



Johnson v. Monsanto

 Farmer, Donna (Vol. 01) - 01/11/2017

1 CLIP (RUNNING 01:07:48.859)

 Good morning. ...

DF-0111-0001321

120 SEGMENTS (RUNNING 01:07:48.859)



1. PAGE 13:21 TO 14:18 (RUNNING 00:00:28.615)

21 Good morning.  
22 A. Good morning.  
23 Q. What is your name?  
24 A. Donna Farmer.  
25 Q. Donna Farmer, by whom are you  
00014:01 employed?  
02 A. Monsanto Company.  
03 Q. And how long have you, Donna  
04 Farmer, been employed by Monsanto Company?  
05 A. Since September of 1991.  
06 Q. Okay. Don't make me do the  
07 math.  
08 How many years have you been  
09 with Monsanto?  
10 A. 25 years.  
11 Q. 25 years continuously employed  
12 with Monsanto?  
13 A. Yes.  
14 Q. And as we sit here today, still  
15 employed by Monsanto?  
16 A. Yes, I am.  
17 Q. Okay. And what would you  
18 describe your title as?

2. PAGE 14:23 TO 15:19 (RUNNING 00:00:45.120)

23 THE WITNESS: I'm a  
24 toxicologist in our product safety  
25 center.  
00015:01 QUESTIONS BY MR. MILLER:  
02 Q. Would you -- is it fair to say  
03 that you're the lead spokesperson for  
04 Monsanto and Roundup?  
05 A. I have been one of the  
06 spokesperson for the safety of Roundup when  
07 it comes to the toxicology.  
08 Q. Ma'am, who is Christophe  
09 Gustin?  
10 A. Christophe Gustin is the head  
11 of our regulatory affairs for chemical  
12 products in Europe.  
13 Q. And how long, approximately,  
14 has he been with the company?  
15 A. I don't know. I've known him  
16 for many years.  
17 Q. And you work together with him  
18 as the job requires?  
19 A. Yes.

3. PAGE 18:22 TO 18:24 (RUNNING 00:00:07.594)

22 Q. Okay. So because of your  
23 knowledge and experience with Roundup, you  
24 were selected to defend Roundup, weren't you?

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**4. PAGE 19:02 TO 19:21 (RUNNING 00:00:40.648)**

02 THE WITNESS: I have been  
03 involved with glyphosate since 1996,  
04 so as this indicated, I had a lot of  
05 knowledge. And so based on that in  
06 depth knowledge for over those many  
07 years, yes, I was asked to be -- help  
08 defend glyphosate.  
09 QUESTIONS BY MR. MILLER:  
10 Q. Okay. And that's your job,  
11 defend Roundup, right?  
12 A. No, that's not my job. I  
13 wouldn't agree with that.  
14 My job is to make sure as a  
15 regulatory toxicologist for glyphosate that  
16 we meet all the requirements by the  
17 regulators. And then there are times when  
18 there are questions that are asked about the  
19 molecule that we need to do responses for.  
20 So it's more than just, as you  
21 say, defending the molecule.

**5. PAGE 23:11 TO 23:24 (RUNNING 00:00:38.357)**

11 Now the truth is as early as  
12 2004, your job was to defend the glyphosate  
13 business, right?  
14 A. Yes. And again, I want to put  
15 that in context, that it's not just about  
16 defending glyphosate; it's about being  
17 technically correct. And so to be the  
18 toxicologist for glyphosate, you need to know  
19 the toxicology database, you need to know  
20 what the regulatory agencies' reviews are  
21 thinking about them; and then when there are  
22 questions or allegations about it, then we go  
23 back and we put those into context and  
24 support the product, yes.

**6. PAGE 24:03 TO 24:07 (RUNNING 00:00:13.503)**

03 Q. Here is what we're going to  
04 mark as 1:3, ma'am, produced from your file,  
05 and it's a document with your name on the  
06 top, produced again from your file, Donna  
07 Farmer.

**7. PAGE 24:16 TO 24:21 (RUNNING 00:00:13.791)**

16 Q. Donna Farmer, do you see that  
17 on the top left-hand corner?  
18 A. Uh-huh.  
19 Q. And it says your number one  
20 goal, "Defend and maintain the global  
21 glyphosate or Roundup business," right?

**8. PAGE 24:25 TO 25:22 (RUNNING 00:00:44.395)**

25 THE WITNESS: It does say that,  
00025:01 but, again, that's the phrase that was  
02 used. But it's more than just doing  
03 that. It's about being technically  
04 aware of what is going on with this.  
05 So when you look on the other  
06 side, you will see that it talks about  
07 technical expertise and deliverables  
08 that then would come into the position  
09 of helping to defend glyphosate.

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10 QUESTIONS BY MR. MILLER:  
11 Q. And to put the context in a  
12 time frame, your job has been, at least since  
13 2004, to defend and maintain the global  
14 glyphosate or Roundup business, right?  
15 A. Yes, I provided technical  
16 support in helping defend glyphosate since  
17 that time.  
18 Q. And that's what you're doing  
19 here today?  
20 A. I am here to, again, answer

 -KE0271 - Clear Attached Exhibit 0271



21 technical questions on glyphosate, and I have  
22 that background to be able to do that.

**9. PAGE 45:10 TO 45:15 (RUNNING 00:00:18.271)**

 0304 -



10 Q. Let's look at the document 1:7,  
11 and this is the media training that was  
12 produced. Here's a copy for you, ma'am,  
13 thank you, and a copy for you, Counsel.  
14 You've seen this before,  
15 haven't you, ma'am?

**10. PAGE 45:19 TO 46:04 (RUNNING 00:00:23.919)**

19 THE WITNESS: Yes.  
20 QUESTIONS BY MR. MILLER:  
21 Q. Yes, ma'am.  
22 And this was one of the  
23 documents that you used in media training,  
24 true?  
25 A. Yes.

 0304-018 -



00046:01 Q. Okay. Let's go to Bates  
02 stamp 2054, and there's some handwriting on  
03 this page.  
04 Is that your handwriting?

**11. PAGE 46:05 TO 46:13 (RUNNING 00:00:20.786)**

05 A. Yes.  
06 Q. Okay. So moving from the  
07 question to the answer you want to give,  
08 that's one of the skills that you were  
09 taught, right?  
10 A. In media training, yes.  
11 Q. All right. And this is your  
12 handwriting, "to the contrary," right?  
13 A. That is my handwriting.

**12. PAGE 46:14 TO 46:16 (RUNNING 00:00:04.193)**

14 Q. Okay. Go to the last page, if

 0304-028 -



15 you would, ma'am. A few questions, and we'll  
16 leave that document.

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**13. PAGE 46:23 TO 47:02 (RUNNING 00:00:14.516)**

23 Q. And this is page 22064. This  
24 is your handwriting?  
25 A. Yes.  
00047:01 Q. Okay. And you wrote about IARC  
02 here, right?

**14. PAGE 47:09 TO 47:13 (RUNNING 00:00:12.838)**

09 Q. Do you see the IARC there?  
10 A. Yes, I do, right there.  
11 Q. All right. So you were in  
12 media training dealing with the IARC issue,  
13 fair?

**15. PAGE 47:19 TO 47:23 (RUNNING 00:00:11.239)**

19 A. We were asked to be available  
20 to address questions based on the IARC  
21 decision, and as a technical person to

 -KE0304-028 - Clear Attached Exhibit 0304-028




22 support glyphosate, that was what I was asked  
23 to do.

**16. PAGE 47:24 TO 48:06 (RUNNING 00:00:22.305)**

24 Q. Okay. All right. Now, ma'am,  
25 as a Monsanto employee and a person with your  
00048:01 particular skills and expertise that we've  
02 been discussing about, even you, Donna  
03 Farmer, cannot say that Roundup does not  
04 cause cancer, true?  
05 A. Roundup does not cause cancer.  
06 There's no data that supports that statement.

**17. PAGE 48:23 TO 49:04 (RUNNING 00:00:18.984)**

23 Q. Let's take a look at the  
24 documents you prepared before the lawsuit was

 0305 -



25 filed, ma'am. This is 1:8, produced from  
00049:01 your file, and I have a copy for you and a  
02 copy for counsel.  
03 You've seen this before,  
04 haven't you, ma'am?

**18. PAGE 49:16 TO 49:16 (RUNNING 00:00:02.069)**

16 Q. Let me know when you're ready.

**19. PAGE 49:17 TO 51:06 (RUNNING 00:01:24.008)**

17 All right, ma'am. Now this is  
18 a document, a copy of an e-mail, sent by you,  
19 right, ma'am? Donna Farmer?  
20 A. Yes.  
21 Q. Okay. And it was sent by you  
22 on September 21, 2009, right?  
23 A. Yes.  
24 Q. And it's concerning Roundup,  
25 right?  
00050:01 A. Yes.  
02 Q. And in that you say this: "You  
03 cannot say that Roundup does not cause  
04 cancer. We have not done the carcinogenicity

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05 studies with Roundup."  
06 Did I read that correctly?  
07 A. Yes, you did read that  
08 correctly.  
09 But I want to point out that I  
10 should have -- in other e-mails that I have  
11 done is that what we talk about is while we  
12 have not done carcinogenicity with Roundup  
13 per se, we have data on glyphosate. We don't  
14 believe the surfactants -- they are not  
15 carcinogenic.  
16 So normally what I would say is  
17 that when you put those two together, even  
18 though we haven't done these carcinogenicity  
19 studies, that there is no evidence that  
20 Roundup would be carcinogenic.  
21 Q. I want to read what you said  
22 before the lawsuit was filed.  
23 You said, "You cannot say that  
24 Roundup does not cause cancer...we have not  
25 done carcinogenicity studies."  
00051:01 For those of us that aren't  
02 cancer doctors, carcinogenicity studies mean  
03 studies about whether something causes  
04 cancer, right?  
05 A. We are looking to see if tumors  
06 are --

**20. PAGE 51:12 TO 51:25 (RUNNING 00:00:33.217)**

12 A. Could you repeat it again? I'm  
13 sorry.  
14 Q. Carcinogenicity studies, what  
15 does that mean?  
16 A. Those are animal studies where  
17 we look to see if there's a relationship  
18 between tumors and exposure to the substance.  
19 Q. How long has Monsanto been  
20 selling Roundup? Since 1974?  
21 A. Yes.  
22 Q. So from 1974 -- and help me  
23 with the math -- to 2009, 35 years?  
24 35 years, and no studies on  
25 whether Roundup caused cancer?

**21. PAGE 52:03 TO 53:24 (RUNNING 00:01:24.502)**

03 THE WITNESS: As I was saying  
04 that we are not required to do chronic  
05 carcinogenicity studies on the  
06 formulated product, but we are on the  
07 active ingredient. And based on that  
08 data and based on our knowledge of the  
09 surfactants, we can put those two  
10 together. And that's I was saying,  
11 this should have had an additional  
12 statement in it.  
13 If you look at other e-mails of  
14 mine, you would find that I would put  
15 that in there that we have no evidence  
16 of carcinogenicity with glyphosate, we  
17 have no evidence with the surfactant.  
18 Therefore, even though we haven't done  
19 any carcinogenicity studies with  
20 Roundup, we would not have any  
21 evidence to support that it says it  
22 would cause cancer.

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23 QUESTIONS BY MR. MILLER:  
24 Q. You're cautioning John Combest?  
25 Is that his name?  
00053:01 A. That's John Combest, yes.  
02 Q. Okay. Who is he?  
03 A. He was in our public affairs  
04 group.  
05 Q. Okay. So you're telling public  
06 affairs in 2009, "You can't say Roundup does  
07 not cause cancer," right?  
08 A. And again -- I said that, but,  
09 again, my mistake in this e-mail was that I  
10 didn't put in the qualifiers that I normally  
11 do.  
12 Q. You said we haven't done the  
13 studies with Roundup?  
14 A. Again, we have not done the  
15 studies, but we are not required, but we have  
16 data, both from glyphosate and the  
17 surfactant, to say that Roundup would not  
18 cause cancer.

 -KE0305 - Clear Attached Exhibit 0305



19 Q. Roundup is a combination of  
20 glyphosate and a surfactant, true?  
21 A. Yes, in addition to a lot of  
22 water.  
23 Q. And surfactant's not water, is  
24 it?

**22. PAGE 54:05 TO 54:25 (RUNNING 00:00:45.292)**

05 A. No. But you left out one of  
06 the major components of a Roundup-branded  
07 product is water.  
08 Q. I didn't mean to leave out  
09 anything.  
10 Tell the jury in lay terms what  
11 a surfactant is.  
12 A. A surfactant is a  
13 surface-acting molecule that helps really  
14 reduce the tension so that a droplet of water  
15 can then spread a soft surface.  
16 You will find surfactants in  
17 products like pesticides as well as in  
18 consumer and home care products.  
19 Q. And to be clear, the surfactant  
20 helps the glyphosate adhere to the plant  
21 longer, right?  
22 A. No, it helps the water droplet  
23 to spread and stay the plant leaf surface  
24 longer so that glyphosate then can penetrate  
25 through the leaf.


**23. PAGE 118:22 TO 119:06 (RUNNING 00:00:25.085)**

22 Q. Ma'am, your name originally  
23 appeared on the Williams article as an  
24 author, the Amy Williams article, and then it  
25 was struck out before it was published.  
00119:01 Are you aware of that?  
02 A. Yes, I was. I told him that I  
03 didn't do anything on it and my name  
04 shouldn't be on it. I had made some edits,  
05 but it was not at a level where I was -- not  
06 to be an author.

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24. PAGE 120:03 TO 120:07 (RUNNING 00:00:10.638)

03 Q. Let's mark as Exhibit 1:18 the

 0258 -

04 e-mail where you admit you added a section of  
05 genotoxicity.  
06 All right. Here's a -- that  
07 right there.

25. PAGE 120:12 TO 120:13 (RUNNING 00:00:03.231)

12 Q. Ma'am, that's an e-mail from  
13 you, right?

26. PAGE 120:14 TO 121:24 (RUNNING 00:01:15.929)

14 To one of the authors of the  
15 Williams paper, John M. DeSesso.

16 A. DeSesso.

17 Q. Excuse me.

18 And what you're telling -- is  
19 it Dr. DeSesso?

20 A. DeSesso.

21 Q. Okay. I'm sorry.

22 Okay. So you're telling

23 Dr. DeSesso regarding this Williams article  
24 that "I added a section in genotox," right,  
25 from the Gasnier study?

00121:01 A. Yes.

02 Q. Right?

03 A. Uh-huh.

04 Q. And you were working on a  
05 section for Gasnier on the mechanistic  
06 section, right?

07 A. The reason why I did that is  
08 there was more information that Dr. DeSesso  
09 and Dr. Williams were not aware of, and I  
10 wanted them to be -- have that information  
11 available for them if they chose to keep it  
12 in their publication or not.

13 Q. And you also cut and pasted  
14 summaries of the POEA surfactant studies,  
15 right?

16 A. Again, very open that we  
17 provided those. The summaries are what they  
18 are, uh-huh.

19 Q. Well, ma'am, it's not very  
20 open. If a scientist looks at the article,  
21 he doesn't know that the genotoxic section  
22 was written by a Monsanto employee, right,  
23 because your name's not on the list of  
24 authors?

27. PAGE 122:04 TO 122:20 (RUNNING 00:00:36.481)

04 A. As I said, we have contributed  
05 to these articles. We want to make sure that  
06 they are full. I think when I look at what I  
07 did, I wanted to make sure they had the full  
08 range of information available to them that  
09 they may not have been aware of and that  
10 everyone knows that Monsanto -- they talk  
11 about us in their credits. And it's a  
12 very -- it's a lot of pages. I mean, it's a  
13 very large document. So these are only just



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 -KE0258 - Clear Attached Exhibit 0258



14 a few sections in a very, very large  
15 document.  
16 Q. But if an independent scientist  
17 reads this, he's not going to know that  
18 Monsanto cut and pasted the summaries of the  
19 POE surfactant studies because your name was  
20 removed as author?

28. PAGE 122:25 TO 123:16 (RUNNING 00:00:35.577)

25 A. Again, it's a draft for them to  
00123:01 include or exclude in their final  
02 publication. And we provide input all the  
03 time because we have some more of the  
04 knowledge that they do, but there's nothing  
05 here that we're trying to hide. We're  
06 actually adding more information for them to  
07 include in that review.  
08 Again, under the umbrella of  
09 transparency, we're trying to make sure that  
10 it's a really thorough, complete document.  
11 And then they can choose in that sense to  
12 either complete them, change them, delete  
13 them, do whatever they want to do with them.  
14 Q. The only thing that's hidden is  
15 that it was cut and pasted by a Monsanto  
16 employee?

29. PAGE 123:19 TO 123:23 (RUNNING 00:00:08.046)


19 THE WITNESS: There's nothing  
20 wrong with that. That's just  
21 providing some information for them to  
22 choose to incorporate into their  
23 document or not.

30. PAGE 127:18 TO 128:06 (RUNNING 00:00:27.709)

18 Q. Okay. In 2015, Bill Heydens  
19 tried to get John Acquavella to ghostwrite an  
20 article, and John Acquavella refused because  
21 it was unethical.  
22 You knew about that, didn't  
23 you?  
24 A. I knew that there was -- my  
25 understanding was there was a disagreement, a  
00128:01 misunderstanding, of that, that I don't  
02 believe it was to be a ghostwritten article.  
03 So I don't know all the details, but I knew  
04 that there was a disagreement and  
05 misunderstanding between John and Bill as to  
06 what was to be expected.

31. PAGE 128:10 TO 128:14 (RUNNING 00:00:20.865)

10 Q. The next document we're going  
11 to look at is a series of e-mails about this  
12 request, and we'll discuss them.

 0261 -



13 Exhibit 1:20. Ma'am, here's a  
14 copy for you and a copy for counsel.



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32. PAGE 128:18 TO 128:23 (RUNNING 00:00:17.770)

18 Now, this is a series of  
19 e-mails concerning that concern that  
20 Dr. Acquavella had about being asked to  
21 ghostwrite. I want to start at the back and  
22 look at these. You ultimately come into this  
23 e-mail chain.

33. PAGE 129:10 TO 129:17 (RUNNING 00:00:17.394)

10 Q. Okay. So in this series of  
11 e-mails that you ultimately come into, let's  
12 start at the back and look at them. I have a  
13 few questions.  
14 Okay?  
15 A. Where are you starting?  
16 Q. I'm on page 30790.  
17 Do you see that page?

