIS:  
 23 Q The only demographic information they give  
 24 us about the cases and controls in the study in Table  
 25 1 are the gender and age, correct?

1 Q The study population, the people living  
 2 near the border who were sprayed were complaining of  
 3 multiple acute illnesses, correct?  
 4 A Yes.  
 5 Q Page 457, left-hand column, intestinal pain  
 6 and vomiting, diarrhea, fever, heart palpitations,  
 7 headaches, dizziness, numbness, insomnia, sadness,  
 8 burning of eyes or skin, blurred vision, difficulty  
 9 in breathing, blisters or rash, correct?  
 10 A Correct.  
 11 Q And they didn't match controls for  
 12 suffering from those symptoms or for level of  
 13 illness, correct?  
 14 MS. FORGIE: Objection.  
 15 A No, because I think many of those symptoms  
 16 were due to the pesticides that they were sprayed  
 17 with.  
 18 BY MR. GRIFFIS:  
 19 Q Having intestinal pain and vomiting, having  
 20 diarrhea, having heart palpitations, having systemic  
 21 complaints significant enough to cause clinical  
 22 symptoms can itself cause genotoxicity and  
 23 occupational stress; is that right?  
 24 MS. FORGIE: Objection.  
 25 A Severe stress could do that, yes.

1 MS. FORGIE: Objection, mischaracterizes  
 2 what he just said.  
 3 A They give the gender and age. In the next  
 4 paragraph actually below the one we were just on, it  
 5 says "neither the exposed or the control group smoked  
 6 tobacco, drank alcohol, took prescription drugs or  
 7 had been exposed to pesticides during the course of  
 8 their normal daily lives and mainly worked at home,  
 9 cultivating and harvesting crops, pesticides, other  
 10 herbal substances" and then named activities. So it  
 11 sounds like they were matched for activities and  
 12 other -- other things that could affect genotoxicity  
 13 studies.  
 14 Q It says --  
 15 A It doesn't say how they were matched, but  
 16 it sounds like they were similar.  
 17 Q It says they were not matched controls in  
 18 the previous paragraph, right?  
 19 A Right.  
 20 MS. FORGIE: Objection.  
 21 BY MR. GRIFFIS:  
 22 Q What's a matched control?  
 23 A Well, a matched control, it depends on what  
 24 you match on. Usually you match at a minimum on age  
 25 and sex, but you could match on many things.

1 BY MR. GRIFFIS:  
 2 Q And whatever illnesses that they were  
 3 suffering from, which you don't know, were due to  
 4 pesticides could do that as well, right?  
 5 MS. FORGIE: Objection, asked and answered.  
 6 A It's very likely the illnesses were due to  
 7 pesticides -- due to the sprayed pesticides.  
 8 BY MR. GRIFFIS:  
 9 Q And if genotoxicity was secondary to the  
 10 symptoms that they were showing and not primarily  
 11 caused by the pesticides, it would be not evidence of  
 12 glyphosate-induced genotoxicity, right?  
 13 MS. FORGIE: Objection.  
 14 A Well, it would be hard for me to believe  
 15 that any of these symptoms would cause enough  
 16 oxidative stress to produce the kinds of measurable  
 17 changes we saw in genotoxicity in this study. It  
 18 would be hard for me to believe.  
 19 BY MR. GRIFFIS:  
 20 Q Do you know the degree to which systemic  
 21 illness causes oxidative stress?  
 22 MS. FORGIE: Objection.  
 23 A It does increase the oxidative stress, but  
 24 by and large, the body can deal with the oxidative  
 25 stress that's -- that's generated from things like

1 that unless it's -- unless it's chronic oxidative --  
 2 chronic illness that causes increased oxidative  
 3 stress. I'm talking in generalities though.  
 4 BY MR. GRIFFIS:  
 5 Q Yes, sir. Oxidative stress is damage to  
 6 DNA caused by reactive oxidative species, correct?  
 7 MS. FORGIE: Objection.  
 8 A Well, oxidative stress is the physiologic  
 9 term for the process that generates the free  
 10 radicals, but otherwise what you said is true, yes.  
 11 BY MR. GRIFFIS:  
 12 Q The reason that we care about oxidative  
 13 stress with regard to glyphosate is because the  
 14 hypothesis has been generated that oxidative stress  
 15 is a mechanism by which glyphosate can damage DNA and  
 16 ultimately lead to cancer; is that right?  
 17 MS. FORGIE: Objection.  
 18 A Oxidative stress is one mechanism, another  
 19 is direct genotoxicity.  
 20 BY MR. GRIFFIS:  
 21 Q Yes, sir, I'm talking about oxidative  
 22 stress.  
 23 A Okay.  
 24 Q That's the hypothesis, right, that  
 25 oxidative stress can cause damage to DNA, which after