34. PAGE 129:22 TO 130:04 (RUNNING 00:00:24.111)

22 Q. On that page, John Acquavella  
23 writes to Bill Heydens and says, "Bill, the  
24 plan sounds fine. I don't see my name in the  
25 author's list. I should be where Tom Sorahan  
00130:01 is, and he should be later in the  
02 alphabetical order."  
03 Do you see that, ma'am?  
04 A. Yes.

35. PAGE 130:19 TO 133:22 (RUNNING 00:03:11.530)


0261-003 -



19 Q. So John writes back on  
20 November 3, 2015, to your boss/coworker,  
21 William Heydens, and says, "I didn't realize  
22 that, Bill. Also, I don't think that will be  
23 okay with my panelists. We call that  
24 ghostwriting, and it is unethical."  
25 It's true, ghostwriting is  
00131:01 unethical, isn't it?  
02 A. Again, that's what it says, but  
03 that's not what happened. Again, I think  
04 there was a big misunderstanding in this.  
05 John wrote that. He was  
06 obviously very concerned, but that's not what  
07 happened. He is a very open author on it.  
08 And as we talk about, you can see up in here,  
09 we keep talking about there was a huge  
10 misunderstanding around authorship.  
11 Q. Let's --  
12 A. And he became an author.  
13 Q. Let's look at this  
14 misunderstanding some more.  
15 You were brought in on the next  
16 e-mail chain of this, weren't you?  
17 A. Uh-huh.  
18 Q. Okay. So "Any chance that  
19 Donna and I could have a 1:30 call with you  
20 today about this issue," right?  
21 A. Uh-huh.  
22 Q. Okay.  
23 A. It's a lot easier to talk with  
24 people than to just keep doing e-mails.  
25 Q. No record that way?

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00132:01 A. No, I don't think it was that.  
02 It's just a lot easier to get on the phone  
03 and have a conversation.  
04 Q. So after that conversation, or  
05 just before, I don't want to get my timing  
06 wrong, but John sends to you and  
07 Dr. Heydens -- and I'm on the first page

 0261-002 -



08 here. He sends you and Mr. Heydens a poster,  
09 expert panel poster, from a meeting, right?  
10 It starts on the bottom of  
11 page 1 and goes over to page 2.  
12 Do you see that?  
13 A. Yes, uh-huh.  
14 Q. Okay. And what he tells you is  
15 that there is an International Committee of  
16 Medical Journal Editors recommendations for  
17 conduct, reporting, editing of publication  
18 and scholarly work in medical journals,  
19 right?  
20 A. Uh-huh.  
21 Q. And he holds one key point in  
22 there. "All persons designated as authors  
23 should qualify as authorship, and all those  
24 who qualify should be listed," right?  
25 A. Yes.  
00133:01 But again, I point out to you  
02 that this was a misunderstanding, which is  
03 taken care of very -- in the next thing. We  
04 spoke. He was an author on the presentation.  
05 He was an author on the manuscript.  
06 And so, unfortunately, there  
07 was this conversation due to really an  
08 unfortunate understanding of what his role  
09 was, what it grew to be, and all these  
10 different things. And again, he's one of the

 -KE0261-002 - Clear Attached Exhibit 0261-002



11 authors.  
12 Q. Ma'am, you were one the  
13 ghostwriters of the Intertek publications  
14 too, weren't you?  
15 A. No, I -- there was no  
16 ghostwriting to begin with. Let's just put  
17 that forward.  
18 And the second one was I didn't  
19 have anything to do with the Intertek  
20 publications other than maybe provide some  
21 studies or documents that the authors might  
22 have needed.

36. PAGE 140:25 TO 141:20 (RUNNING 00:00:45.749)


25 Q. Okay. So I want to take you  
00141:01 back now to 1999 again. And you remember  
02 that the Italian government was concerned  
03 about the genotoxicity potential of Roundup,  
04 and you worked on that issue, didn't you?  
05 A. I remember some questions back  
06 at that time, yes.  
07 Q. And in order to work on that  
08 issue back at that time, you went to a  
09 Dr. Parry in England to have him look at the  
10 issue of whether Roundup was genotoxic.

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11 Do you remember that?  
12 A. I don't believe I was the one  
13 that contacted Dr. Parry.  
14 Q. Monsanto contacted Dr. Parry,  
15 true?  
16 A. I do believe that Dr. Parry was  
17 contacted by Monsanto.  
18 Q. And it was Mark Marteens [sic]  
19 who initially contacted him, right?  
20 A. Mark Martens.

**37. PAGE 141:25 TO 142:02 (RUNNING 00:00:10.159)**

25 Q. And let's take a look at that a  
00142:01 little bit. I want to look at it with you,

 **0263 -**


02 produced by Monsanto, Exhibit 1:22.

**38. PAGE 142:17 TO 142:18 (RUNNING 00:00:02.797)**

17 Q. When you've had a chance to  
18 review, I have a few questions.

**39. PAGE 142:19 TO 144:03 (RUNNING 00:01:26.597)**

19 A. Okay.  
20 Q. So this was concerning an  
21 official request by the Italian government,  
22 right?  
23 A. The first one starts off, yes.  
24 Q. Yes, ma'am.  
25 And going to page 2, if you

 **0263-002 -**

00143:01 would, please, which is 2108, external global  
02 network of genotox experts.  
03 Do you see that?  
04 A. Oh, yes.  
05 Q. And it says there in this  
06 Monsanto document that Dr. Parry is  
07 recognized -- is a recognized genotox expert.  
08 Do you see that?  
09 A. Yes.  
10 Q. You agree with that, don't you?  
11 A. I did not know Dr. Parry, but  
12 that's what I had been told, yes.  
13 Q. And it was proposed that Mark  
14 Martens would contact Dr. Parry and ask him  
15 for a written review of articles that  
16 appeared in the public literature, four of  
17 them, right? Rank, Bolognesi, Peluso and  
18 Lioi, right?  
19 A. Yes.  
20 Q. And you were also going to  
21 start expanded discussions with Dr. Gary  
22 Williams, the gentleman you talked about who  
23 wrote an article for Monsanto, right?  
24 A. Yes.  
25 Q. Okay. Now, Dr. Parry looked at  
00144:01 those four articles about Roundup, or


 **-KE0263-002 - Clear Attached Exhibit 0263-002**

02 glyphosate, and wrote you a report, right?  
03 A. I don't remember.

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40. PAGE 144:07 TO 144:09 (RUNNING 00:00:11.121)

07 Q. Here is Dr. Parry's first

 0264 -

08 report. We'll mark it as Exhibit 1:23,  
09 produced to us by Monsanto in discovery.


41. PAGE 144:10 TO 144:25 (RUNNING 00:00:57.760)

10 All right. Ma'am, what we're  
11 looking at here is a cover page from the  
12 Monsanto technical center, and it's a  
13 handwritten letter from Mark. It says, "Dear  
14 Alan, Donna and Bill, please find  
15 herewith" -- an English style -- "Professor  
16 Parry's evaluation of the four papers I sent  
17 him on genotoxicity of glyphosate and  
18 Roundup," right?

19 A. Yes.

20 Q. So I want to look -- I have a  
21 few questions for you, okay?

22 Dr. Parry's report, if we could

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23 look at page 2097, which is the second -- I'm  
24 sorry, the third page of his report, I  
25 suppose?

42. PAGE 145:05 TO 146:14 (RUNNING 00:01:19.392)

05 Q. And he says, "In conclusion" --  
06 concerning the Rank paper.

07 "Conclusion: There's in vitro  
08 evidence of genotoxic effect of Roundup  
09 mixtures inadequate in vivo studies."

10 Do you see that?

11 A. Uh-huh.

12 Q. Okay. Now, in vitro, what does  
13 that mean?

14 A. That means that it was in a  
15 petri dish experiment. So you had a  
16 substance, a cell or some organism, in a  
17 petri dish, and you were pouring the Roundup  
18 formulation on top of it.

19 Q. And so the expert that you  
20 retained to review the Rank paper said the  
21 paper showed in vitro evidence of genotoxic  
22 effect.

23 What does genotoxic mean again?

24 A. Again, it's damage to genetic

 0264-006 -

25 material either through DNA mutations or  
00146:01 structural damage or DNA repair.

02 Q. All right. Let's go to 2098.

03 A. Again, you remember this is the  
04 in vitro with the Roundup formulation with  
05 the surfactant that we talked about earlier.

06 Q. Yes.

07 So now on 2A we're looking --  
08 he's reviewed for you the Bolognesi paper,  
09 and I want to go to 2098.

10 And his conclusions from  
11 reviewing that paper was that there was a

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12 positive response in vitro SEC [sic] for both  
13 compounds.  
14 What's SEC mean?

43. PAGE 146:17 TO 150:13 (RUNNING 00:03:47.999)

17 THE WITNESS: It's another  
18 marker looking at the structure of the  
19 genetic material, sister chromatid  
20 exchange.  
21 QUESTIONS BY MR. MILLER:  
22 Q. He finds the response at ten  
23 times lower concentration for Roundup  
24 mixture, right?  
25 A. Again, we're talking about it  
00147:01 had a surfactant in it, and we talked about  
02 how surfactants can damage -- so these are  
03 human lymphocytes in vitro, and that  
04 surfactant, again, can damage the cell  
05 membrane. It has nothing to do with being  
06 genotoxic. It has to do with cytotoxicity,  
07 and secondary you could get some genetic  
08 effects.  
09 Q. Both glyphosate and Roundup  
10 mixture produced positive response in mouse  
11 bone marrow micronucleus assay, right?  
12 A. Yes, which is very unusual.  
13 Q. Both glyphosate and Roundup  
14 mixture produced increase in DNA strand  
15 breaks in mouse liver and kidney, right?  
16 A. Where are you?  
17 I think this one is important  
18 to note that the route of exposure for these  
19 of the liver and the kidney. The route of  
20 exposure was an injection of the formulated  
21 product, the products, into the abdomen of  
22 the animals.  
23 Q. He also wrote, "Glyphosate  
24 increased the 8-OHdG in mouse liver."  
25 What is 8-OHdG?  
00148:01 A. Cells can be -- there are what  
02 they call reactive oxygen species. They're  
03 oxygen. And through normal cellular  
04 processes or through external exposure to  
05 things you can have these oxygen species  
06 formed.  
07 And then the body has what they  
08 call antioxidant mechanisms, and then they  
09 will then, in the normal production of just  
10 daily living or if there's an external  
11 insult, those antioxidant mechanisms then  
12 will come into play then to reduce those free  
13 radical.  
14 Q. We call that oxidative stress,  
15 right?  
16 A. Well, it is a part of oxidative  
17 stress, yes.  
18 Q. And oxidative stress can  
19 increase one's risk of cancer?  
20 A. Not directly. I mean, I think  
21 there's a lot of people who have an opinion  
22 about that.  
23 When you're looking at  
24 oxidative stress in this situation, as I  
25 pointed out, this was given to these animals  
00149:01 intraperitoneally, injected into them, and  
02 then they were looking at the effects of

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03 those organs that were exposed to the actual  
04 physical presence of these substances on  
05 those organisms.  
06 And oxidative stress is very  
07 much related to cell injury, cytotoxicity.  
08 So that's what we have been talking about  
09 here is direct damage to cells. And then  
10 they have a certain function that they will

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11 do to protect themselves.  
12 Q. And Roundup -- not just  
13 glyphosate increase 8-OHdG, but Roundup  
14 mixture increased 8-OHdG in mouse liver and  
15 kidney, right?  
16 A. That's what it says, but,  
17 again, remember, this was injected into the  
18 animals' abdomen, a very unusual route of  
19 exposure for an herbicide like Roundup.  
20 Q. Let's go to page 2012 of  
21 Dr. Parry's first report here.  
22 A. 2012?  
23 Q. Yes, ma'am.  
24 I'm sorry, 2102. Excuse me.  
25 2102.

00150:01 All right. What Dr. Parry  
02 tells Monsanto in this report is in the in  
03 vivo studies -- now, what are in vivo studies  
04 again?  
05 A. These were in whole animals, as  
06 we talked about, being injected into their  
07 abdomens.  
08 Q. He says that "the positive  
09 study had a clear demonstration of bone  
10 marrow toxicity and involved multiple dosing,  
11 two doses, with the test agents in contrast  
12 to a single-dosing agent used by Rank."  
13 Do you see that?

44. PAGE 150:14 TO 153:08 (RUNNING 00:03:04.760)

14 A. But you pointed out that the  
15 positive results were in contrast with the  
16 negative results of Rank. So this is one of  
17 the issues with gene toxicity. You can have  
18 some that are positive and some are negative,  
19 and that's why we do a weight of evidence  
20 with them.  
21 So here he's talking about one  
22 that's negative and one's positive and what  
23 might be involved in those.  
24 Q. He goes on to say, "The data,  
25 Bolognesi from '97, indicates that glyphosate  
00151:01 is a probable in vivo genotoxin," right?  
02 A. Yes, he does.  
03 Q. And in the next paragraph he  
04 says, "Both glyphosate and Roundup induce  
05 significant increased DNA strand breaks in  
06 mouse liver and kidney," right?  
07 A. Yes, but up above, again, he  
08 also talks about the Bolognesi doesn't meet  
09 guideline standards. And so, again, this is  
10 an intraperitoneal injection. It's only a  
11 few animals. And so he's giving us the  
12 findings that he sees here.

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13 Q. Okay. Let's go to the next  
14 page, 2103. He summarizes in that first full  
15 paragraph, "The overall data provided by the  
16 four publications provide evidence to support  
17 a model that glyphosate is capable of  
18 producing genotoxicity both in vivo and in  
19 vitro by a mechanism based upon the  
20 production of oxidative damage," right?  
21 A. He says that, but, again, I  
22 want to remind you that there were some that  
23 were negative. And then again, oxidative  
24 damage can be due to cytotoxicity.  
25 In many of the studies where we  
00152:01 see these kinds of responses, it's secondary  
02 to cytotoxicity, not a primary oxidative  
03 response.

0264-012 -



04 Q. He recommended on page 2104,  
05 paragraph B at the top there, ma'am, "an  
06 assessment of the individual components of  
07 Roundup mixture to determine whether there is  
08 any components which act synergistically to  
09 increase the potential genotoxicity of  
10 glyphosate," right?  
11 A. He did, and it was a basis for  
12 a study that we actually did.

-KE0264-012 - Clear Attached Exhibit 0264-012



13 Q. What study?  
14 A. It was with Heydens, et al.  
15 Q. Can you spell that, please?  
16 A. It was Bill Heydens,  
17 H-e-y-d-e-n-s.  
18 Q. Oh, your boss?  
19 A. Uh-huh.  
20 Q. And he did the study?  
21 A. No, there was a group of us.  
22 We had some -- because we are not in a  
23 laboratory. We worked with some laboratory  
24 people to look at this exact question  
25 because, again, we did not believe that these  
00153:01 findings were related to a genotoxic effect  
02 but secondary to some cytotoxicity.  
03 So we did a study doing an oral  
04 route of exposure, which would be more  
05 relevant, and we didn't reproduce the same  
06 findings. We did an intraperitoneal  
07 injection and got the same findings but not  
08 an oral one.

45. PAGE 153:13 TO 155:15 (RUNNING 00:01:51.467)

13 Q. All right. Excuse me. What is  
14 the date of that study, and was it published?  
15 A. It was a series of studies, so  
16 I don't remember exactly when they were, and  
17 I think it was in 2008 or '9.  
18 Q. Were they published?  
19 A. It was published in one  
20 publication.  
21 Q. Which publication?

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22 A. I don't remember what the  
23 journal was.  
24 Q. Were they ever submitted to  
25 Dr. Parry?  
00154:01 A. I would believe based on what I  
02 see here that we would have had a  
03 conversation with Dr. Parry because it  
04 appears that that was the foundation for us  
05 doing that study.  
06 I don't know what the  
07 conversations were with Mark and Dr. Parry,  
08 but it was published, so it's out there in  
09 the open literature.  
10 Q. So he made these  
11 recommendations in 1999, and when did you  
12 start these studies?  
13 A. Good question. I don't know.  
14 It took -- we didn't -- I don't remember when  
15 we started them, but we did do them.  
16 Q. Were they ever repeated by  
17 independent scientists?  
18 A. Anyone would be welcome to  
19 repeat them if they'd like to.  
20 Q. You did not retain any  
21 independent scientists to go repeat these.  
22 These were done in-house at Monsanto?  
23 A. We have very qualified  
24 scientists that can conduct these studies,  
00155:01 and we did those studies. And then we put it  
02 out there in the peer-reviewed literature for  
03 people to look and evaluate for their own.  
04 Q. Did you study to reproduce the  
05 same results from a peritoneal exposure and  
06 not oral?  
07 A. Yes, we did. Because we wanted  
08 to say is it -- when we see studies like  
09 this, the big thing for us is to ask is it  
10 real, and then is it reproducible, and then  
11 what does it mean.  
12 So we did the study again, and  
13 it was real. We saw the effects.  
14 And then our question was, what  
15 happens when you do a more relevant route of  
exposure, and then what does that look like.


46. PAGE 155:16 TO 155:18 (RUNNING 00:00:10.928)

16 Q. Let's look some more at what  
17 Dr. Parry found in -- when requested to look  
18 at these issues for Monsanto.

47. PAGE 155:19 TO 155:22 (RUNNING 00:00:06.726)

19 Dr. Parry told you he would  
20 conduct these studies, right?  
21 A. I don't remember that  
22 conversation.

48. PAGE 156:02 TO 156:03 (RUNNING 00:00:09.759)

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02 Q. Let's look at it. We'll mark  
03 it as Exhibit 1-24, a copy of 1:24.





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49. PAGE 156:13 TO 157:06 (RUNNING 00:00:49.157)

13 Q. All right, ma'am. This is  
14 Exhibit 1:24, and it's a document generated  
15 by Monsanto eight days after receiving  
16 Dr. Parry's first report.  
17 See it says December 10, 1999.  
18 Oh, a long time afterwards.  
19 I'm sorry. Excuse me.  
20 So exhibit -- I want to do this  
21 accurate.  
22 Exhibit 1:23 is February --  
23 that's right, they do it different in  
24 Europe -- February 10, 1999. Okay.  
25 So then quite a few months  
00157:01 later, December 1999, a group meeting occurs  
02 concerning these issues, and you are part of  
03 that meeting.  
04 Do you see "Donna Farmer"  
05 there?  
06 A. It wasn't --

50. PAGE 157:10 TO 158:06 (RUNNING 00:00:49.295)

10 THE WITNESS: This wasn't the  
11 only reason why that meeting was held.  
12 This was a subpart of a bigger  
13 meeting.  
14 QUESTIONS BY MR. MILLER:  
15 Q. Or nor did I suggest it was.  
16 But it was part of the meeting,  
17 fairly?  
18 A. It was one of the subject  
19 matters, yes.  
20 Q. Okay. And what we said there

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21 was -- let's go to page 2 is really what I  
22 want to ask you about.  
23 On page 2 of these meeting  
24 notes -- I'm looking at paragraph number 4 of  
25 these notes up top and it says, "Some  
00158:01 indication of DNA damage observed in  
02 different test systems are due to cytotoxicity  
03 properties of the formulation tested than to  
04 actual mutagenicity," right?  
05 A. Correct. That's what I've been  
06 saying.

51. PAGE 158:16 TO 159:14 (RUNNING 00:00:50.928)

16 Q. I want to ask you about the  
17 exact words in the document in a minute.  
18 Do you recall refusing to let  
19 Dr. Parry do the tests that you and Bill  
20 Heydens did?  
21 A. Well, these are different  
22 studies than -- he's talking about doing in  
23 vitro studies, and we did in vivo studies.  
24 Q. You never gave Dr. Parry any  
25 material to do testing, right?  
00159:01 A. I don't remember.  
02 Q. Let's look.  
03 "In order to further develop  
04 the relationship with Dr. Parry, it was  
05 recommended that the surfactant samples be  
06 provided to him for testing. However, before

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07 sending Dr. Parry any samples, it was  
08 recommended that they undergo in-house  
09 testing first in similar in vitro screen,"  
10 right?  
11 A. Yes.  
12 Q. So you never sent Dr. Parry any  
13 samples, and he never was able to do any  
14 testing; that's true, isn't it?

**52. PAGE 159:18 TO 160:07 (RUNNING 00:00:24.580)**

18 THE WITNESS: That doesn't say  
19 that. It just said that we wanted to  
20 do them in-house and that you can see  
21 the request was made by toxicology to  
22 include either me -- and there's  
23 nothing in here that says we didn't  
24 send anything to Dr. Parry.  
25

00160:01 QUESTIONS BY MR. MILLER:

02 Q. I'm asking you a general  
03 question, Dr. Farmer. Of all your extensive  
04 experience in glyphosate and Roundup, are you  
05 sitting here and going to tell us that you  
06 sent Dr. Parry samples to do any testing or  
07 not?

**53. PAGE 160:11 TO 160:19 (RUNNING 00:00:15.869)**

11 THE WITNESS: I don't remember.  
12 But this document doesn't say that we  
13 weren't going to. I don't know.  
14 QUESTIONS BY MR. MILLER:  
15 Q. What the document says, "Before  
16 sending Dr. Parry any samples, it was  
17 recommended that they undergo in-house  
18 testing first in a similar in vitro screen,"  
19 right?

**54. PAGE 160:23 TO 160:24 (RUNNING 00:00:01.868)**

23 Q. Is that what the document says,  
24 ma'am?

**55. PAGE 161:03 TO 161:07 (RUNNING 00:00:08.341)**

03 Q. You can answer. He's not  
04 instructing you not to answer.  
05 A. That's what it said, but,

 -KE0265-002 - Clear Attached Exhibit 0265-002



06 again, he never says that we didn't send him  
07 anything.

**56. PAGE 161:08 TO 161:11 (RUNNING 00:00:08.858)**

08 Q. Who is William Graham?  
09 A. He is a -- with our  
10 registration affairs group. He's retired.  
11 He was in Europe.

**57. PAGE 161:12 TO 161:23 (RUNNING 00:00:28.713)**


12 Q. After his first report then,  
13 the goal was to pay him 600 pounds, "him"  
14 being Dr. Parry, and persuade him that  
15 glyphosate was not mutagenic, right?  
16 A. I don't remember that  
17 conversation. We believe it wasn't

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18 genotoxic, and there were a number of other  
19 large studies that met regulatory  
20 requirements that were out there, and those  
21 studies were not standard. So I can believe  
22 that we wanted to -- we didn't believe that  
23 it was genotoxic or mutagenic.

**58. PAGE 162:02 TO 162:05 (RUNNING 00:00:19.591)**

 0266 -



02 Q. All right. Let's look at  
03 Exhibit 1:25, a series of e-mails to you and  
04 others about this issue. It's a short,  
05 one-pager.

**59. PAGE 162:11 TO 162:14 (RUNNING 00:00:10.917)**

11 Q. All right. Ma'am, you see you  
12 were sent this e-mail in May of 1999 after  
13 his first report, right?  
14 A. Yes.

**60. PAGE 162:18 TO 162:25 (RUNNING 00:00:20.381)**

18 What William Graham is asking  
19 is how much will it be. The results are now  
20 needed to persuade him. Had nothing to do  
21 with glyphosate is mutagenic.  
22 That was the goal right after  
23 his first report, was to send him more  
24 materials and try to convince Dr. Parry that  
25 your product is not genotoxic, right?

**61. PAGE 163:02 TO 163:23 (RUNNING 00:00:41.446)**

02 Q. Mutagenic, sorry.  
03 A. The studies that Dr. Parry  
04 looked at, as we talked about, had some  
05 unusual findings associated with them,  
06 unusual routes of exposure, they didn't meet  
07 guideline standards, and we didn't believe  
08 that they represented glyphosate as  
09 mutagenic.  
10 And you can see the next  
11 sentence says the ECCO Mammalian tox review  
12 came out with this conclusion. And over all  
13 these years, all the regulatory agencies have  
14 looked at those same studies that Dr. Parry  
15 looked at, and they've concluded that they  
16 don't support glyphosate being genotoxic or  
17 mutagenic.  
18 And so we -- again, we were  
19 trying to work with Dr. Parry because we  
20 didn't believe it was, and we were trying to  
21 figure out what information can we give him,  
22 because others agreed with us that it's not  
23 mutagenic or genotoxic.

**62. PAGE 164:03 TO 164:13 (RUNNING 00:00:38.218)**

03 Q. Let's look at the e-mail from  
04 author Mark Martens right above that.  
05 "Bill, Parry's fee is agreed to  
06 be 600 pounds a day. He'll need ten days to  
07 digest all the paperwork and make report and  
08 spend one day with Larry Kier. That makes it  
09 6,000 pounds," right?

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 -KE0266 - Clear Attached Exhibit 0266



10 A. That's what's written there.  
11 Q. Okay. You agreed to not send  
12 Dr. Parry any samples, true?  
13 A. I don't remember.

63. PAGE 164:17 TO 164:22 (RUNNING 00:00:22.161)

17 Q. Let's refresh your

 0267 -



18 recollection. Exhibit 1-26, an e-mail  
19 prepared by you in April of 2000 on this  
20 issue. Here we go.  
21 Here, ma'am, is a copy for you  
22 and a copy for counsel.

64. PAGE 164:23 TO 165:06 (RUNNING 00:00:31.240)

23 So, ma'am, here we are, still  
24 in year 2000. And Donna Farmer, you say -- I  
25 want to read this exactly -- "Should I go  
00165:01 ahead and ask Todd to repeat the studies? Or  
02 should we use a different assay? I agree we  
03 do not send samples to Dr. Parry until we get  
04 this sorted out."  
05 Right? Your instructions were  
06 not to send Dr. Parry any samples?

65. PAGE 165:09 TO 166:06 (RUNNING 00:00:36.807)

09 THE WITNESS: This is until we  
10 get it sorted out. So again, if you  
11 go to the first e-mails, we're doing  
12 not a normal micronucleus study, we're  
13 doing a micronu -- it's called  
14 micro-micronucleus, so it's a  
15 screening study we were looking at,  
16 and it looked like we had some  
17 conflicting results.  
18 And so that's what I was saying  
19 is should we ask Todd to repeat the  
20 studies or should we do a different  
21 assay. And I'm agreeing to someone  
22 that we don't send the samples to  
23 Dr. Parry until we get this sorted  
24 out.  
25 Again, it doesn't say that we  
00166:01 didn't send them to him. We were just  
02 trying to assess what this screening  
03 study meant.  
04 QUESTIONS BY MR. MILLER:  
05 Q. The fact is you never did send  
06 Dr. Parry any samples, did you?

66. PAGE 166:10 TO 166:13 (RUNNING 00:00:11.040)

10 Q. Does this document refresh your  
11 recollection in any way that you ever sent  
12 your outside expert, Dr. Parry, any samples?  
13 A. I do not remember.

67. PAGE 166:14 TO 167:20 (RUNNING 00:01:02.704)

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 -KE0267 - Clear Attached Exhibit 0267



14 Q. Dr. Parry's first name was Jim,  
15 right?  
16 A. I believe it was James or Jim,  
17 yes.  
18 Q. James.  
19 He passed away; you're aware of  
20 that?  
21 A. I don't know when, but I was  
22 aware of that.  
23 Q. I think it was 2010.  
24 Does that sound about right?  
25 A. I don't remember.  
00167:01 Q. Okay. All right. Well, let's  
02 ask this: Jim Parry, Dr. Parry, told  
03 Monsanto in 1999 that this issue of oxidative  
04 stress should be addressed.  
05 Do you remember that?  
06 A. We talked about it in that one  
07 document, and that's why we did the  
08 subsequent studies with Dr. Heydens, the  
09 publication we talked about.  
10 Q. Did you do stress marker  
11 responses, stress response marker tests?  
12 A. Similar to the ones that were  
13 in those publications.  
14 Q. Did you do clinical  
15 biochemistry parameters?  
16 A. I believe we did.  
17 Q. And it's in a peer-reviewed  
18 published journal?  
19 A. And there's histopathology as  
20 well.

68. PAGE 167:21 TO 167:23 (RUNNING 00:00:08.934)


21 Q. The truth was, ma'am, your boss  
22 told you that you weren't going to do the  
23 studies that Dr. Parry suggested, right?

69. PAGE 167:24 TO 168:01 (RUNNING 00:00:04.776)

24 A. We did studies, and we did the  
25 repeat of the Bolognesi. That's what I  
00168:01 remember doing.

70. PAGE 168:05 TO 168:08 (RUNNING 00:00:08.626)

05 Q. Let's look at an e-mail from

 0268 -



06 your boss, William Heydens, to you on this  
07 issue, and we're going to mark it as  
08 Exhibit 1:27. All right?

71. PAGE 168:09 TO 170:07 (RUNNING 00:01:42.670)

09 All right. Ma'am, this is  
10 William Heydens sends this e-mail in  
11 September of 1999, right?  
12 A. Yes.  
13 Q. Sends it to you and others,  
14 right?  
15 You see your name there, "Donna  
16 Farmer"?

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17 A. Yes.  
18 Q. It's regarding the Parry  
19 report, isn't it?  
20 A. Yes.  
21 Q. Okay. And he says, "Mark, et  
22 al." --  
23 Mark being Mark Martens, right?  
24 A. Yes.  
25 Q. -- "I've read the report and  
00169:01 agree with the comments. There are various  
02 things that can be done to improve the  
03 report."  
04 So Monsanto wants to change his  
05 report and improve it, right?  
06 A. There are comments that -- they  
07 provide to his report, and we were going to  
08 provide comments back.  
09 Q. "Let's step back and look at  
10 what we're really trying to achieve here. We  
11 want to find/develop someone who is  
12 comfortable with a genotoxic profile of  
13 glyphosate/Roundup and who can be influential  
14 with regulators and scientific outreach  
15 operations when genotox issues arise."  
16 That was the goal, wasn't it?  
17 A. We look for experts to help us  
18 in this area to answer questions and give us  
19 feedback on what we can do, so, yes, we do  
20 look for experts to help us in this area.  
21 Q. Your boss says, "My read is  
22 that Parry is not currently such a person,  
23 and it would take quite some time and dollar  
24 sign, dollar sign, dollar sign studies to get  
25 him there. We simply aren't going to do the  
00170:01 studies Parry suggests."  
02 This was marching orders from  
03 your boss, wasn't it?  
04 A. Well, that may be what he said  
05 then, but we did do the studies. So again, I  
06 would have you look at that Heydens  
07 publication.

72. PAGE 170:08 TO 170:21 (RUNNING 00:00:30.103)

08 Q. What Mark Martens said about  
09 the Parry report, that it simply wasn't

 -KE0268 - Clear Attached Exhibit 0268




10 suitable for defense of the product.  
11 You're aware of that, right?  
12 A. As we just talked about, we  
13 didn't agree with Dr. Parry's interpretation  
14 of all the data. We thought it was secondary  
15 to cytotoxicity and irrelevant routes of  
16 exposure, and we obviously had a disagreement  
17 with him.  
18 And, sure, if we have someone  
19 who doesn't agree with the way we interpret  
20 the data, we're not going to obviously have  
21 them out there being spokespeople for us.

73. PAGE 177:05 TO 177:18 (RUNNING 00:00:25.900)

05 He's a -- that's Larry Kier,

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 0270 -



06 isn't it?  
07 A. Yes, it is.  
08 Q. Consultant that Monsanto has  
09 paid more than a few times to work on these  
10 issues, right?  
11 A. No. Dr. Kier was a gene tox  
12 expert who was retired from Monsanto, and  
13 based on his expertise, yes, we have kept him  
14 as a consultant.  
15 Q. Right.  
16 But now this clearly refreshes  
17 your recollection that you felt Dr. Parry had  
18 put you in a genotox hole?

74. PAGE 177:22 TO 178:20 (RUNNING 00:00:59.529)


22 THE WITNESS: I said that, but  
23 I think what we talked about, this is  
24 from like 1999, and we did a lot of  
25 work subsequent to this with -- to  
00178:01 look at Dr. Parry's comments.  
02 We did work with him, and so I  
03 think what we're getting at here is  
04 that he -- we just had a difference of  
05 opinion with him. And we needed to  
06 find some different data, and we know  
07 that it wasn't genotoxic, and put the  
08 information out there. We just  
09 disagreed with him.  
10 QUESTIONS BY MR. MILLER:

 -KE0270 - Clear Attached Exhibit 0270



11 Q. What does clastogen mean?  
12 A. Again, it refers to structural  
13 damage of genetic material.  
14 Q. Okay. And clastogenic means  
15 something that can cause this process of  
16 clastogen, right?  
17 A. Structural damage, yes.  
18 Q. Okay. So Dr. Parry did a  
19 second report for Monsanto on Roundup, right?  
20 A. I don't remember.

75. PAGE 178:24 TO 179:04 (RUNNING 00:00:20.311)

 0272 -



24 Q. Let's look at it. Exhibit 1:30  
25 is a report prepared by Dr. Parry entitled  
00179:01 "The evaluation of the potential genotoxicity  
02 of glyphosate mixtures and component  
03 surfactants."  
04 Here's a copy for you, ma'am,

76. PAGE 179:10 TO 179:11 (RUNNING 00:00:03.192)

10 Q. You can look at the document,  
11 and then we'll have some more questions.

77. PAGE 179:17 TO 179:20 (RUNNING 00:00:05.866)

17 Q. Let me know when you're ready,  
18 ma'am.  
19 A. Let me take a little bit. This

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20 is a pretty big report.

**78. PAGE 179:21 TO 180:03 (RUNNING 00:00:19.411)**

21 Q. All right. This Exhibit 1-30  
22 was produced to us by Monsanto, and it's a  
23 second report entitled "Evaluation of  
24 potential genotoxicity of glyphosate,  
25 glyphosate mixtures and component  
00180:01 surfactants, James M. Parry."  
02 Same Dr. Parry we've been  
03 speaking of?

**79. PAGE 180:10 TO 180:11 (RUNNING 00:00:01.874)**


10 A. Sorry, could you repeat the  
11 question?

**80. PAGE 180:18 TO 181:02 (RUNNING 00:00:22.199)**

18 Q. Is this the same James M. Parry  
19 we spoke about with the last report, ma'am?  
20 A. Yes.  
21 Q. And so in this report Dr. Parry  
22 prepared a table of -- 14 tables of things  
23 that he reviewed.  
24 Is that fairly what this is, or  
25 what would you explain this on the first page  
00181:01 to be Table 1 through 14?  
02 What do they represent, ma'am?

**81. PAGE 181:05 TO 181:09 (RUNNING 00:00:13.682)**

05 THE WITNESS: It is tables of  
06 what he reviewed.  
07 QUESTIONS BY MR. MILLER:

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08 Q. Okay. Now, let's look then at  
09 page 4237, Dr. Parry's report.


**82. PAGE 181:10 TO 181:15 (RUNNING 00:00:18.328)**

10 And Dr. Parry says, and from  
11 his evaluation, "These studies provide some  
12 evidence that glyphosate may be capable of  
13 inducing oxidative damage under both in vitro  
14 and in vivo conditions."  
15 Did I read that correctly?

**83. PAGE 181:18 TO 181:21 (RUNNING 00:00:07.870)**

18 THE WITNESS: Just given that,  
19 I'm not really sure what studies  
20 he's -- I want to go back and look and  
21 see what he's talking about.

**84. PAGE 181:22 TO 183:21 (RUNNING 00:01:50.161)**

 0272-004 -

22 I believe that he's referring  
23 to these miscellaneous end points that  
24 are in studies that are, again,  
25 through intraperitoneal injection, not  
00182:01 according to standard studies.  
02 And then you can see he talks  
03 about this other one, that there was





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04 no -- there was negative results, but  
05 he's talking again about these other  
06 studies from the Pelosi and Bolognesi  
07 and Lioi that are not standard studies  
08 required by regulatory agencies.

09 And again, we talked about how  
10 they can be secondary to in vitro  
11 toxicity as well as in vivo toxicity  
12 that could cause the oxidative damage,  
13 but that's a result of the exposure  
14 scenario.

15 QUESTIONS BY MR. MILLER:

16 Q. These studies that he reviewed,  
17 ma'am, were studies sent to him by Monsanto,  
18 true?

19 A. They were studies in the open  
20 literature that we asked him to review.


21 Q. Yes, ma'am.

22 A. And again, as we talked about,  
23 you have to look at how these studies are  
24 conducted. We talked about the  
25 intraperitoneal injections, we talked about  
00183:01 that they don't follow standard guidelines,  
02 and again, that we didn't agree with his  
03 evaluation of the studies.

04 Q. He was the expert you selected  
05 to review these papers, "you" being Monsanto,  
06 true?

07 A. Well, it does happen that we  
08 have people that we don't agree with.  
09 Experts have different opinions. That's why  
10 there are a lot of different experts out  
11 there.

12 Q. Sorry to interrupt you.

 0272-008 -



13 Let's look at page 4240,  
14 another conclusion of expert Parry after  
15 review of these studies.

16 "Evaluation. These studies  
17 provide some evidence that Roundup mixture  
18 produces DNA lesions in vivo, probably due to  
19 the oxidative damage."