1 you, per day?  
 2 MS. FORGIE: Objection, speculation.  
 3 A Again, I don't know the answer to that.  
 4 There would be -- if there was that much -- if there  
 5 was that much stress, there probably would be many  
 6 lesions. The good thing about it is the body has  
 7 ways to compensate and either heal the lesions or the  
 8 cell dies.  
 9 BY MR. GRIFFIS:  
 10 Q Too many lesions in DNA can be dealt with  
 11 by the body in multiple ways by DNA repair which is  
 12 going on all the time in every cell in our bodies,  
 13 correct?  
 14 A Correct.  
 15 MS. FORGIE: Objection.  
 16 BY MR. GRIFFIS:  
 17 Q By various actions taken to remove a  
 18 damaged cell from circulation being eaten by other  
 19 cells or programmed to just die on its own, for  
 20 example, correct?  
 21 MS. FORGIE: Objection.  
 22 A Yes.  
 23 BY MR. GRIFFIS:  
 24 Q And even if a DNA lesion survives and is  
 25 reproduced, it would be necessary for it to be the

1 an additional specific of events can potentially lead  
 2 to cancer; is that right?  
 3 MS. FORGIE: Objection, asked and answered.  
 4 A That's one hypothesis.  
 5 BY MR. GRIFFIS:  
 6 Q Are there other hypotheses about how  
 7 glyphosate, through oxidative stress, could cause  
 8 cancer?  
 9 A No, through oxidative stress, that is the  
 10 hypothesis.  
 11 Q And oxidative stress is something that's  
 12 going on all the time in every cell in our body  
 13 whether we're exposed to glyphosate or other  
 14 substances or not, correct?  
 15 A That's right.  
 16 Q There are up to 10 thousand or more DNA  
 17 lesions per cell throughout our body per day due to  
 18 oxidative stress, correct?  
 19 MS. FORGIE: Objection.  
 20 A I don't know if that's correct. It's  
 21 common and it occurs in all of us.  
 22 BY MR. GRIFFIS:  
 23 Q That number doesn't surprise you?  
 24 A It does surprise me, but it could be true.  
 25 Q Many lesions per cell, would that surprise

1 right kind of lesion to cause changes in the cell  
 2 that are stable and lead to cells either to become  
 3 immortal or to reproduce itself at a disproportionate  
 4 rate in order for it to cause cancer; is that right?  
 5 MS. FORGIE: Objection.  
 6 A It would require one or more changes to  
 7 have that kind, yes.  
 8 BY MR. GRIFFIS:  
 9 Q There are multiple steps in the process,  
 10 right?  
 11 MS. FORGIE: Objection.  
 12 A Yes.  
 13 BY MR. GRIFFIS:  
 14 Q Our body has very robust mechanisms to make  
 15 sure that cells don't become carcinogenic even if  
 16 exposed to genotoxic substances or oxidative  
 17 stressors, right?  
 18 MS. FORGIE: Objection.  
 19 A That's true.  
 20 BY MR. GRIFFIS:  
 21 Q It's only when those mechanisms are  
 22 overwhelmed that we have a problem, right?  
 23 MS. FORGIE: Objection.  
 24 A Or fail.  
 25 BY MR. GRIFFIS:

1 Q Blood samples are -- on page 458 in your  
2 2007 study -- blood samples were collected and  
3 processed from the controls, but not at the same time  
4 as the blood samples that were collected and  
5 processed in the exposed group, right?

6 MS. FORGIE: Objection.  
7 BY MR. GRIFFIS:

8 Q I'm in the very first paragraph on page  
9 458.

10 A Yeah. Blood samples were collected and  
11 processed as per the exposed group, but not  
12 uncommonly.

13 Q You mean not at the same time, correct?

14 A Correct.

15 Q So we don't know if blood samples were  
16 drawn during the same kind of season with the same  
17 exposure to ultraviolet light during a sunny season  
18 versus a rainy season, et cetera, correct?