20 That was Dr. Parry's  
21 conclusion, right?

85. PAGE 183:24 TO 184:22 (RUNNING 00:00:55.614)

24 THE WITNESS: Again, they're  
25 referring back to the same studies  
00184:01 we've been talking about that are  
02 intraperitoneal injections, which is  
03 not a normal route of exposure. And  
04 the COMET assay he's talking about is  
05 in tadpoles, and those were at levels  
06 that were toxic to the tadpoles.

07 So the results that we're  
08 seeing here, again, are secondary.  
09 Even though you see oxidative stress,  
10 it's secondary to the toxicity that's  
11 being observed in these studies.

12 QUESTIONS BY MR. MILLER:

13 Q. Let's look at his conclusion on

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0272-010 -



14 page 4242, Overall Conclusions.  
15 Number 2 is the one that I  
16 would like to ask you about. "There is  
17 published in vitro evidence that glyphosate  
18 is clastogenic and capable of inducing sister  
19 chromatid exchange in both human and bovine  
20 lymphocytes."  
21 And he cites a public study  
22 that proves that, doesn't he?

86. PAGE 185:01 TO 185:20 (RUNNING 00:00:49.022)

00185:01 THE WITNESS: I disagree with  
02 you that it proves that. The  
03 conditions of that study, those were  
04 the findings, but that is not the  
05 basic conclusion of the outcome of  
06 glyphosate.  
07 This was another study that  
08 wasn't conducted according to  
09 guidelines and that had some problems  
10 with the conduct of the study, and  
11 there are other studies that conflict  
12 these results.  
13 QUESTIONS BY MR. MILLER:

0272-012 -



14 Q. He goes on on page 4244 under  
15 the specific evaluation of the genotoxicity  
16 of glyphosate to tell Monsanto that "on the  
17 basis of the study of Lioi, I conclude that  
18 glyphosate is a potential clastogenic in  
19 vitro."  
20 His conclusion, right?

87. PAGE 185:24 TO 186:21 (RUNNING 00:00:44.138)

24 THE WITNESS: That's again what  
25 he says. But again, remember, this is  
00186:01 in vitro, this is a petri dish  
02 experiment, and again, that those  
03 cells are sustaining toxicity,  
04 meaning -- when we talk about  
05 cytotoxicity, it means that the cells  
06 are damaged and that the end that  
07 you're seeing, this oxidative damage,  
08 is then the result of the cells  
09 sustaining cytotoxicity and not a  
10 direct genotoxic effect.  
11 And you can see here it says  
12 even -- there's another assay that  
13 indicates it's not reproduced in germ  
14 cells.  
15 QUESTIONS BY MR. MILLER:  
16 Q. He says, "Under specific  
17 evaluations of genotoxicity of glyphosate  
18 mixture that the studies of Bolognesi  
19 suggests that glyphosate mixtures may be  
20 capable of inducing oxidative damage in  
21 vivo."

88. PAGE 186:25 TO 187:01 (RUNNING 00:00:01.094)


25 Q. That was his conclusion, wasn't

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00187:01 it?

89. PAGE 187:03 TO 187:20 (RUNNING 00:00:56.130)

03 THE WITNESS: Again, that was  
04 the same study where they injected the  
05 formulated product directly into the  
06 abdomens of the animals. There was  
07 direct damage to the organs and to the  
08 animal, and the results are secondary  
09 to cytotoxicity.  
10 QUESTIONS BY MR. MILLER:  
11 Q. He tells us on -- he tells

 0272-034 -



12 Monsanto in this report at 4266 -- I'm just  
13 about done with this report.  
14 But at 4266, Dr. Parry tells us  
15 that there is -- this is in F. "In view of  
16 the increasing appreciation of the value of  
17 COMET assay as a marker of tissue-specific  
18 damage, I recommend the consideration of its  
19 use in any in vivo studies performed."  
20 Do you see that?

90. PAGE 187:23 TO 189:05 (RUNNING 00:00:57.809)

23 THE WITNESS: I see that's what  
24 he says.  
25  
00188:01 QUESTIONS BY MR. MILLER:  
02 Q. And Monsanto never performed a  
03 COMET assay on any of its in vivo studies?  
04 A. We have a difference of opinion  
05 of the value of the COMET study. There are  
06 other studies that are -- the COMET study,  
07 you can actually get positive effects if you  
08 take blood from people who have been on a  
09 treadmill for 30 minutes. So, again, you  
10 have to look at the study and what it  
11 provides.  
12 And this, again, comes back to  
13 talking about the oxidative damage with  
14 Bolognesi. And again, remember, he is  
15 talking about doing an assay where -- in  
16 talking about looking at the liver and the  
17 kidneys where we actually went and did the  
18 studies in the whole animals that we shared  
19 with you about the Heydens report.  
20 Q. The answer is Monsanto never  
21 did COMET assays, true?  
22 A. No, we would not do COMET  
23 assays. We do not see it as a really  
24 valuable assay.  
25 Q. And this expert who you asked  
00189:01 to review these studies told you, "The COMET  
02 assay would provide the ability to determine  
03 whether damage is produced in a wide range of  
04 tissues following glyphosate exposure."  
05 That's what he said, right?

91. PAGE 189:08 TO 189:14 (RUNNING 00:00:15.045)


08 THE WITNESS: This is an in  
09 vitro assay, and instead we always  
10 have higher value when you do an in  
11 vivo study. So we addressed the same

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12 comments in an in vivo study that  
13 would be of more value than the COMET  
14 assay that, no, we would not conduct.

92. PAGE 189:16 TO 189:17 (RUNNING 00:00:05.851)

16 Q. Dr. Parry goes on to conclude

 0272-035 -

17 his report on page 4267, "If the genotoxic

93. PAGE 189:18 TO 189:24 (RUNNING 00:00:15.878)

18 activity of glyphosate and its formulations  
19 is confirmed, it would be advisable to  
20 determine whether there are exposed  
21 individuals or groups within the human  
22 population."  
23 Do you remember receiving that  
24 advice from Dr. Parry?

94. PAGE 190:02 TO 190:09 (RUNNING 00:00:15.658)

02 THE WITNESS: I see it here,  
03 but, again, the geno -- there is no  
04 genotoxic activity of glyphosate in  
05 its formulations. We would disagree  
06 with that.  
07 QUESTIONS BY MR. MILLER:

 -KE0272-035 - Clear Attached Exhibit 0272-035

08 Q. All right. Let's look at --  
09 did you publish Dr. Parry's report?

95. PAGE 190:14 TO 190:17 (RUNNING 00:00:05.076)

14 A. No.  
15 Q. Did you submit Dr. Parry's  
16 report to the Environmental Protection  
17 Agency?

96. PAGE 190:20 TO 191:04 (RUNNING 00:00:10.955)

20 THE WITNESS: The Environmental  
21 Protection Agency is familiar with all  
22 of those studies.

23 QUESTIONS BY MR. MILLER:

24 Q. My question was not whether  
25 they're familiar with the studies.

00191:01 Dr. Parry's report, did you  
02 submit it to the Environmental Protection  
03 Agency?

04 A. I don't know if it was or not.

97. PAGE 253:07 TO 253:17 (RUNNING 00:00:27.806)

07 Q. Ma'am, your company has never  
08 measured the amount of Roundup found in fecal  
09 matter, have you?

10 A. Not to my knowledge, no, we  
11 have not.

12 Q. All right. Let's go back to  
13 epidemiology.

14 When another study comes out in  
15 2008 showing that herbicides increase the  
16 risk of non-Hodgkin's lymphoma, it was your  
17 job to combat this, right?




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**98. PAGE 253:22 TO 254:04 (RUNNING 00:00:15.024)**

22 A. It was -- as we see it, when we  
23 hear information about our product, we want  
24 to make sure that we get the information out  
25 there for everyone to make a decision. And  
00254:01 there are comments and statements we don't  
02 agree with, and we want to make sure we get  
03 out our technical information so people can  
04 make their own decision.

**99. PAGE 254:18 TO 254:22 (RUNNING 00:00:17.432)**

18 Q. Let's go to Exhibit 1-42, an

 0513 -

19 e-mail from Donna Farmer produced in this  
20 discovery. And here's a copy for you, ma'am,  
21 and a copy for you, Counsel.  
22 Let me know when you're ready.

**100. PAGE 254:23 TO 256:01 (RUNNING 00:00:56.745)**

23 All right, ma'am, let's go over  
24 this. Now, Exhibit 1-42 ends with an e-mail  
25 from you, Donna Farmer, right, ma'am?  
00255:01 A. Yes.  
02 Q. It starts out with an e-mail  
03 from a gentleman named Dean Nasser, right?  
04 A. Yes.  
05 Q. Do you know who Mr. Nasser is?  
06 A. He -- I don't know if he was  
07 with Healthy Plants then or Western  
08 Association. He was with an industry  
09 association.  
10 Q. Okay. And he sends it to you  
11 and others, right?  
12 A. He forwards us a press release  
13 from Beyond Pesticides.  
14 Q. Yes, ma'am.  
15 And this is in October of 2008,  
16 right?  
17 A. Yes.  
18 Q. Okay. And in 2008, what he's  
19 forwarding you is a -- information about a  
20 study that shows herbicides.  
21 Now, let's be clear, Roundup is  
22 a herbicide, right?  
23 A. Yes.  
24 Q. Okay. Herbicides increase the  
25 risk of non-Hodgkin's lymphoma. All right?  
00256:01 That's what he's sending you.

**101. PAGE 256:05 TO 257:21 (RUNNING 00:01:30.708)**

05 Q. Do you see that, ma'am?  
06 A. Yes, that's what it says.  
07 Q. Okay. The case-control study  
08 finds that a 2.2 odds ratio -- and I know  
09 you're not an epidemiologist, but you know  
10 what a 2.2 odds ratio is, right, ma'am?  
11 A. Yes.  
12 Q. -- for exposure, which means  
13 you're two times the chance of contracting  
14 the illness to glyphosate, right?  
15 A. Well, I think there's other  
16 parts of this that we have to talk about. We

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17 don't know whether it was statistically  
18 significant -- I don't believe those are --  
19 and so that was the point of this.  
20 When you send a press release  
21 out like this, it doesn't give you all the  
22 details that you can look at, how you respond  
23 to the study. And that's what I was asking  
24 him is, you know, how do we combat this when  
25 this is just taken out of context, not all  
00257:01 the information's there, is available.  
02 So in the 2.2 -- 2.02 odds  
03 ratio, that's -- it's very minor, and I don't  
04 know if it was statistically significant. I  
05 don't believe it was. And that's an  
06 important consideration.  
07 So again, just because you have  
08 these numbers and these statements, it  
09 doesn't really mean that there's any real  
10 concern for this exposure. There's a lot  
11 more -- that's why we talk about combating  
12 this. We need to get more information out  
13 there to talk about the toxicology, talk  
14 about the exposure, and then put this  
15 information in light of how many -- they  
16 don't even tell you how many people were in  
17 here.  
18 So there's a lot of different  
19 things about this that we need to know rather  
20 than just take this as a press release from  
21 Beyond Pesticides, an antipesticide group.

**102. PAGE 257:22 TO 258:16 (RUNNING 00:00:44.525)**

22 Q. Donna Farmer, did you just tell  
23 us that a doubling of the risk of cancer is  
24 insignificant?  
25 A. What I'm telling you is, is  
00258:01 that this is an epidemiology study, and it's  
02 not giving me any information whether  
03 statistically significant. It's not telling  
04 me how -- there's a bias in this study. We  
05 don't know whether it's been corrected for  
06 using other pesticides.  
07 So looking at this at face  
08 value, while it says that that is the odds  
09 ratio, I don't really have any ability to  
10 tell you whether that is meaningful or not.  
11 And again, when I look at the  
12 weight of evidence for glyphosate, I would  
13 say that, again, this is just another  
14 epidemiology study that's not showing  
15 causation and that we want to look at the  
16 biological plausibility and the exposure.

**103. PAGE 259:04 TO 259:05 (RUNNING 00:00:02.699)**

04 Q. All right. You raise an  
05 important point, Donna Farmer.

**104. PAGE 259:12 TO 259:20 (RUNNING 00:00:21.180)**

12 Dr. Farmer, what does  
13 statistical significance mean?  
14 A. Well, it's telling you that  
15 there is -- when you look at the relationship  
16 that it's more than just chance.  
17 Q. Right.  
18 All right. So you're aware

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19 this study in 2008 was put in a peer-reviewed  
20 journal?

**105. PAGE 259:23 TO 260:02 (RUNNING 00:00:05.445)**

23 THE WITNESS: Yeah, I don't  
24 remember which study this is. It  
25 doesn't tell the authors, and it  
00260:01 doesn't tell anything about the  
02 journal.

**106. PAGE 260:08 TO 260:14 (RUNNING 00:00:12.479)**

08 Q. Let's look at what else is in  
09 this e-mail to you.  
10 It says, "The incidence of  
11 non-Hodgkin's lymphoma has been increasing  
12 over the past several decades."  
13 You were aware of that, weren't  
14 you?

**107. PAGE 260:17 TO 261:08 (RUNNING 00:00:28.190)**

17 THE WITNESS: Again, this is a  
18 press release from Beyond Pesticides,  
19 so, again, it is a press release from  
20 them.  
21 QUESTIONS BY MR. MILLER:  
22 Q. My question, Dr. Farmer, is:  
23 Are you aware, when you received this e-mail  
24 or even as we sit here today, that, in fact,  
25 the incidence of non-Hodgkin's lymphoma has  
00261:01 been increasing over the past several  
02 decades?  
03 A. In fact, I think it's flattened  
04 out now.  
05 Q. "Now" meaning --  
06 A. I don't think it's increasing.  
07 Q. How recently, ma'am?  
08 A. I don't know.

**108. PAGE 261:09 TO 261:13 (RUNNING 00:00:09.663)**

09 Q. This e-mail sent to you in 2008

 0513-002 -

10 goes on to say, "The link between pesticides  
11 and cancer has long been a concern."  
12 You were aware of that, weren't  
13 you?

**109. PAGE 261:16 TO 262:08 (RUNNING 00:00:52.576)**

16 THE WITNESS: I think that  
17 there are always concerns about use of  
18 substances and cancer. But again,  
19 this is just a study that doesn't have  
20 a lot of information. It's one study,  
21 and it's from a press release from an  
22 antipesticide organization.  
23 QUESTIONS BY MR. MILLER:  
24 Q. It refers to another study in  
25 2002. The same researchers published a study  
00262:01 that shows an increased risk for  
02 non-Hodgkin's lymphoma from exposure to --  
03 exposure to certain pesticides: 1.75 odds  
04 ratio for herbicides; 3.11 odds ratio for  
05 fungicides; a 3.04 odds ratio for glyphosate;



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06 and a 2.62 odds ratio for MCPA.  
07 You were aware of that? You  
08 received the e-mail, right?

**110. PAGE 262:16 TO 262:24 (RUNNING 00:00:19.399)**

16 A. Again, this is just a press  
17 release that I got in the e-mail, and I'm  
18 seeing that's what it says here. But again,  
19 there are other information that we're  
20 missing from this press release.  
21 Q. You know that a 3.4 odds --  
22 3.04 odds ratio means a tripling of the risk  
23 of the condition from the product, right?  
24 You're aware of that?

**111. PAGE 263:03 TO 263:15 (RUNNING 00:00:24.021)**

03 THE WITNESS: What I understand  
04 here is that that's what they say, but  
05 again, this is not saying how it was  
06 corrected.  
07 There's a lot of other  
08 different analyses that are done that  
09 take a look at that, and there's none  
10 of that that is in here. And so it's  
11 really hard to comment on any of this  
12 without knowing the full study.  
13 QUESTIONS BY MR. MILLER:  
14 Q. Would a tripling of a risk of  
15 cancer be significant or insignificant?

**112. PAGE 263:18 TO 264:20 (RUNNING 00:01:03.851)**

18 THE WITNESS: I think, you  
19 know, cancer is a very serious  
20 disease, but again, this is an  
21 epidemiology study. There's a lot of  
22 confounders. There's a lot of bias,  
23 recall bias, selection bias, in all of  
24 these studies.  
25 And so just because you have  
00264:01 these does not mean that it is causing  
02 cancer, and you still have to look at  
03 many other aspects about this for  
04 glyphosate.  
05 And so this is -- this is just  
06 a press release, again, from an  
07 antipesticide organization.  
08 QUESTIONS BY MR. MILLER:  
09 Q. You see it goes on to say that  
10 "researchers at Northwestern University,  
11 University of Nebraska Medical Center, and  
12 the National Cancer Institute find that  
13 agriculture exposure to insecticides,  
14 herbicides and fumigants are associated with  
15 2.6 to 5.0-fold increase in the incidence of  
16 T-positive non-Hodgkin's lymphoma, paren,  
17 refers to a specific genetic alteration in a  
18 type of non-Hodgkin's lymphoma."  
19 Were you aware of that  
20 information before receiving this e-mail?

**113. PAGE 264:24 TO 265:01 (RUNNING 00:00:02.350)**

24 THE WITNESS: Yeah, that's what  
25 I was going to say, this is two  
00265:01 herbicides --




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114. PAGE 265:14 TO 265:15 (RUNNING 00:00:03.216)

14 THE WITNESS: I don't know  
15 that.

115. PAGE 265:17 TO 266:16 (RUNNING 00:00:47.874)

17 Q. I apologize, Dr. Farmer, it's  
18 late in the day, but let's go back to the

 0513 -

19 exercise that began this document.  
20 Your response to all of the  
21 information that we've been discussing was,  
22 "Here's the bottom line: How do we combat  
23 this?"

24 That's what you wanted to do,  
25 was combat this new information, right?

00266:01 A. It's exactly what I said to  
02 you. This was a press release from an  
03 antipesticide organization, and what I want  
04 to know is how do we get out the information,  
05 the full information, for people to make  
06 decisions on these products. That's what  
07 that meant.

08 Q. I didn't mean to interrupt you.  
09 You didn't say how do we get  
10 out the full information. You said, "Here's  
11 the bottom line: How do we combat this?"

12 That's what you said in 2008,  
13 right?

14 A. And what I meant by that was

 -KE0513 - Clear Attached Exhibit 0513

15 how do we get out the full information about  
16 these products.

116. PAGE 310:02 TO 310:16 (RUNNING 00:00:36.463)

02 Q. Your job was to orchestrate an  
03 outcry for when the IARC position came down,  
04 right, Dr. Farmer?


05 A. I would not say that that was  
06 my job, to orchestrate an outcry, but we were  
07 getting people together to understand that we  
08 did not agree with IARC's evaluation of our  
09 product, and we knew people would feel the  
10 same way about that.

11 Q. Your other job was to provide  
12 cover for regulatory agencies to continue to  
13 making re-registration decisions based on the  
14 science after IARC, right?

15 A. I would not suggest that that  
16 was the word that I would have used.

117. PAGE 310:20 TO 310:21 (RUNNING 00:00:08.396)

20 Q. Let's look at the document.

 0292 -

21 We're going to Exhibit 1-47.

118. PAGE 310:22 TO 310:22 (RUNNING 00:00:03.810)

22 Glyphosate: IARC. All right.

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**119. PAGE 310:23 TO 312:22 (RUNNING 00:01:54.696)**

23 Ma'am, this document was on a  
24 list of documents you reviewed prior to your  
25 deposition.  
00311:01 Do you remember reviewing this?  
02 A. I don't, but I do see that I  
03 did review it.  
04 Q. Okay. When you're ready, I'd  
05 like to ask you a few questions about it.  
06 A. I would also point out that the  
07 team -- I was reviewing the document, but  
08 this was the team that put this document  
09 together.  
10 Q. You're on the team, right?  
11 A. No, I was not. I was just  
12 asked -- you can see that I'm not on the list  
13 on the team.  
14 Q. Any information as to why this  
15 would be in your custodial file and why you  
16 would have reviewed it if you weren't  
17 involved with it?  
18 A. Well, again, not that I'm not  
19 on the team, but because I have a long  
20 history with glyphosate and know different  
21 aspects of it, they probably asked me. Which  
22 you can see I reviewed it and made comment on  
23 it.  
24 Q. Okay. Yes, ma'am.  
25 So those comment bubbles on the  
00312:01 side are yours?  
02 A. Not all of them are. Some of  
03 them are.  
04 Q. Okay. The ones darkened are?  
05 A. No, not all of them. Some are;  
06 some aren't. They have different initials of  
07 who's commented on them.  
08 Q. Oh, I see. Sure.  
09 It would be the DRF, I suppose?  
10 A. Yes.  
11 Q. Okay. All right. And going to

 0292-002 -




12 page 2 of this document, just to be clear,  
13 week of March 2 to 6, which was a week before  
14 the IARC findings, you were one of three  
15 people who was responsible to implement  
16 inoculation plan.  
17 What is an inoculation plan,  
18 Dr. Farmer?  
19 A. Again, this wasn't my document.  
20 I didn't create the headers. I was assigned  
21 a -- so you might have to ask them what they  
22 think that might mean.

**120. PAGE 313:06 TO 314:02 (RUNNING 00:01:04.753)**

06 Q. Have you heard the word  
07 "inoculation" before?  
08 A. Well, I do, but not in this  
09 context. I mean, if you want me to say what  
10 I think this meant -- because you can look at  
11 the activities. It said, "Engage with  
12 experts to plan for publications and other  
13 activities."  
14 And I think this was talking

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15 about -- is getting our information out there  
16 and to respond to the classification and to  
17 defend it globally.  
18 So the title is theirs.  
19 Q. All right. Let's go to, I'm

 0292-005 -




20 sorry, 3530.  
21 Post-IARC plan was to  
22 orchestrate an outcry with IARC decision  
23 starting on March 10, 2015, right?  
24 A. That's what it says. And  
25 again, this isn't my document. Again, I have  
00314:01 no idea who put this together. Because this


 -KE0292-005 - Clear Attached Exhibit 0292-005



02 is separate from the one that was in front.

 **Farmer2, Donna (Vol. 02) - 01/12/2017**

1 CLIP (RUNNING 01:18:09.681)

 Good morning, Dr. Farmer. ...

DF-0112-0036520

82 SEGMENTS (RUNNING 01:18:09.681)



1. PAGE 365:20 TO 367:10 (RUNNING 00:01:32.881)

20 Q. Good morning, Dr. Farmer.  
21 My name is Robert Johnston, and  
22 I represent Monsanto in this litigation.  
23 We've met before, correct?  
24 A. Yes.  
25 Q. I want to review your  
00366:01 background and history with Monsanto.  
02 Can you tell us about your  
03 educational background starting with college,  
04 please?  
05 A. I have a bachelor of arts in  
06 biology from the University of Colorado in  
07 Boulder in 1977.  
08 I have a Ph.D. in anatomy and  
09 cell biology. My area of research is  
10 mechanistic reproductive and developmental  
11 toxicology from the University of Cincinnati  
12 College of Medicine. And I got that in 1982.  
13 Q. And as part of your graduate  
14 studies, did you take any classes in  
15 toxicology?  
16 A. Yes, I did.  
17 Q. What sort of classes did you  
18 take in toxicology?  
19 A. We had classes in the method of  
20 what toxicology is and the basic principles  
21 of toxicology. I had forensic pathology, and  
22 so they were very basic courses.  
23 Q. Did you do any research in  
24 toxicology as part of your Ph.D. program?  
25 A. Yes, I did. I was a  
00367:01 mechanistic reproductive and developmental  
02 toxicologist, and what I was looking at is if

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03 I gave a pregnant animal a drug on a certain  
04 day it caused a certain malformation, and I  
05 wanted to understand what was the mechanism  
06 by which that compound caused that particular  
07 defect in those offsprings.  
08 Q. And these were animals that you  
09 were experimenting with?  
10 A. I was working with rats.

### 2. PAGE 380:07 TO 381:02 (RUNNING 00:00:37.980)

07 Q. I handed you a document that  
08 we've marked as Exhibit 1-56.  
09 Have you seen this document  
10 before?  
11 A. Yes, I have.  
12 Q. Can you tell us what this  
13 document is?  
14 A. This is the review of the EPA  
15 of glyphosate for its re-registration  
16 eligibility decision.  
17 Q. And do you know who wrote this  
18 document?  
19 A. This would have been the EPA in  
20 their Office of Pesticide Programs.  
21 Probably -- the group of them probably put  
22 this all together because there's more than  
23 just toxicologists. So the Human Health  
24 Effects division would have been involved as  
25 well.  
00381:01 Q. So the EPA wrote this document?  
02 A. Yes.

### 3. PAGE 381:07 TO 381:12 (RUNNING 00:00:12.500)

07 Q. As part of the re-registration  
08 eligibility decision for glyphosate, did EPA  
09 conduct a human health risk assessment?  
10 A. Yes, it did.  
11 Q. Let's turn to the table of  
12 contents in the document here.

### 4. PAGE 381:13 TO 383:07 (RUNNING 00:01:56.599)

13 On the page that's marked  
14 little I, is this the table of contents that  
15 addresses part of the human health assessment  
16 that EPA did in 1993?  
17 A. Yes.  
18 Q. And can you read through this  
19 list, and we have another page that we'll put  
20 up in a minute, and tell us what the EPA  
21 considered as part of its toxicology  
22 assessment.  
23 A. They looked at acute toxicity,  
24 subchronic toxicity, chronic toxicity,  
25 carcinogenicity, developmental toxicity.  
00382:01 Q. Okay. Let me get the other  
02 page over here.  
03 A. Reproductive toxicity,  
04 mutagenicity, metabolism, neurotoxicity,  
05 other toxicological end points, and a  
06 reference dose.  
07 Q. Okay. Did these studies  
08 include any studies that addressed cancer as  
09 an end point?  
10 A. Yes, they did.  
11 Q. Okay. What kind of studies

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12 would that have been?  
13 A. Those would have been long-term  
14 feeding studies in rodents.  
15 Q. And one of the topics here at D  
16 is carcinogenicity, correct?  
17 A. Yes.  
18 Q. And what does carcinogenicity  
19 mean?  
20 A. That means you're studying the  
21 development of cancer, the potential of a  
22 substance to cause cancer.  
23 Q. And in the sections of the RED  
24 that are identified in this table of  
25 contents, did the EPA consider various  
00383:01 studies that addressed those topics?  
02 A. Yes, it did.  
03 Q. Including those studies looking  
04 at cancer end points?  
05 A. Yes, they did.  
06 Q. I'd like you to turn now to  
07 page 57 of the RED document.

**5. PAGE 383:08 TO 384:05 (RUNNING 00:00:44.717)**

08 And you'll see a section called  
09 "Eligibility Decision" on that page?  
10 A. Yes, I do.  
11 Q. Would you read the first  
12 paragraph for the jury under Eligibility  
13 Decision?  
14 A. "Based on the reviews of the  
15 generic data for the active ingredient  
16 glyphosate, the agency has sufficient  
17 information on the health effects of  
18 glyphosate and on its potential for causing  
19 adverse effects in fish and wildlife and the  
20 environment. The agency concludes that  
21 products containing glyphosate for all uses  
22 are eligible for re-registration."  
23 Q. And then can you read the  
24 paragraph below that, please?  
25 A. "The agency has determined that  
00384:01 glyphosate products, labeled and used as  
02 specified in this re-registration eligibility  
03 document, will not pose unreasonable risks or  
04 adverse effects to humans or the  
05 environment."

**6. PAGE 386:12 TO 386:13 (RUNNING 00:00:08.902)**

12 Q. Let me show you this document  
13 which we're going to mark as Exhibit 1-57.

**7. PAGE 386:14 TO 387:04 (RUNNING 00:00:28.995)**

14 And can you -- have you seen this document  
15 before?  
16 A. Yes, I have.  
17 Q. Can you tell us what this  
18 document is?  
19 A. This is the report on the  
20 potential of glyphosate to cause cancer from  
21 the Cancer Assessment Review Committee, which  
22 is a part of EPA.  
23 Q. And this is on EPA -- US EPA  
24 letterhead, correct?  
25 A. Yes, it is.  
00387:01 Q. And this is a document prepared

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02 by an agency of the EPA?  
03 A. Yes, it is. A committee of the  
04 EPA.

**8. PAGE 387:18 TO 388:17 (RUNNING 00:01:14.450)**

18 Q. Okay. Is this document still  
19 available on the EPA website?  
20 A. Yes, it is.  
21 Q. And have you looked for it and  
22 found it on the EPA website?  
23 A. Yes, I did.  
24 Q. Okay. So it is still a  
25 publicly available document that can be  
00388:01 obtained from the EPA, correct?  
02 A. Yes, it can.  
03 Q. Do you know what prompted the  
04 Cancer Assessment Review Committee to issue  
05 this report in October of 2015?  
06 A. It was the IARC's monograph on  
07 glyphosate.  
08 Q. And, in fact, if we turn to  
09 page 7 of this document, which is the  
10 executive summary, and even look -- and look  
11 at the last sentence on this page.  
12 Can you read that sentence for  
13 the jury, please?  
14 A. "The conclusion by IARC and the  
15 additional studies not available to OPP  
16 prompted the agency to reevaluate the  
17 carcinogenic potential of glyphosate."

**9. PAGE 389:01 TO 389:09 (RUNNING 00:00:28.138)**

00389:01 Q. And if we look on page 8, does  
02 that page provide us any information on what  
03 the CARC, the Cancer Assessment Review  
04 Committee, reviewed data-wise as far as this  
05 report? If we look at the third sentence in  
06 the paragraph that begins, "The CARC also  
07 evaluated."  
08 Do you see that?  
09 A. Yes.

**10. PAGE 389:10 TO 389:16 (RUNNING 00:00:17.930)**

10 Q. One second. Can you read that  
11 to the jury, please?  
12 A. "The CARC also evaluated 11  
13 chronic toxicity/carcinogenicity studies in  
14 rats, parentheses, 7, unparentheses; in mice,  
15 four, following dietary administration for up  
16 to two years."

**11. PAGE 390:06 TO 390:07 (RUNNING 00:00:05.084)**

06 Q. Okay. So let's look at what  
07 the CARC said about carcinogenicity on

**12. PAGE 390:08 TO 390:08 (RUNNING 00:00:05.531)**

08 page 9.

**13. PAGE 390:09 TO 390:24 (RUNNING 00:00:31.544)**

09 This is a paragraph that starts  
10 "overall."  
11 A. Yes.  
12 Q. Do you see that?

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13 Can you read that, please?  
14 A. "Overall, the CARC concluded  
15 that there was no evidence of carcinogenicity  
16 in the 11 carcinogenicity studies conducted  
17 in Sprague Dawley or Wistar rats and CD-1  
18 mice. There were no treatment-related  
19 increases in the occurrence of any tumor type  
20 in either sex of either species."  
21 Q. So is that the opinion of the  
22 EPA's Cancer Assessment Review Committee  
23 issued in 2015?  
24 A. Yes.

**14. PAGE 391:04 TO 392:01 (RUNNING 00:00:51.964)**

04 Q. Do you know did the Cancer  
05 Assessment Review Committee reach an overall  
06 conclusion regarding the carcinogenic  
07 potential of glyphosate?  
08 A. Yes, they did.  
09 Q. Let's look on page 10 of this  
10 document.  
11 And you see above the bullet  
12 points?  
13 A. Yes.  
14 Q. Can you read the sentence that  
15 starts "in accordance"?  
16 A. "In accordance with the 2005  
17 guidelines for carcinogen risk assessment,  
18 based on the weight of evidence, glyphosate  
19 is classified as not likely to be  
20 carcinogenic to humans."  
21 Q. Okay. And that conclusion was  
22 reached in October of 2015, correct?  
23 A. Yes, it was.  
24 Q. And that was after the IARC had  
25 issued its report, correct?  
00392:01 A. Correct.

**15. PAGE 392:05 TO 392:13 (RUNNING 00:00:23.350)**

05 Q. Has EPA issued any other  
06 documents since the CARC report in October  
07 of 2015 that evaluate the carcinogenic  
08 potential of glyphosate?  
09 A. Yes, they have.  
10 Q. What document is that that  
11 you're referring to?  
12 A. The glyphosate issue paper by  
13 OPP.

**16. PAGE 392:17 TO 393:01 (RUNNING 00:00:19.642)**

17 Q. I hand you a document that's  
18 been marked as Exhibit 1-58 entitled  
19 "Glyphosate issue paper: Evaluation of  
20 carcinogenic potential, EPA's Office of  
21 Pesticide Programs, September 12, 2016."  
22 Do you see that document?  
23 A. Yes.  
24 Q. Have you seen that document  
25 before?  
00393:01 A. Yes, I have.

**17. PAGE 395:02 TO 395:15 (RUNNING 00:00:28.298)**

02 Q. What is EFSA, by the way?  
03 A. EFSA is the European Food

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04 Safety Authority. It is the agency similar  
05 to like an EPA that would look at and  
06 evaluate the safety of pesticides.  
07 Q. Do you know whether EFSA has  
08 evaluated the carcinogenic potential of  
09 glyphosate within the last few years?  
10 A. Yes, they did.  
11 Q. And do you know when?  
12 A. It was in 2015.  
13 Q. And what did they conclude?  
14 A. That it was not a carcinogenic  
15 hazard to humans.

**18. PAGE 395:19 TO 396:23 (RUNNING 00:00:50.665)**

19 Q. What is the JPMR [sic]  
20 referenced in this document?  
21 A. The JPMR is the Joint Meeting  
22 of Pesticide Residues. It's another program  
23 in the World Health Organization. It's a  
24 combination of the food agricultural  
00396:01 organization that looks at the residues and  
02 the World Health Organization that looks at  
03 the toxicology, and they evaluate the  
04 toxicology and the residues of pesticide  
05 products.  
06 Q. So the JPMR [sic] is part of  
07 the World Health Organization?  
08 A. Yes, it is.  
09 Q. And the IARC is also part of  
10 the World Health Organization, correct?  
11 A. Yes.  
12 Q. What did JPMR -- has JPMR [sic]  
13 evaluated the carcinogenic potential of  
14 glyphosate within the last few years?  
15 A. They did in 2016.  
16 Q. And what did they conclude?  
17 A. That it was not carcinogenic to  
18 humans.  
19 Q. So a different conclusion than  
20 the IARC concluded?  
21 A. Yes.  
22 Q. Do you agree with the JPMR's  
23 [sic] conclusion?  
A. Yes, I do.

**19. PAGE 399:05 TO 399:15 (RUNNING 00:00:22.478)**

05 Q. What is the significance of  
06 their finding that tumors are not reproduced  
07 across studies?  
08 A. If the tumors -- if glyphosate  
09 really were a carcinogen and it really  
10 were the -- developing those tumors, you  
11 would expect it every time to create those  
12 tumors, not just in one study and not in  
13 several other studies.  
14 So consistency is very  
15 important.

**20. PAGE 400:16 TO 400:24 (RUNNING 00:00:20.880)**

16 Q. Has the potential association  
17 between Roundup exposure and non-Hodgkin's  
18 lymphoma been studied?  
19 A. Yes.  
20 Q. Did EPA's CARC evaluate the  
21 epidemiological data regarding Roundup



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22 exposure and NHL in its 2015 evaluation of  
23 glyphosate?  
24 A. Yes, it did.

21. PAGE 403:14 TO 403:22 (RUNNING 00:00:25.478)

14 Q. Did EPA's OPP evaluate the  
15 epidemiological data regarding an alleged  
16 association between glyphosate and  
17 non-Hodgkin's lymphoma in its 2016  
18 publication?  
19 A. Yes, they did.  
20 Q. Let's take a look at that  
21 document, which we've marked as Exhibit 1-58,  
22 and if you could look at page 140, please.

22. PAGE 403:23 TO 404:01 (RUNNING 00:00:08.668)

23 And again, this is a  
24 publication by the EPA's Office of Pesticide  
25 Programs, right?  
00404:01 A. Yes.

23. PAGE 404:19 TO 404:23 (RUNNING 00:00:16.023)

19 Now, did the data that was  
20 reviewed by the OPP in 2016, did that include  
21 the epidemiology studies that Mr. Miller was  
22 asking you about yesterday?  
23 A. Yes, it did.

24. PAGE 405:02 TO 406:09 (RUNNING 00:01:12.341)

02 Mr. Miller asked you about

 0282-002 -

03 page 2 of this document.  
04 A. Yes.  
05 Q. And he asked you about this  
06 sentence I'm pointing to here on the screen:  
07 "There are now six published studies that  
08 arguably associate glyphosate and other  
09 pesticides with lymphopietic cancers, 4-6,  
10 or adverse reproductive outcomes, 7-9."  
11 Do you see that?  
12 A. Yes.  
13 Q. And he asked you whether those  
14 six studies all related to whether glyphosate  
15 could be associated with cancer.  
16 Do you remember that?  
17 A. Yes.  
18 Q. Do those six studies that are  
19 referenced in this paper all address the  
20 question of whether glyphosate is associated  
21 with cancer?  
22 A. No.  
23 Q. How many of them do address  
24 whether glyphosate is associated with cancer?  
25 A. Only three of them.  
00406:01 Q. So of the six, three do not  
02 address cancer, correct?  
03 A. Correct. They address  
04 reproductive outcomes.  
05 Q. And the three that are  
06 addressed to cancer, were those considered by  
07 the EPA's Office of Pesticide Programs in its  
08 September 12, 2016 report?