19 MS. FORGIE: Objection.

20 A We don't know that.

21 BY MR. GRIFFIS:

22 Q If blood samples from the exposed group  
23 were frozen, that would be an improper methodology  
24 for comet assay samples, correct?

25 MS. FORGIE: Objection.

1 genotoxic?

2 A I do not.

3 Q Do you know what's in it?

4 A No.

5 Q Do you know how long a comet assay can  
6 detect DNA damage purportedly caused by specific  
7 exposure?

8 A How long -- how long after the exposure?

9 Q Yeah.

10 A As long as the DNA damage is there, it can  
11 detect it.

12 Q Do you know how long DNA damage would  
13 remain without either being repaired or eliminated  
14 from the body?

15 MS. FORGIE: Objection.

16 A DNA damage can be repaired, it can be  
17 eliminated or it can persist.

18 BY MR. GRIFFIS:

19 Q Do you know how much DNA damage can persist  
20 months after an exposure?

21 MS. FORGIE: Objection, asked and answered.

22 You can answer it again.

23 A No, but if the cells are -- don't repair it  
24 and it's not significant enough to kill the cell,  
25 then the cells can divide and proliferate and they

1 A I don't know the answer to that question.

2 BY MR. GRIFFIS:

3 Q Okay. Have you done comet assays yourself?

4 A No.

5 Q So you don't know whether it would be a  
6 violation of methodology to freeze samples from the  
7 controls and not freeze samples from the -- I'm  
8 sorry, freeze samples from the exposed group and not  
9 freeze samples from the controls?

10 MS. FORGIE: Objection, asked and answered.

11 A Typically when you do a study, you want to  
12 handle the samples the same way. So I don't know  
13 whether it would affect the results, in some assays  
14 it doesn't and some assays it does, so you would have  
15 to know that. And I don't know that.

16 BY MR. GRIFFIS:

17 Q Right. The spray that was involved in the  
18 study, sir -- I'm on the first page -- was Roundup  
19 Ultra and Cosmo-Flux 411F, correct?

20 A Trying to see where you're at -- there it  
21 is. Yeah, POEA and Cosmo-Flux 411F.

22 Q And it says that's a proprietary Colombian  
23 component, right?

24 A Yes.

25 Q Do you know if Cosmo-Flux 411F is

1 can carry the lesion and that can occur -- that can  
2 occur. That's how cancers develop.

3 Q So the only cells that would still be  
4 around a couple of months after an exposure would be  
5 cells that are proliferating with the genetic defect  
6 in them; is that right?

7 MS. FORGIE: Objection.

8 A That's true.

9 BY MR. GRIFFIS:

10 Q And that would be a whole lot fewer than  
11 the cells that were initially damaged; is that right?

12 MS. FORGIE: Objection.

13 A It would depend entirely on what their  
14 proliferate advantage would be.

15 BY MR. GRIFFIS:

16 Q Is there any indication that the  
17 investigators that were scoring the comet assay were  
18 blinded as to the scoring samples?

19 A I don't know. I would have to read the  
20 methods to tell you that. I don't remember.

21 MS. FORGIE: Do you want him to read the  
22 paper?

23 MR. GRIFFIS: No. I want to take pity on  
24 our court reporter.

25 BY MR. GRIFFIS:

1 Q If they weren't blinded, then that would be  
2 a flaw; is that right?

3 MS. FORGIE: Objection.

4 A Yes, they should be blinded.

5 BY MR. GRIFFIS:

6 Q And if it doesn't say they were blinded in  
7 here, you don't know whether they were or not; is  
8 that fair?

9 A That's fair.

10 Q Table 1 shows the data that was collected,  
11 correct?

12 MS. FORGIE: The data that was what? I  
13 didn't hear.

14 MR. GRIFFIS: Collected.

15 A Yes.

16 BY MR. GRIFFIS:

17 Q And in the final scoring, the median length  
18 of the comet assays in all but one of the 21  
19 controlled subjects was identical, right, 25.0?