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09 A. Yes, they were.

25. PAGE 407:12 TO 408:22 (RUNNING 00:01:40.671)

12 Q. I want to have you look again  
13 at the document we've marked as 1-58, and  
14 turn to page 131, please.

15 And we read part of this  
16 paragraph already, but do you see the  
17 paragraph about 6.4 that starts "overall"?

18 A. 131. "Overall."

19 Q. Yeah. Can you read down to,  
20 let's see, the third sentence there?

21 A. "Overall, there's remarkable  
22 consistency in the database for glyphosate  
23 across multiple lines of evidence. For NHL,  
24 observed associations in epidemiological  
25 studies were nonstatistically significant and  
00408:01 were of relatively small magnitude. Chance  
02 and/or bias cannot be excluded as an  
03 explanation for the observed associations."

04 Q. And do you agree with OPP's  
05 view of those epidemiological studies?

06 A. Yes.

07 Q. And, in fact, you had conveyed  
08 similar opinions to Mr. Miller when he was  
09 discussing some numbers that were contained  
10 in a press report of an unidentified  
11 epidemiological study yesterday, correct?

12 A. Yes.

13 Q. What is the -- what was the  
14 OPP's -- well, a few minutes ago we read that  
15 the OPP's conclusion was that the strongest  
16 support is that glyphosate is not likely to  
17 be carcinogenic to humans.

18 Do you remember that?

19 A. Yes.

20 Q. Do you agree with that analysis  
21 by the OPP?

22 A. Yes.

26. PAGE 411:14 TO 413:12 (RUNNING 00:01:53.416)

14 Q. Okay. Let's look at  
15 Exhibit 1-57, and look on page 9 again. The  
16 paragraph, the last full paragraph, on the  
17 page that starts "the CARC evaluated."

18 Do you see that?

19 A. Yes.

20 "The CARC evaluated a total" --

21 Q. Just read through the citation,  
22 please.

23 A. Sorry. I'm sorry.

24 Q. Go ahead.

25 A. "The CARC evaluated a total of  
00412:01 54 mutagenicity/genotoxicity studies which  
02 included studies submitted to the agency, as  
03 well as studies reported in the two review  
04 articles, Williams, et al., 2000, and Kier  
05 and Kirkland, 2013."

06 Q. All right. Now, so there were  
07 54 mutagenicity/genotoxicity studies  
08 considered by the CARC in 2015, right?

09 A. Yes.

10 Q. Were any of those performed by  
11 Monsanto?

12 A. Yes.

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13 Q. Do you know how many?  
14 A. I would assume they would be  
15 the same four that we talked about in the  
16 RED.  
17 Q. So who did the other, say, 50  
18 studies?  
19 A. Those would be the other  
20 registrants of glyphosate.  
21 Q. Okay. So I want to then go  
22 down to the sentence that starts "the CARC  
23 based on."  
24 Do you see that in that  
25 paragraph?

00413:01 A. Yes.  
02 Q. Can you read that, please?  
03 A. "The CARC, based on a weight of  
04 evidence of the in vitro and in vivo studies,  
05 concluded that there is no concern for  
06 genotoxicity or mutagenicity. Glyphosate was  
07 no -- should be not -- mutagenic in bacteria  
08 reversion, Ames, assays or in vitro mammalian  
09 gene mutation assays. There is no convincing  
10 evidence that glyphosate induces micronuclei  
11 formation or chromosomal aberrations in vitro  
12 or in vivo."

**27. PAGE 414:07 TO 414:12 (RUNNING 00:00:22.304)**

07 Let me ask it again. Did the  
08 Office of Pesticide Programs review studies  
09 on mutagenicity or genotoxicity in 2016?  
10 A. Yes, they did.  
11 Q. Let's look at Exhibit 1-58  
12 again, and look at page 131. And do you see

**28. PAGE 414:13 TO 414:25 (RUNNING 00:00:26.304)**

13 the middle paragraph that starts "over 80  
14 genotoxicity"?  
15 Do you see that?  
16 A. Yes.  
17 Q. Can you read the first two  
18 sentences of that paragraph, please?  
19 A. "Over 80 genotoxicity studies  
20 with the active ingredient glyphosate were  
21 analyzed for the current evaluation. The  
22 overall weight of evidence indicates that  
23 there is no convincing evidence that  
24 glyphosate is genotoxic in vivo via the oral  
25 route."

**29. PAGE 415:01 TO 416:15 (RUNNING 00:01:43.676)**

00415:01 Q. And the 80 studies that OPP  
02 looked at, is that more or less than the CARC  
03 looked at in 2015?  
04 A. More than the CARC.  
05 Q. Do you remember how many the  
06 CARC looked at?  
07 A. 54.  
08 Q. Do you agree with EPA's OPP  
09 that there's no convincing evidence that  
10 glyphosate is genotoxic in vivo via the oral  
11 route?  
12 A. Yes.  
13 Q. All right. Let's look again at  
14 the last sentence of this paragraph. It  
15 starts "although some."

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16 Do you see that right here?  
17 A. Oh, okay.  
18 Q. Can you read that, please?  
19 A. "Although some positive  
20 findings reported for chromosomal alterations  
21 in vitro, these findings were limited to a  
22 few studies and are not supported by the in  
23 vivo studies that are the most relevant for  
24 human risk assessment."  
25 Q. Do you agree with that  
00416:01 conclusion?  
02 A. Yes.  
03 Q. And we read this earlier, but  
04 can you again read the last sentence of 6.4?  
05 A. "The genotoxicity studies  
06 demonstrate that glyphosate is not directly  
07 mutagenic or genotoxic in vivo."  
08 Q. So all three of the evaluations  
09 by EPA that we've talked about, the 1993 RED,  
10 the 2015 CARC report and the 2016 OPP report,  
11 what was the conclusion of those reports  
12 regarding the carcinogenic potential of  
13 glyphosate?  
14 A. That glyphosate was not  
15 carcinogenic to humans.

30. PAGE 420:03 TO 420:23 (RUNNING 00:00:49.515)

03 Q. Have the surfactants that are  
04 used in Monsanto's glyphosate-based  
05 herbicides that are sold in the United  
06 States, have they been approved by the EPA?  
07 A. Yes, they have.  
08 Q. What type of safety or  
09 toxicological data does EPA require for the  
10 approval of surfactants?  
11 A. The EPA requires before you put  
12 any inert ingredient into your pesticide  
13 formulation, they have to evaluate it for its  
14 safety. Many years ago, they didn't have a  
15 very extensive data set for the surfactants,  
16 but today they look for information on acute  
17 toxicity. They look for some information on  
18 subchronic studies, is there anything on  
19 genotoxicity. They look for environmental  
20 fate. They look for some ecotox.  
21 So they look for a variety of  
22 information on the surfactants as well to  
23 make their determination of safety.

31. PAGE 422:14 TO 423:12 (RUNNING 00:00:57.433)

 2513 -



14 Q. Marked a document as  
15 Exhibit 1-59 titled "The toxicity profiles of  
16 five surfactants used in Roundup-branded  
17 agricultural herbicides."  
18 Have you seen this document  
19 before?  
20 A. Yes, I have.  
21 Q. And who is the first author of  
22 this paper?  
23 A. I am.  
24 Q. Can you tell me was this  
25 document prepared in the ordinary course of

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00423:01 Monsanto's business?  
02 A. Yes, it was.  
03 MR. JOHNSTON: Okay. We'll  
04 move this document into evidence.  
05 QUESTIONS BY MR. JOHNSTON:  
06 Q. Do you recall what the  
07 conclusions of this paper were?  
08 A. Yes. That the surfactants  
09 are -- there's no concern for any  
10 toxicological effects for humans from the --

 -KE2513 - Clear Attached Exhibit 2513



11 or animals from these use of surfactants in  
12 our formulated products.

32. PAGE 426:16 TO 426:19 (RUNNING 00:00:11.269)

16 Q. Now, you mentioned earlier that  
17 EPA has evaluated the surfactants that are  
18 used in Monsanto's US formulations, correct?  
19 A. Yes.

33. PAGE 426:23 TO 426:24 (RUNNING 00:00:07.386)

23 Q. Let me show you a document that  
24 I'm going to mark as Exhibit 1-60.

34. PAGE 426:25 TO 428:25 (RUNNING 00:01:56.840)

25 Have you seen this document  
00427:01 before?  
02 A. Yes, I have.  
03 Q. All right. And this is a  
04 document on US Environmental Protection  
05 Agency letterhead, correct?  
06 A. Yes, it is.  
07 Q. And the subject is -- words  
08 that I'm going to have trouble pronouncing,  
09 but I'll try -- alkyl amine polyalkoxylates,  
10 JITF CST 4 inert ingredients, and then it  
11 goes on, correct?  
12 A. Yes.  
13 Q. Can you tell me generally what  
14 this document is?  
15 A. The EPA under the Food Quality  
16 Protection Act needed to go back and look at  
17 all of their inert ingredients and reassess  
18 them, and they were divided into what they  
19 call clusters. And this one for this  
20 particular family of chemistry, the alkyl  
21 amine polyalkoxylates, was the cluster 4.  
22 And the JITF is a Joint  
23 Industry Task Force that was formed to  
24 support this reevaluation. And it was made  
25 up of people like the agricultural companies  
00428:01 who may be using those inerts in their  
02 products or for the people who are then  
03 manufacturing those products.  
04 Q. And we've talked about this  
05 before, but remind us what the alkyl amine  
06 polyalkoxylates are?  
07 A. These are -- so what we would  
08 find in here would be like the POEA, the  
09 polyoxyethylene alkyl amines. So this was a  
10 name they kind of created to cover this  
11 bucket of -- you can see there are different  
12 cast members that are associated with the

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13 surfactants in here, but this is the bucket  
14 where many of our surfactants fall.  
15 Q. And the subject goes on to  
16 state after the bolded portion, "Human health  
17 risk assessment to support proposed exemption  
18 from the requirement of a tolerance when used  
19 as inert ingredients in pesticide  
20 formulations," correct?  
21 A. Yes.  
22 Q. So is it correct that this  
23 document is a human health risk assessment of  
24 these surfactants?  
25 A. Yes, it is.

**35. PAGE 429:01 TO 430:09 (RUNNING 00:01:32.896)**

00429:01 Q. And if you look at page 4,  
02 please, which is the executive summary of  
03 this document?  
04 A. Uh-huh.  
05 Q. You see, I guess, the third  
06 paragraph starts "the toxicology database"?  
07 A. Yes.  
08 Q. Can you read that paragraph,  
09 please?  
10 A. "The toxicology database is  
11 adequate to support the use of the alkyl  
12 amine polyalkoxylates when used as inert  
13 ingredients. The AAPs are not acutely toxic  
14 by the oral and dermal routes of exposure or  
15 via inhalation under normal use conditions.  
16 Concentrated materials are generally  
17 corrosive eye and skin irritants and may be  
18 dermal sensitizers. There is no evidence  
19 that the AAPs are neurotoxic, mutagenic or  
20 clastogenic."  
21 Q. And we talked yesterday about  
22 what clastogenic means, but can you remind us  
23 what clastogenic means?  
24 A. Again, it would be damage to  
25 the structural genetic material.  
00430:01 Q. Okay. Do you agree with EPA  
02 that alkyl amine polyalkoxylates are not  
03 neurotoxic, mutagenic or clastogenic?  
04 A. Yes.  
05 Q. Did EPA reach a conclusion  
06 regarding the overall carcinogenic potential  
07 of these AAPs as they call them?  
08 A. Yes, they did.  
09 Q. Let's look on page 15, and

**36. PAGE 430:10 TO 430:21 (RUNNING 00:00:22.735)**

10 there's a section called 4.4, Classification  
11 of Carcinogenic Potential.  
12 Do you see that?  
13 A. Yes, I do.  
14 Q. Can you please read that first  
15 sentence for the record?  
16 A. "There is no evidence that the  
17 AAPs are carcinogenic."  
18 Q. Do you agree with the EPA's  
19 conclusion that AAPs -- that there's no  
20 evidence that AAPs are carcinogenic?  
21 A. Yes.

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37. PAGE 431:05 TO 435:14 (RUNNING 00:04:03.826)

05 Q. Now, we've been talking about  
06 EPA's review of data on glyphosate and  
07 surfactants so far, correct?

08 A. Yes.

09 Q. Has EPA reviewed any safety  
10 data on the formulated product itself,  
11 Roundup and other formulated products?

12 A. Yeah. We are required for all  
13 of our formulated products to conduct what we  
14 call the six-pack: It's acute oral, acute  
15 dermal, acute inhalation, skin and eye  
16 irritation, and a skin sensitization for all  
17 of our formulations.

18 Q. So is that true of every  
19 version of glyphosate-based products sold in  
20 the United States?

21 A. Yes, it is.

22 Q. Okay. Why are there different  
23 formulations sold in the United States?

24 A. Well, we have different  
25 manufacturers for one. And then Monsanto, we  
00432:01 also have different needs. We have an IT&O  
02 market. We have a consumer market. We have  
03 an agricultural market. So those  
04 formulations can be different.

05 We also have some that have  
06 different -- you know, the way that we can  
07 put it in containers. So we have different  
08 salts that go along with them. We have  
09 different weed species that we have to deal  
10 with.

11 So the formulated product is --  
12 what you're looking at is what is the need to  
13 control the vegetation, what sector, and then  
14 you develop formulations to be efficacious in  
15 those groups.

16 Q. And did I understand your  
17 testimony to be that for each of those  
18 formulations sold in the United States you  
19 have to do what you called a six-pack of  
20 tests?

21 A. Yes, we do.

22 Q. Have you been involved in the  
23 conduct of that six-pack of tests for US  
24 formulations?

25 A. I have, yes.

00433:01 Q. What do those test results show  
02 generally?

03 A. For the Roundup-branded  
04 products, that they are practically and  
05 slightly nontoxic. We have very little low  
06 acute, dermal and inhalation toxicity. We  
07 have low eye and skin irritation and that  
08 they are not sensitizers.

09 Q. Has Monsanto done any testing  
10 other than or in addition to that six-pack  
11 testing on any formulated products?

12 A. We have done some gene tox  
13 testing on some of our formulated products.

14 Q. Do you know how many genotox  
15 studies that Monsanto has undertaken on its  
16 formulated products roughly?

17 A. I'd say a couple dozen.

18 Q. And is there any consistent

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19 results from those genotoxicity studies?  
20 A. Those studies are conducted  
21 according to the guidelines that the  
22 regulatory agencies require us, and they have  
23 been no evidence of genotoxicity or  
24 mutagenicity.  
25 Q. Now, are those studies required  
00434:01 by the EPA?  
02 A. No, they're not.  
03 Q. Well, why would Monsanto do  
04 additional genotoxicity testing on its  
05 formulated products that is not required by  
06 the EPA?  
07 A. We would have people asking  
08 about the profile. Knowing that we know the  
09 surfactants are not genotoxic and that  
10 glyphosate isn't, we feel very comfortable  
11 that the formulated product would not be.  
12 But we would go ahead and then do those  
13 studies according to the EPA's guidelines.  
14 Q. But why?  
15 A. To answer questions if people  
16 have concerns. We want to be able to give  
17 them the data that they can have to evaluate  
18 the safety.  
19 Q. You remember yesterday  
20 Mr. Miller asked you some questions about a  
21 Dr. Parry from 1999 and 2000.  
22 Do you remember that?  
23 A. Yes, I do.  
24 Q. And he was a genotox expert  
25 that Monsanto worked with in that period?  
00435:01 A. Correct.  
02 Q. And he pointed out in several  
03 documents that Dr. Parry wanted Monsanto to  
04 conduct some additional genotoxicity studies?  
05 A. Yes.  
06 Q. Did Monsanto ever conduct any  
07 of the sorts of studies that Dr. Parry was  
08 recommending?  
09 A. Yes, we did. Dr. Parry was  
10 concerned about the findings from the Peluso  
11 and Bolognesi studies, and so we did an in  
12 vivo study with the formulated product in  
13 those studies to evaluate and answer the  
14 questions that Dr. Parry was concerned about.

38. PAGE 435:18 TO 436:11 (RUNNING 00:00:36.905)

18 Q. I've handed you a document that

 2601 -

19 I've marked as Exhibit 1-61.  
20 Have you ever seen this  
21 document before?  
22 A. Yes, I have.  
23 Q. And can you tell us what the  
24 title of this document is?  
25 A. "Genotoxic potential of  
00436:01 glyphosate formulations: Mode-of-action  
02 investigations."  
03 Q. And were you an author on this  
04 publication?  
05 A. Yes, I was.  
06 Q. And was anyone else at Monsanto  
07 an author on this publication?





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08 A. Yes, they were.  
09 Q. Okay. The lead author is  
10 William Heydens, correct?  
11 A. Correct.

39. PAGE 436:17 TO 440:16 (RUNNING 00:03:40.735)

17 Q. And this was an article  
18 published in the Journal of Agricultural and  
19 Food Chemistry in 2008, correct?  
20 A. Yes.  
21 Q. Is the Journal of Agricultural  
22 and Food Chemistry a peer-reviewed journal?  
23 A. Yes, it is.  
24 Q. And can you tell us briefly or  
25 generally what was done in this paper?  
00437:01 A. The below -- the Bolognesi and  
02 Peluso studies, their route of injection was  
03 to actually take a needle and inject the  
04 formulated product into the abdomen of the  
05 animals. And so we felt that would be -- and  
06 as again, we have a surfactant in there, so  
07 that would be like taking dishwashing  
08 detergent and sticking a needle in your  
09 abdomen and injecting it with the dishwashing  
10 detergent.  
11 And so we felt that if you did  
12 a real -- a relevant route of exposure under  
13 normal human conditions such as an oral  
14 exposure, that you would not see the same  
15 findings that you saw in this study. That we  
16 felt that the findings in the study were  
17 because the material is injected into the  
18 abdomen and directly injured the liver and  
19 the kidney that were the two organs in this  
20 particular study.  
21 And when we did it via the real  
22 world, normal route of exposure orally, we  
23 didn't see any of the results that we saw.  
24 And so in here they talked about the  
25 oxidative stress. And what we found is when  
00438:01 you inject it into the abdomen, again,  
02 directly into the abdomen, of the animals,  
03 you actually had test material that was  
04 sitting on those organs and actually damaged  
05 those organs. And the oxidative stress that  
06 you saw afterwards, those cells of those  
07 organs were damaged directly, and that was  
08 then how you got the oxidative stress.  
09 When it was through the oral  
10 way, which is the more natural way, real  
11 world exposure, we didn't find any effect on  
12 the organs, and we didn't find any oxidative  
13 stress.  
14 So the oxidative stress that is  
15 related to that direct toxic effect on the  
16 cells of those organs.  
17 Q. All right. Let me make sure I  
18 understand that.  
19 Did you replicate the practice  
20 or the methodology of injecting formulated  
21 product into the abdomens of animals?  
22 A. We reproduced their studies,  
23 yes.  
24 Q. And did you find the same  
25 results that their studies found when you  
00439:01 followed that methodology?

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02 A. Yes, we did.  
03 Q. Did you also inject surfactants  
04 without glyphosate into those animals?  
05 A. We took a formulation where we  
06 took the glyphosate out but had exactly the  
07 same formulation, injected that into the  
08 animals, and we saw the exact same result  
09 that we saw with the fully loaded  
10 formulation.  
11 Q. So if you only injected  
12 surfactants, you had the same results as if  
13 you had injected the full-formulated product  
14 with glyphosate?  
15 A. Correct.  
16 Q. Okay. And in those tests, you  
17 found oxidative stress to the cells, correct?  
18 A. Yes, we did.  
19 Q. And then what -- and then you  
20 also provided formulated product via oral  
21 administration?  
22 A. Yes, an oral.  
23 Q. And did you find any oxidative  
24 stress when you used that method of  
25 administration?  
00440:01 A. No, we did not. And that was a  
02 fully loaded formulation.  
03 Q. And so what is your conclusion  
04 about what that means with respect to the  
05 potential for glyphosate to cause oxidative  
06 stress when used in the real world?  
07 A. In the real world, you won't  
08 have that direct exposure to the cells that  
09 you had with that injection into the abdomen  
10 to directly impact those organs. You won't  
11 have that route of exposure from the oral  
12 route.  
13 Q. And this is a paper that  
14 Monsanto employees and others put together to

 -KE2601 - Clear Attached Exhibit 2601



15 show those findings, correct?  
16 A. Yes.

40. PAGE 440:20 TO 441:19 (RUNNING 00:01:08.289)

20 Q. I would like to ask you a  
21 little bit about exposure since we were just  
22 talking about it.  
23 How are people exposed to  
24 glyphosate in using Monsanto's formulated  
25 products?  
00441:01 A. You can think about  
02 potentially -- in normal use of the product  
03 or from food that is derived, you can have it  
04 from a dermal exposure, you could have it  
05 potentially from an inhalation exposure, and  
06 you can have it from an oral exposure.  
07 Q. And has Monsanto studied what  
08 happens to glyphosate in the body via those  
09 various exposure mechanisms?  
10 A. We have. There are a number of  
11 studies that have looked at applicators who  
12 are applying the product. We've looked at  
13 what we call in their breathing zone to see  
14 if we can detect any level of glyphosate.  
15 And then we've also looked -- at two ways to

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16 look at it: One is biomonitoring by the  
17 glyphosate might be absorbed through the  
18 skin; we look at it in the urine and see what  
19 might be the internal exposure they saw.

41. PAGE 444:09 TO 449:13 (RUNNING 00:05:14.018)

09 Q. Okay. I'm going to mark as  
10 Exhibit 1-62 a study or a paper published in  
11 Environmental Health Perspectives in March  
12 of 2004 titled "Glyphosate biomonitoring for  
13 farmers and their families: Results from the  
14 Farm Family Exposure Study."

15 Have you seen this document  
16 before?

17 A. Yes, I have.

18 Q. Can you generally tell me what  
19 you understand this document to be?

20 A. We had -- as I talked about  
21 earlier, we had studies from applicators that  
22 were doing applications like in forestry or  
23 in orchards in other areas, but we didn't  
24 have any direct data on farmers and their  
25 families.

00445:01 And so this was a study that  
02 was put together with a task force from  
03 CropLife America. It was called the Farm  
04 Family Exposure Task Force, and they were  
05 doing this Farm Family Exposure Study. And  
06 actually, the head of the study was at the  
07 University of Minnesota. And what they did  
08 is they went out and they recruited families  
09 for -- 48 families. They had to have a  
10 spouse that would be willing to do this and  
11 their children.

12 And so they had 48 farmers and  
13 their spouses and their children, and they  
14 agreed to give urine samples, 24-hour urine  
15 samples, the day before an application, the  
16 day of an application, and then three days  
17 after the application. And so then what we  
18 did is then we looked at the level of  
19 glyphosate in their urine.

20 Q. And the first author on this  
21 study is John Acquavella, correct?

22 A. Yes, it is.

23 Q. And who is John Acquavella or  
24 who was he at the time this was published?

00446:01 A. John Acquavella was an  
02 epidemiologist at Monsanto.

03 Q. So he was a Monsanto employee  
04 at this time?

05 A. Yes, he was.

06 Q. Is he still a Monsanto  
07 employee?

08 A. No, he's retired.

09 Q. Okay. So can you tell me what  
10 the results were as far as detectable  
11 glyphosate in the farmers and the wives and  
12 their children?

13 A. They were all extremely low. I  
14 think we had talked about this yesterday that  
15 we improved our analytical method so that we  
16 went from a 10 part per billion limit of  
17 detection to a 1 part per billion limit of  
18 detection, and what we actually found is that  
19 40 percent at that 1 part per billion, which

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19 would be like one drop in an olympic-sized  
20 swimming pool, we found that 40 percent of  
21 the farmers, even though they had done  
22 applications on many acres, they had no  
23 detection of glyphosate in their urine.  
24 And we had one gentleman who  
25 had the highest exposed, and he was at  
00447:01 233 PPB, which was equivalent to 0.04 --  
02 0.004 milligrams per kilogram per day. We  
03 had some spouses, two spouses --  
04 Q. Let me ask you this: So that  
05 was for the farmers?  
06 A. That was for the farmers.  
07 Q. Were the results similar for  
08 the spouses --  
09 A. No.  
10 Q. -- as far as the levels they  
11 were exposed to?  
12 A. No --  
13 Q. Okay. Tell me about that.  
14 A. -- not at all.  
15 There were only two spouses  
16 that had something around the limit of  
17 detection, so that was extremely low.  
18 And I should point out that the  
19 gentleman was a 233 PPB, but the geometric  
20 mean, the mean across all the farmers, was  
21 3 PPB. So it was extremely low.  
22 And then the children, they --  
23 we had about 12 percent that had detectable  
24 glyphosate in their urine, and the maximum  
25 was 29 PPB. Unfortunately, that was the  
00448:01 child of the parent with the 233 PPB. And  
02 for all the children that had detects, except  
03 for one, we could place them being  
04 co-applicators with their parents, actually  
05 working in the mixing and applying area.  
06 I think the important thing  
07 about this is the highest detected person in  
08 this was the one farmer at the 233 PPB or  
09 0.004 milligrams per kilogram. And if you  
10 put that into perspective, the reference dose  
11 for glyphosate from EPA was 2 milligrams per  
12 kilogram per day.  
13 So we can see that even the --  
14 at the highest exposed is extremely well  
15 below any level of concern.  
16 Q. How does EPA determine what the  
17 reference dose is; do you know?  
18 A. Yes, I do. They take a --  
19 what's called a no observed adverse effect  
20 level for a relevant study, and then they say  
21 we're going to take an uncertainty factor of  
22 10 for differences between species and 10  
23 between -- among species gives you an  
24 uncertainty factor of 100. So they divide  
25 that NOEL by that 100 and that will give you  
00449:01 your reference dose.  
02 And with glyphosate, they had a  
03 no observed adverse effect level from our  
04 rabbit teratology study, which was  
05 175 milligrams per kilogram, they divided  
06 that by 100, and then they rounded it up to  
07 2 milligrams per kilogram.  
08 Q. And did any of the exposure  
09 studies in the glyphosate database done by

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10 Monsanto show any exposures above EPA's

 -KE2019 - Clear Attached Exhibit 2019

11 reference dose of 2 milligrams per kilogram  
12 per day?  
13 A. No.

42. PAGE 471:14 TO 472:19 (RUNNING 00:00:56.020)

14 Q. Dr. Farmer, thank you so much  
15 for your time this morning and for yesterday.  
16 I have one last question and  
17 then we'll turn it back over to the  
18 plaintiff's counsel.  
19 Going back to Exhibit 1-8 that

 0305 -

20 was marked yesterday, going back to the  
21 sentence that was highlighted "or this, you  
22 can cannot say that Roundup does not cause  
23 cancer."

24 What did you mean when you said  
25 "you cannot say that Roundup does not cause  
00472:01 cancer"?

02 A. When you looked -- I was  
03 responding to number 2 below in the answer  
04 where it said, "In long-term exposure studies  
05 of animals, Roundup did not cause cancer. We  
06 have not conducted long-term exposure studies  
07 in Roundup, but we have conducted that with  
08 glyphosate."

09 Q. So the issue here was that they  
10 had used the word "Roundup," the brand name,  
11 rather than the name -- the word  
12 "glyphosate," correct?

13 A. Yes. Yes.

14 Q. Okay. Had they said  
15 "glyphosate has been shown in long-term

 -KE0305 - Clear Attached Exhibit 0305

16 studies not to cause cancer," what would you  
17 have said?

18 A. I would have said that was  
19 perfectly fine.

43. PAGE 473:08 TO 475:02 (RUNNING 00:01:30.604)

08 Q. Michael Miller. We had a  
09 chance to visit yesterday. I have a few  
10 follow-up questions.

11 Okay?

12 A. Okay.

13 Q. Thank you, ma'am.

14 Now, this morning counsel for  
15 Monsanto asked you a series of questions, and  
16 I'm here to follow up on them.

17 Okay?

18 A. Okay.

19 Q. And he started out with  
20 Exhibits 1-57 I believe -- I'm sorry, 1-56  
21 was a registration eligibility decision about  
22 glyphosate, right?

23 A. Yes.


24 Q. And then 1-57 which was another



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25 document from the EPA in October of 2015  
00474:01 about glyphosate, right?  
02 A. Yes.  
03 Q. And then in 2016, in  
04 Exhibit 1-58 was an exhibit about glyphosate,  
05 right?  
06 A. Yes.  
07 Q. Now, you understand none of the  
08 clients who are claiming non-Hodgkin's  
09 lymphoma in this case were exposed to  
10 glyphosate. They were exposed to the  
11 formulant, that is to say glyphosate plus the  
12 surfactant.  
13 That's the allegation, right,  
14 Roundup?  
15 A. I know that there are -- I  
16 think if we've talked about this before, they  
17 talk about in there that glyphosate is not a  
18 carcinogen. And then you looked at the  
19 cluster 4 that talked about the surfactants,  
20 and the EPA made a determination that they  
21 weren't concerned about carcinogenicity, that  
22 there wasn't any carcinogenic potential for  
23 the surfactants.  
24 So if you have two substances  
25 and the third one is water, both carcinogenic  
00475:01 [sic], there is no reason to believe that  
02 Roundup is then going to be carcinogenic.

44. PAGE 475:06 TO 478:06 (RUNNING 00:02:46.468)

 0305 -



06 Q. You remember Exhibit 1:8,  
07 right, ma'am?  
08 A. Yes.  
09 Q. You cannot say that Roundup  
10 does not cause cancer, right?  
11 A. Again, we can put that back  
12 into context as we were talking about that  
13 it's below -- it's in response to the  
14 sentence below that says, "In long-term  
15 studies of animals, Roundup does not cause  
16 cancer." We haven't done long-term studies  
17 with Roundup, but, again, it doesn't mean  
18 that Roundup doesn't cause cancer. We can  
19 take a look at both the glyphosate as the  
20 active ingredient and the surfactants  
21 together.  
22 Q. What it means is what you've  
23 said on this document in Exhibit 1:8 in  
24 September 21, 2009, at 5:12 in the afternoon  
25 that, "We have not done carcinogenicity  
00476:01 studies with Roundup."  
02 We, meaning Monsanto, have not  
03 done carcinogenicity, means studies to see if  
04 it causes cancers.  
05 That's what that means, right?  
06 A. We haven't done carcinogenicity  
07 studies with Roundup as I've said below.  
08 It's responding to that statement "in  
09 long-term exposure studies of animals to  
10 Roundup, Roundup did not cause cancer."  
11 And as I said before, we've got  
12 carcinogenicity studies in glyphosate, in EPA  
13 they are in three different documents, it's

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14 concluded that glyphosate is not  
15 carcinogenic. And in the cluster 4 document  
16 they also concluded that the surfactants are  
17 not carcinogenic.  
18 So even though we don't have  
19 long-term studies on Roundup, we can take a  
20 look and we have evidence that the two of  
21 them together, that Roundup would not be

 -KE0305 - Clear Attached Exhibit 0305



22 carcinogenic.  
23 Q. Let's see if we can get a  
24 simple answer to a simple question.  
25 Exhibit 1-56 in 1993 was a  
00477:01 submission on glyphosate, not Roundup, true?  
02 A. There were formulated products  
03 in there, but the basic is about the  
04 re-registration eligibility of glyphosate.  
05 Q. All right. And it's also true,  
06 ma'am, that Exhibit 1-57, which your counsel  
07 showed you, was an exhibit submitted to the  
08 EPA -- I'm sorry, a report of the EPA about  
09 glyphosate, not about Roundup, true?  
10 A. That's about glyphosate, yes.  
11 Q. All right. And then he showed  
12 you a big thick report from the EPA Office of  
13 Pesticide Programs, Exhibit 1-58. It's about  
14 glyphosate, not Roundup, right?  
15 A. It's about glyphosate, yes.  
16 Q. Okay. Now, you understand,  
17 though, that IARC studied and reported on  
18 Roundup, not glyphosate.  
19 They reported on both, right?  
20 A. They made their determination  
21 of glyphosate being a 2A carcinogen.  
22 Q. Yes, ma'am.  
23 A probable human carcinogen for  
24 non-Hodgkin's lymphoma, right?  
25 A. That's what the IARC concluded,  
00478:01 yes.  
02 Q. Yes, ma'am.  
03 And you mentioned that before  
04 the EPA issued their report on glyphosate,  
05 they looked at, I think you said, about  
06 50-some studies, or how many studies?

45. PAGE 478:17 TO 478:18 (RUNNING 00:00:01.632)

17 Q. How many studies did they look  
18 at?

46. PAGE 478:25 TO 479:01 (RUNNING 00:00:03.961)

25 A. I don't understand which  
00479:01 studies either and which report.

47. PAGE 479:18 TO 479:22 (RUNNING 00:00:13.887)

18 Q. Exhibit 1-57, I believe it says  
19 on page 8 -- let's look at it. Let's be  
20 precise. Let's take your time. Don't worry  
21 about flights. We're going to be precise.  
22 All right. On page 8 --

48. PAGE 480:06 TO 481:02 (RUNNING 00:00:57.801)

06 Q. Okay. Counsel even highlighted

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07 this for you. Okay. He said that this  
08 report on glyphosate -- not Roundup, but  
09 glyphosate -- it says the CARC -- the CARC --  
10 I think, Monsanto's lawyer called it CARC --  
11 looked at 25 case-control studies. They  
12 evaluated 11 chronic studies, 7 rat studies,  
13 and 4 mice studies.

14 Does that sound right?


15 A. That's what it says there, yes.

16 Q. Okay. You're aware that when  
17 IARC looked at Roundup, they looked at a  
18 thousand studies, ma'am?

19 A. I don't remember that. That  
20 was not just Roundup they looked at. They  
21 looked at a lot of studies. But, again, when  
22 you look at the studies, they didn't have the  
23 animal studies. They were looking at gene  
24 tox studies on Roundup that were in  
25 irrelevant animal models, irrelevant routes  
00481:01 of exposure, high doses. It's a very  
02 different data set that they were looking at.

49. PAGE 481:06 TO 482:12 (RUNNING 00:01:25.509)

06 Q. Let's take a look at

 0302 -



07 Exhibit 1-65 to see how many studies IARC  
08 looked at, ma'am.

09 Here you go. Here's a copy for  
10 you and a copy for counsel. This is from  
11 IARC, World Health Organization, question and  
12 answers on glyphosate.

13 You've seen this before,  
14 haven't you?

15 A. Yes.

16 Q. Okay. And what IARC is telling  
17 us that in March of 2015, IARC classified  
18 glyphosate as probably carcinogenic to  
19 humans. Okay.

20 And I want to go over a couple  
21 points, but one is to reach these  
22 conclusions, IARC reviewed how many studies,  
23 Dr. Farmer?

24 A. It said a thousand studies,  
25 but, again, when they looked at those  
00482:01 studies, they didn't do any evaluation of  
02 relevancy, strength, exposure routes. They  
03 looked at a thousand studies, but not all of  
04 them were applicable, not all of them were  
05 really very good studies to address the  
06 questions that they were asking.

07 Q. And they found strong evidence  
08 of genotoxicity in Roundup, right? That's  
09 what they report?

10 A. That's what IARC reports.

11 Q. Tell the jury what genotoxicity  
12 means.

50. PAGE 482:17 TO 482:24 (RUNNING 00:00:25.189)

17 THE WITNESS: Genotoxicity,  
18 again, is effects on the genetic  
19 material.

20 QUESTIONS BY MR. MILLER:

21 Q. And then they were very clear




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22 in March of 2016, "Could the carcinogenic  
23 effect of glyphosate be related to other  
24 chemicals in the formulation? No."

51. PAGE 483:06 TO 483:22 (RUNNING 00:00:43.252)

06 Q. And to be clear, let's go to

 0302-002 -

07 page 2, Doctor.  
08 IARC studied pure glyphosate as  
09 well as the glyphosate-based formulations,  
10 right?  
11 A. They did look at glyphosate,  
12 and they did look at studies with  
13 glyphosate-based formulations. But, again, I  
14 would like to add in context those  
15 glyphosate-based formulation studies that had  
16 many of the -- what they're looking at is  
17 positive findings were in non-standard  
18 studies. They were in irrelevant routes of  
19 exposure. They were at high doses. And  
20 again, the results of those are not related  
21 to a genotoxic effect. It's really secondary  
22 to toxicity.

52. PAGE 483:23 TO 486:12 (RUNNING 00:03:00.688)

23 Q. In this question and answer  
24 regarding their findings on glyphosate, IARC  
25 says that "One of the key studies evaluated  
00484:01 in the monograph was the United States  
02 Agricultural Health Study. This study did  
03 not find an association between non-Hodgkin's  
04 lymphoma and glyphosate. Can this study  
05 alone outweigh the positive associations  
06 found in the other epidemiological studies?"