20 A Yes.

21 Q Which was not the case in the exposed  
22 glyphosate group, right?

23 A Yes.

24 Q That's virtually impossible for the median  
25 in 21, 20 different people to be identical in a comet

1 MS. FORGIE: Objection.

2 A That's a guess.

3 BY MR. GRIFFIS:

4 Q Now, Dr. Paz-y-Mino performed a second  
5 study of people exposed to glyphosate containing  
6 compounds near the Columbian border, correct?

7 A Yes.

8 Q And have you reviewed that study?

9 A Yes.

10 Q When did you review it, sir? It wasn't  
11 listed in your report.

12 A Yeah, it was listed in my -- either in my  
13 other papers reviewed or maybe more in my -- or in  
14 the more recent list that you have. I can't remember  
15 where it's listed.

16 Q Okay. You didn't describe it in the body  
17 of your expert report or cite it there?

18 A No, I didn't rely on it; I didn't.

19 Q Why not?

20 A Because I didn't think it was useful.

21 (Exhibit 16-25, article, was marked for  
22 identification.)

23 BY MR. GRIFFIS:

24 Q This is a study in which the investigators  
25 from the first -- some of the investigators from the

1 assay, right?

2 MS. FORGIE: Objection.

3 A They aren't identical. There's one that's  
4 higher. That might be the minimal level they measure  
5 at.

6 BY MR. GRIFFIS:

7 Q It says median, right?

8 MS. FORGIE: Objection, asked and answered.

9 A If it was the minimal level and they were  
10 all the same, then the median level would be the  
11 minimum, right.

12 BY MR. GRIFFIS:

13 Q So they were all 25 or shorter, 25 or  
14 longer, what?

15 A I don't know. I don't know -- I don't know  
16 why that has occurred. They don't comment on it in  
17 the papers I remember, but it might be the -- it  
18 might be the lower level of detection. I don't know.

19 Q Have you done comet assays so you know  
20 whether there is a lower limited detection?

21 A I have not done comet assays, no. But all  
22 the other values in the exposed are higher than 25  
23 which would tell me that 25 is probably the lower  
24 limit of detection.

25 Q That's your guess, right?

1 first study looked at -- looked for geno --  
2 indications of genotoxicity based on blood samples of  
3 people sprayed with glyphosate containing compounds  
4 near the Columbian border, right?

5 A Yes.

6 Q They say in the abstract -- this is near  
7 the end of the abstract -- "in conclusion, the study  
8 population did not present significant chromosomal  
9 and DNA alterations," correct?

10 A Correct.

11 Q They were looking for chromosomal  
12 fragmentation in karyotypes which is a step farther  
13 up the chain than genotoxicity, right?

14 MS. FORGIE: Objection.

15 A Yeah, it's a more specific assay.

16 BY MR. GRIFFIS:

17 Q Genotoxicity that it's going to lead to  
18 cancer is going to move through higher phases like  
19 that, like cause chromosomal damage, not just spot  
20 damage to detected --

21 A Correct.

22 Q So genotoxicity can be assessed at various  
23 levels at the very early stages of the process,  
24 damage occurring to the DNA and at higher levels  
25 looking at whether there's damage to chromosomes,



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1 whether damage is persisting and being replicated, et  
 2 cetera, right?  
 3 A Correct.  
 4 Q And they say at the end here several -- I'm  
 5 sorry, I'm on page 50, the last paragraph of the  
 6 study.  
 7 A Okay.  
 8 Q Several research studies related to  
 9 glyphosate exposure have been conducted in Columbia,  
 10 by Bolognesi, et al., and that's actually referring  
 11 to one of the studies that you cited in your expert  
 12 report?  
 13 A Correct.  
 14 Q Solomon, et al. And which stated the  
 15 publications have low geotoxic risk associated with  
 16 glyphosate, correct?  
 17 A That was --  
 18 MS. FORGIE: Objection.  
 19 A That was the conclusion of some of the  
 20 studies, yes.  
 21 BY MR. GRIFFIS:  
 22 Q Regarding our study, you obtained results  
 23 showing no chromosomal in the analyzed individuals?  
 24 A Right.  
 25 Q This is a negative study on the issue of

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1 genotoxicity in the study that causes --  
 2 A Yes, this was a study done two years later.  
 3 So I would be very surprised to see abnormalities in  
 4 chromosomes or DNA alterations two years later unless  
 5 the patients had cancer or something. So this is a  
 6 long time after the exposure.  
 7 Q For genotoxicity, for genotoxic exposure to  
 8 cause cancer it has to persist and they found no  
 9 persistence in the study, right?  
 10 MS. FORGIE: Objection.  
 11 A It's a small sample size. I would say for  
 12 the vast majority of us, the -- the damage is  
 13 repaired and doesn't persist. So it's not surprising  
 14 they didn't find anything. This is what I would have  
 15 predicted.  
 16 Q And you recall from the Bolognesi study,  
 17 which you also cite in your expert report, that they  
 18 concluded in 2011 that the genotoxic risk potentially  
 19 associated with exposure to glyphosate in areas where  
 20 it is applied on it and was low, that was their  
 21 conclusion, right?  
 22 MS. FORGIE: Objection.  
 23 A I'd like to see the conclusion but I --  
 24 Q Towards the end of the abstract, sir.  
 25 (Exhibit 16-26, article, was marked for

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1 identification.)  
 2 MS. FORGIE: Is that a new exhibit?  
 3 THE WITNESS: Yeah, 26.  
 4 MS. FORGIE: Do you have another copy?  
 5 A That was their conclusion. The basis of  
 6 that conclusion is kind of unclear.  
 7 BY MR. GRIFFIS:  
 8 Q They say, sir, in the abstract, overall  
 9 data suggests that genotoxic damage associated with  
 10 glyphosate as evidenced by small -- and appears to be  
 11 transient, correct?  
 12 A Yes.  
 13 Q And they go on to say, potentially  
 14 associated to glyphosate in areas where herbicide is  
 15 applied is low, correct?  
 16 A That's what they say.  
 17 Q A little higher in the abstract, the  
 18 increase in frequency of BMNN, that was one of their  
 19 measures of genotoxicity, right?  
 20 A Yes.  
 21 Q Observed immediately after the glyphosate  
 22 spraying was not consistent with the rates of  
 23 application used in the regions and there was no  
 24 association between self-reported direct contact with  
 25 eradication sprays and frequency of BMNN, correct?

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1 A That's what they say, but it's actually  
 2 contradicted in another area where they actually  
 3 contradict themselves. So again, it was a bit -- bit  
 4 confusing.  
 5 Q It said in multiple places that greater --  
 6 I'm sorry, that there -- that the rates of BMNN that  
 7 they observed was not consistent with rates of  
 8 application used in the regions, correct?  
 9 MS. FORGIE: Objection.  
 10 A Yeah, but the other statement is the one  
 11 I'm questioning.  
 12 Q That no significant association between  
 13 self-reported direct contact and frequency of BMNN?  
 14 A Right. Unfortunately I don't know where  
 15 they say that here.  
 16 Q Take a look at page 994, sir, right-hand  
 17 column, the last full paragraph, second to last  
 18 paragraph. There was no significant association  
 19 between self-reported direct contact with eradication  
 20 sprays and frequency of BMNN. The frequency of BMNN  
 21 and participants who self-reported because they  
 22 entered the field immediately after spraying to pick  
 23 the copa leaves, felt spray drops in their skin who  
 24 thought they were exposed was not significantly  
 25 greater than folks living in the same areas who were

1 not present during spraying; that's what they  
2 reported, right?

3 A Right.

4 MR. GRIFFIS: What's our time?

5 THE VIDEOGRAPHER: 5:40.

6 MR. GRIFFIS: I'm going to pause for a  
7 minute.

8 THE VIDEOGRAPHER: Off the record at 5:13  
9 p.m.

10 (Brief recess.)

11 THE VIDEOGRAPHER: We are back on the  
12 record at 5:18 p.m.

13 MR. GRIFFIS: Dr. Weisenburger, during the  
14 break, I was told that we have used 5 hours and 40  
15 minutes of deposition time of seven hours, default under  
16 the federal rules. Because we have identified multiple  
17 areas of documents, including the documents that you had  
18 told us about that you had relied on yesterday -- this  
19 is going to be another one of those statements that  
20 don't require you to say anything, sir. There were  
21 multiple documents that you provided to us only  
22 yesterday for which we have not had time to even acquire  
23 the relevant documents in this location or review them  
24 or prepared to ask you questions about them for which  
25 you originally provided information about which ones you

1 considered important enough to put into that expert  
2 report. But that information is lost to us by the  
3 manner in which they were presented to us.

4 And the identification of multiple documents  
5 that reflect other areas of interest to us, such as  
6 drafts of NAPP study, e-mails with the authors of those  
7 studies, et cetera, things that were requested in the  
8 document production request and not produced, I'm going  
9 to reserve the remainder of my time to return and  
10 question you about those matters and forego a good deal  
11 of questioning I could do otherwise on remaining areas  
12 of your expert report, we feel that the newly disclosed  
13 and identified stuff that we can't get into today  
14 because we don't have it at all or because it was so  
15 recently disclosed is more important.

16 So I'm going to stop at this time and suspend  
17 my questioning of you at this time. There will probably  
18 have to be motions practice as to circumstances of our  
19 return, but I'll have an hour and 20 minutes. Turn it  
20 over to you.

21 MS. FORGIE: Yeah. And, of course, we  
22 don't agree with any of that. We are producing him  
23 today. We are prepared to complete the deposition  
24 and go forward in the other hour and 20 minutes and I  
25 highly intend that you do.

1 MR. GRIFFIS: I can do that only if you  
2 provided me with all the documents we asked for.

3 MS. FORGIE: We're not going to argue.  
4 We're going to take a two-minute break because we may  
5 have a few questions to ask.

6 THE VIDEOGRAPHER: We are off the record at  
7 5:21 p.m.

8 (Brief recess.)

9 THE VIDEOGRAPHER: We are back on the  
10 record at 5:31 p.m.

11 EXAMINATION

12 BY MS. FORGIE:

13 Q Doctor, I have just a few questions for  
14 you.

15 You were asked some questions about expert  
16 work you have done for defendants in the past; do you  
17 remember those questions?  
18

19 A Yes.

20 Q And have you reviewed literature for  
21 defendants with regard to asbestos and whether or not  
22 asbestos is a risk factor for Non-Hodgkin's Lymphoma?

23 A Yes, I've handled quite a number of cases  
24 alleging that asbestos causes Non-Hodgkin's Lymphoma  
25 and my position has always been that asbestos does

1 not increase the risk or cause Non-Hodgkin's  
2 Lymphoma.

3 Q And you gave those opinions to defendants,  
4 is that correct, defendant's lawyers?

5 A Yes.

6 Q You mentioned that you had read the  
7 expert's -- had read the expert report of  
8 Dr. Portier; do you remember that testimony?

9 A Yes.

10 Q And you also mentioned that you read the  
11 expert report of Dr. Jameson; do you remember that  
12 testimony?

13 A Yes.

14 Q Did you read those reports before or after  
15 you wrote your expert report?

16 A After -- after I wrote my report.  
17 Actually, I read them just recently.

18 Q But after you wrote your own report?

19 A Yes.

20 Q So you couldn't have relied on those  
21 reports in forming -- in drafting your report since  
22 you read them afterwards, correct?

23 MR. GRIFFIS: Objection, leading.

24 A That's correct.

25 Q With regard to your criticisms of the draft

1 manuscript of unpublished -- of the unpublished  
 2 health study, you relied upon your review of the  
 3 drafts in making your criticisms about the imputation  
 4 of exposure data given the increased use of  
 5 glyphosate; is that correct?

6 MR. GRIFFIS: Objection, leading.

7 A That's correct.

8 Q And you only relied upon the Ritz rebuttal  
 9 report to confirm your opinion; is that correct?

10 MR. GRIFFIS: Objection, leading contrary  
 11 to his testimony.

12 A Yes.

13 Q You were asked numerous questions about the  
 14 NAPP study and the draft manuscripts of the NAPP  
 15 study; do you remember those questions?

16 A Yes.

17 Q Do you recall if the NAPP study made a  
 18 breakdown of odds ratios for people who used  
 19 glyphosate for more than two days per year?

20 A Yes.

21 Q Do you remember approximately the odds  
 22 ratio for people in the NAPP study for people who  
 23 used glyphosate for more than two days per year?

24 A Yes, it was approximately two -- twofold  
 25 increase and that was -- it was statistically

1 BY MS. FORGIE:

2 Q Where any of those additional studies  
 3 necessary to your expert report?

4 A No.

5 Q And do any of those additional studies  
 6 change any of the opinions that were expressed in  
 7 your expert report?

8 A No.

9 MS. FORGIE: I don't have anything else.

11 RE-EXAMINATION

12 BY MR. GRIFFIS:

13 Q Did you discuss the content of any of these  
 14 questions during the break just now?

15 MS. FORGIE: Objection, don't answer that.  
 16 That's privileged.

17 MR. GRIFFIS: Questioning on a break during  
 18 a deposition is privileged?

19 MS. FORGIE: Yeah, any discussions between  
 20 us are privileged, you know, both by agreement and by  
 21 the rules.

22 MR. GRIFFIS: No further questions.

23 MS. FORGIE: Thank you.

24 THE VIDEOGRAPHER: This concludes today's  
 25 proceedings of Dr. Dennis Weisenburger. The total

1 significant and had been adjusted for the other three  
 2 pesticides.

3 Q Okay. And was that data presented in one  
 4 of the slide shows that are publicly available in  
 5 connection with the NAPP study?

6 A Yes.

7 Q Did you provide me any draft manuscripts of  
 8 the NAPP study?

9 A No.

10 Q Why is that?

11 A Because it wouldn't have been ethical or  
 12 correct or academically correct.

13 Q Why is that?

14 A Well, because it's -- it's -- can't think  
 15 of the terminology. It's -- it's not academic  
 16 practice to make preliminary publications available  
 17 for public use.

18 Q Okay. And you were asked -- you provided  
 19 additional studies to me that -- the day after Labor  
 20 Day and then I provided them to the defense; do you  
 21 remember that testimony?

22 A Yes.

23 MR. GRIFFIS: Objection, counsel's  
 24 testifying.

25 MS. FORGIE: I'd love to, but I can't.

1 number of videotapes used today was four and we're  
 2 off the record at 5:36 p.m.

1 STATE OF CALIFORNIA )  
 ) ss  
 2 COUNTY OF LOS ANGELES )  
 3 I, KATHERINE FERGUSON, Certified Shorthand  
 4 Reporter, for the State of California, do hereby  
 5 certify:  
 6 That prior to being examined, the witness named in  
 7 the foregoing deposition, was by me duly sworn to  
 8 testify the truth, the whole truth and nothing but the  
 9 truth;  
 10 That the testimony of the witness and all  
 11 objections made at the time of the examination were  
 12 recorded stenographically by me;  
 13 That the foregoing transcript is a true record of  
 14 the testimony and all objections made at the time of the  
 15 examination.  
 16 Before completion of the deposition, review of the  
 17 transcript [x] was [ ] was not requested. If requested,  
 18 any changes made by the deponent (and provided to the  
 19 reporter) during the period allowed are appended hereto.  
 20 I hereby certify that I am not interested in the  
 21 event of the action.  
 22 IN WITNESS WHEREOF, I have subscribed my name this  
 23 13th day of September, 2017.  
 24 \_\_\_\_\_  
 25 Katherine Ferguson, CSR 12332

1 NAME OF CASE: In re: Roundup Products Liability Litigation  
 2 DATE OF DEPOSITION: 9/11/2017  
 3 NAME OF WITNESS: Dennis Weisenburger, M.D.  
 4 Reason Codes:  
 5 1. To clarify the record.  
 6 2. To conform to the facts.  
 7 3. To correct transcription errors.  
 8 Page \_\_\_\_\_ Line \_\_\_\_\_ Reason \_\_\_\_\_  
 9 From \_\_\_\_\_ to \_\_\_\_\_  
 10 Page \_\_\_\_\_ Line \_\_\_\_\_ Reason \_\_\_\_\_  
 11 From \_\_\_\_\_ to \_\_\_\_\_  
 12 Page \_\_\_\_\_ Line \_\_\_\_\_ Reason \_\_\_\_\_  
 13 From \_\_\_\_\_ to \_\_\_\_\_  
 14 Page \_\_\_\_\_ Line \_\_\_\_\_ Reason \_\_\_\_\_  
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 23 From \_\_\_\_\_ to \_\_\_\_\_  
 24 \_\_\_\_\_  
 25 \_\_\_\_\_

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