07 A. This is --

08 Q. I haven't -- I won't interrupt  
09 you, I promise, don't interrupt me. I want  
10 to read the answer, and then I have a  
11 question. All right. Thank you, ma'am.

12 "The Agricultural Health Study  
13 has been described as the most powerful  
14 study, but this is not correct."

15 You agree with these 17  
16 scientists that, in fact, the AHS study is  
17 not the most powerful study?

18 A. I don't know what the basis for  
19 why they're not making that -- why they're  
20 making that statement.

21 Q. Well, remember you wrote back  
22 on Exhibit 1-43 years before IARC wrote their  
23 report about Roundup, in 1999 you wrote -- we  
24 looked at yesterday. "Many groups have been  
25 highly critical of the study" -- this is the  
00485:01 Agricultural Health Study -- "as being  
02 flawed."

03 Do you remember writing that?

04 A. I do, but that -- here you're  
05 asking the question from this Q&A from the  
06 IARC that says they're saying the  
07 Agricultural Health Study has been described  
08 as the most powerful study, but this is not  
09 correct.

10 And then they go on to say,



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11 "The weakness of the study is that people  
12 were followed up for a short period of time,"  
13 which means there were fewer cases of cancer  
14 we'd have come to appear.

15 So that has nothing to do with  
16 this particular question and answer from this  
17 one about not being the most powerful study.


18 Q. What the working group tells us  
19 is "the IARC working group also conducted an  
20 objective statistical analysis of the results  
21 of all the available studies on glyphosate  
22 and non-Hodgkin's lymphoma, which concluded  
23 that the AHS and all of the case-control  
24 studies. The data from all the studies  
25 combined show a statistically significant  
00486:01 association between non-Hodgkin's lymphoma  
02 and exposure to glyphosate."

03 That is, in fact, what they  
04 show, isn't it, Dr. Farmer?

05 A. No, I would disagree with that.  
06 Again, you heard earlier from the EPA reports  
07 that those studies were confounded. They  
08 had -- they were confounded with bias and  
09 recall. The increases were not statistically  
10 significant, and that the increase was just  
11 slight and that these studies all had  
12 inherent weaknesses in them.

53. PAGE 486:13 TO 487:12 (RUNNING 00:00:54.912)

13 Q. And I think the jury is going  
14 to want to hear the answer to this question:  
15 How come IARC says it probably causes cancer  
16 and some regulatory agencies say it doesn't  
17 cause cancer? And IARC responded to that

 0302-003 -



18 question on page 3, didn't they, ma'am?

19 A. I haven't seen this document,  
20 so --

21 Q. Well, let's look at it.

22 "Regulatory agencies have  
23 reviewed the key studies examined by IARC,  
24 and more, and concluded that glyphosate poses  
25 no unreasonable risks to humans. What did  
00487:01 IARC do differently?" And they answer this  
02 for us.

03 "Many regulatory agencies rely  
04 primarily on industry data from toxicology  
05 studies that are not available in the public  
06 domain."

07 And that's what happens, right?

08 The EPA looks at your private  
09 data that no one else is allowed to look at  
10 but Monsanto and the EPA.

11 That is exactly what happened,  
12 isn't it?

54. PAGE 487:18 TO 488:20 (RUNNING 00:00:57.250)

18 THE WITNESS: IARC had  
19 available to it -- they did get some  
20 documents from the EPA, but the data  
21 that -- the biggest data set on  
22 glyphosate is with the EPA. And those  
23 are studies that are required by

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24 registrants to provide to the EPA.  
25 And it's based on? The reason why  
00488:01 that IARC doesn't look at those is  
02 based on their own rules and  
03 regulations, and they had availability  
04 to look at the BfR, and they chose not  
05 to, which would have looked at all  
06 those industry studies.  
07 And so I think that there's a  
08 very strong difference here why  
09 they're different. IARC doesn't want  
10 to look at those studies. The  
11 agencies look at those studies and  
12 everything else that IARC did, and  
13 again, they look at whether these  
14 thousand citations are quality studies  
15 or not.  
16 IARC doesn't have a process  
17 where they rule out studies by  
18 irrelevant routes of exposure,  
19 non-animals that aren't relevant to  
20 humans, et cetera.

**55. PAGE 488:22 TO 489:02 (RUNNING 00:00:08.083)**

22 Q. I think you hit the nail on the

 -KE0302-003 - Clear Attached Exhibit 0302-003

23 head.  
24 EPA looks at studies from  
25 industry. IARC looks at studies in the  
00489:01 public domain. That's where we get a  
02 difference?

**56. PAGE 489:07 TO 489:23 (RUNNING 00:00:34.822)**

07 THE WITNESS: And the EPA looks  
08 at all of that in the public domain as  
09 well. They looked at all of those  
10 studies from all of the registrants.  
11 They looked at all of the data in the  
12 open literature. And then when they  
13 reviewed that, they asked for the  
14 relevancy of it. And so they actually  
15 looked at more than IARC did because  
16 they looked at all of the studies as  
17 well as the same studies in the open  
18 literature that IARC did.  
19 QUESTIONS BY MR. MILLER:  
20 Q. Ma'am, we looked at  
21 Exhibit 1-57, they looked at a whopping 53  
22 studies, and IARC looked at a thousand.  
23 Isn't a thousand more than 53?

**57. PAGE 489:24 TO 493:16 (RUNNING 00:03:35.324)**

24 Let's go back. This is  
25 Exhibit 1-57 your counsel showed you on  
00490:01 glyphosate and the EPA report. And we're  
02 going to page 8 and it says this CARC  
03 committee examined one cohort study, seven  
04 nested case-control studies, 25 case-control  
05 studies, also evaluated 11 chronic toxicity  
06 carcinogenicity studies in rats, seven; in  
07 mice, four.  
08 That certainly doesn't add up  
09 to a thousand, does it?



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10 A. Well, let's go back and look  
11 again what's in this thousand.

12 In this thousand are also  
13 looking at exposure, because remember there  
14 were the different groups. So they had  
15 studies that looked at the chemical, that  
16 looked at exposure, that looked at animal  
17 studies, that looked at gene tox, that looked  
18 at epidemiology.

19 The EPA, when they do their  
20 reviews, they look at all of those studies.  
21 And they did a systematic review, and it's  
22 even in their document that talks about it,  
23 even though that they didn't number them,  
24 they did look -- and I think there is a  
25 citation we can find for the EPA that all  
00491:01 that they looked at -- but that is  
02 specifically talking about CARC.

03 And here, they're not telling  
04 you how many animal studies they looked at.  
05 They're not telling you how many gene tox  
06 studies they looked at. They're not telling  
07 you how many epidemiology. They're just  
08 saying a thousand citations.

09 So these aren't all related to  
10 carcinogenicity and genotoxicity.

11 Q. I didn't say all thousand  
12 studies were, but let's find -- I think we  
13 can find common ground here, Dr. Farmer.

14 You agree that industry studies  
15 that are not in the public domain are not  
16 subject to the same scrutiny as studies that  
17 are in the public domain, right?

18 A. I would disagree with you. I  
19 would say they're open to even more scrutiny.  
20 Even though it's not in the same peer review  
21 that you think -- as we talked about, peer  
22 review is not the same all the time. Those  
23 studies EPA requires us to conduct. They  
24 have very specific protocols by which we have  
25 to conduct them and guidelines, right down to  
00492:01 the temperature and the humidity in the room.

02 They then -- EPA then has  
03 access to all of that data, to the raw data,  
04 and they look to see if we have met what is  
05 required of them. So it goes under a very  
06 rigorous peer review by the EPA scientists  
07 themselves. And they have data -- access to  
08 all the data that they can even do  
09 reevaluation on if they choose to.

10 Q. Look, "In the interest of  
11 transparency" -- I'm, again, reading from the  
12 question and answers produced by IARC, "In  
13 the interest of transparency, IARC  
14 evaluations rely only on data that are in the  
15 public domain and available for independent  
16 scientific review."

17 Industry studies that don't get  
18 into the public domain aren't available for  
19 independent scientific review, are they?

20 A. Well, I would disagree with you  
21 on that, because the EPA scientists are the  
22 ones who are doing that independent review.  
23 Those studies required by us. So in addition  
24 to not only what the EPA looks at, we also  
25 look at those out in the open literature.

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00493:01                   And in addition, there have  
02       been publications put out there. If you look  
03       at the Williams of 2000, that has summaries  
04       of our studies that were out there. You look  
05       at the Grime paper, there are summaries of  
06       those studies that are out there.  
07                    But I would disagree with you  
08       that the regulatory studies that we submit  
09       aren't undergoing independent scientific  
10       review. Those are the EPA scientists that  
11       are doing those very critical, extensive  
12       reviews.  
13            Q.       How many EPA scientists have  
14       been hired by Monsanto when they left the  
15       EPA?  
16            A.       I don't know.

**58. PAGE 493:17 TO 494:11 (RUNNING 00:00:47.853)**

17            Q.       Now, you worked with Mary  
18       Matheson the minute she left the EPA, right?  
19                    Manibusan. Do you know who she  
20       is, Mary Manibusan?  
21            A.       I know she was with the EPA,  
22       and she's now with Exponent.  
23            Q.       Yeah.  
24                    And she does work for Monsanto  
25       now, doesn't she?  
00494:01            A.       Again, we're talking about  
02       independent scientific review of these  
03       studies when we submit them to the regulatory  
04       agency. Those are EPA employees that are  
05       doing those reviews at that time.  
06            Q.       My question was: Has Mary gone  
07       to work for Exponent from the EPA, and  
08       Exponent and Mary now do work for Monsanto,  
09       that is true, isn't it, ma'am?  
10            A.       I am not aware -- some people  
11       may be working with Mary, but I am not.

**59. PAGE 494:12 TO 494:17 (RUNNING 00:00:09.220)**


12            Q.       Exponent works with Monsanto,  
13       right?  
14            A.       Yes, we do work with Exponent.  
15            Q.       And she works at Exponent?  
16            A.       That's my understanding she  
17       does, yes.

**60. PAGE 494:18 TO 497:23 (RUNNING 00:02:39.514)**

18            Q.       All right. And you know Jess  
19       Rowland real well, don't you?  
20            A.       I don't know Jess Rowland at  
21       all.  
22            Q.       Do you know who he is?  
23            A.       I know he was with EPA, and he  
24       was the chair of the CARC committee.  
25            Q.       And where is he now?  
00495:01            A.       My understanding is he's  
02       retired.  
03            Q.       Has he offered to do any  
04       consulting work for Monsanto?  
05            A.       I'm not aware of anything.  
06            Q.       Have you e-mailed him since  
07       he's left the EPA?  
08            A.       I never even e-mailed him  
09       before he left the EPA.

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10 Q. Who was the contact with Jess  
11 Rowland at Monsanto?  
12 A. We have our reg affairs  
13 managers in the Washington, DC office. That  
14 would have been Dan Jenkins to my  
15 understanding.

 0302-003 -



16 Q. All right, ma'am.  
17 So "in the interest of  
18 transparency, IARC evaluations rely on data  
19 that are in the public domain and available  
20 for independent scientific review. The IARC  
21 working group evaluation of glyphosate  
22 included any industry studies that met this  
23 criteria."  
24 So if you had studies that were  
25 in the public domain, IARC says they're  
00496:01 willing to look at them, right?  
02 A. They did, uh-huh. That's what  
03 they said.  
04 Q. All right. "With this material  
05 reviewed by the working group, there was  
06 enough evidence to conclude that glyphosate  
07 is probably carcinogenic to humans," right?  
08 A. Yeah. I would like to go back  
09 up to a statement up here. However, they  
10 said that they -- "the IARC working group's  
11 of glyphosate included any industries that  
12 met this criteria [sic]. However, they did  
13 not include data from summary tables, online  
14 supplements to published articles, which did  
15 not provide enough detail for an independent  
16 assessment. This was the case with some of  
17 the industry studies of cancer in  
18 experimental animals."  
19 And I would argue that some of  
20 the studies that they included in their  
21 review actually were less quality than the  
22 studies they had available to them.  
23 Q. But in the interest of  
24 transparency, they would not review them?  
25 A. Well, what I'm saying is they  
00497:01 reviewed some studies that actually were  
02 inadequate, I think, that were -- we had some  
03 studies. They said some of these they didn't  
04 review in experimental animals because it  
05 didn't meet their criteria. I would argue  
06 that those studies had more information than  
07 some of ones that they did include.

 -KE0302-003 - Clear Attached Exhibit 0302-003



08 Q. You testified that glyphosate  
09 went off patent in the year 2000?  
10 A. Yes.  
11 Q. And --  
12 A. In the US.  
13 Q. In the United States, yes,  
14 ma'am.  
15 You further testified that  
16 there are other manufacturers now in the  
17 United States that have registered with EPA?  
18 A. Yes.  
19 Q. Okay. But Monsanto is still

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20 the largest seller of glyphosate in America,  
21 true?  
22 A. I don't know if we're the  
23 largest or not. I know we're one of many.

61. PAGE 497:24 TO 498:13 (RUNNING 00:00:36.887)

24 Q. Ma'am, Roundup sales total over  
25 billions of dollars every year, don't they?  
00498:01 A. I'm in the toxicology group,  
02 not in the financial or the sales group.  
03 Q. You agree that the patent --  
04 that the generic version has to be identical  
05 to the patent version?  
06 A. They have to meet  
07 specifications, yes.  
08 Q. With this 40-year data history  
09 that Monsanto has on glyphosate, has Monsanto  
10 sold that data to other companies that want  
11 to make glyphosate?  
12 A. We have given them access to  
13 our -- some of our data, yes.

62. PAGE 498:20 TO 499:06 (RUNNING 00:00:30.082)

20 Q. Do you think that the CARC  
21 opinion on glyphosate issued right after IARC  
22 reached their opinion was political?  
23 A. No.  
24 Q. Why not?  
25 A. The CARC -- they had -- the  
00499:01 IARC had a different opinion of glyphosate.  
02 Glyphosate is undergoing registration renewal  
03 in the US, so it prompted them to go back and  
04 to look at all of the data, and I think that  
05 that's what they did. They did a scientific  
06 evaluation.

63. PAGE 499:07 TO 499:18 (RUNNING 00:00:28.471)

07 Q. You looked at Exhibit 1-61 and  
08 some e-mails from Dr. Sorahan who was  
09 e-mailing you live from the IARC meetings in  
10 March of 2015.  
11 Do you remember that line of  
12 questions?  
13 A. Yes.  
14 Q. Okay. I have a couple of  
15 follow-ups.  
16 What Dr. Sorahan told you was  
17 that it was a unanimous vote, right? IARC  
18 voted unanimously?

64. PAGE 499:24 TO 501:12 (RUNNING 00:01:31.822)

24 MR. MILLER: Let's get the  
25 exhibit copy.  
00500:01 QUESTIONS BY MR. MILLER:

 0288 -

02 Q. Here you go. Exhibit copy.  
03 All right. Dr. Farmer, you  
04 knew from Dr. Sorahan e-mailing you live from  
05 IARC that it was a unanimous vote. This was  
06 a vote in with no votes against, right?  
07 A. Again, but you're going to the  
08 very bottom of this. The point of his e-mail



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09 was that the animal group had changed their  
10 recommendation, and that, yes, at the very  
11 end that was a -- everyone voted for it.  
12 Q. Unanimous, everyone agreed 17  
13 to 0, that Roundup was a probable human  
14 carcinogen for non-Hodgkin's lymphoma, right?  
15 A. No, that's not what he's saying  
16 they voted for here. They were talking about  
17 the final recommendation as sufficient. And  
18 that appears to me that they were talking  
19 about that that was for the animal group, not  
20 what you just talked about.  
21 Q. You know for a fact that the  
22 vote was 17-0. There was not one dissenting  
23 vote in IARC for the final vote that Roundup  
24 was a probable human carcinogen for  
25 non-Hodgkin's lymphoma. There was no  
00501:01 dissenting vote?  
02 A. I understand that, but, again,  
03 there are a lot of people who completely  
04 disagree with IARC, and we've talked about  
05 that for two days.  
06 Q. We talked about your  
07 BlackBerry, and this e-mail indicates that  
08 "you will have received my earlier BlackBerry  
09 e-mail."  
10 We don't have the BlackBerry  
11 e-mails from Dr. Sorahan. Will you agree to  
12 provide them and discuss that with counsel?

65. PAGE 501:21 TO 502:04 (RUNNING 00:00:17.696)

21 Q. Did you receive BlackBerry  
22 e-mails from Dr. Sorahan as this e-mail  
23 suggests?  
24 A. I have no idea what that  
25 difference would be. I assume they would be  
00502:01 in my -- I didn't get -- I think what he's  
02 saying he has his BlackBerry forward the  
03 e-mails to our e-mail, not that we had  
04 something separate.

66. PAGE 502:05 TO 503:01 (RUNNING 00:00:45.617)

05 Q. Counsel for Monsanto showed you

 2513 -

06 Exhibit 1-59, an article that you wrote with  
07 other employees from Monsanto, right?  
08 A. Yes.  
09 Q. To be clear, this article has  
10 never been published in peer-reviewed  
11 literature, right?  
12 A. We did put out a poster on it,  
13 and that would have been publicly available.  
14 And it is right now, my understanding, being  
15 put into a publication.  
16 Q. Has it been accepted for  
17 publication?  
18 A. No, but it was accepted for a  
19 presentation at a scientific meeting. And we  
20 could get you that poster.  
21 Q. How many journals rejected this  
22 article?  
23 A. It hasn't been submitted yet.  
24 It's in the process of being written up, and





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25 my understanding is it's going to be  
00503:01 submitted somewhere.

**67. PAGE 503:02 TO 504:17 (RUNNING 00:01:46.494)**

02 Q. What year was it written?  
03 A. It was written over a period of  
04 time. That's the draft from 2008.  
05 Q. It was written in 2008, and  
06 here we are eight years later and it's never  
07 been accepted for publication?  
08 A. Well, if you look at that in  
09 2000 and I think it was around 9, the cluster  
10 came through. And so we put some hold-off  
11 until they had their cluster evaluation  
12 because some of this data was included in  
13 that evaluation.  
14 Q. You talked a lot about  
15 regulatory agencies at the government in the  
16 United States, and how they -- if you agreed  
17 with them, if they agreed with you.  
18 What you didn't talk about was  
19 the National Toxicology Program.

 **-KE2513 - Clear Attached Exhibit 2513**




20 Have you heard it?  
21 A. Yes, uh-huh.  
22 Q. Tell the ladies and gentlemen  
23 of the jury what the National Toxicology  
24 Program is.  
25 A. It's a US government agency.  
00504:01 It's just what it says. It's a national  
02 toxicology program. They conduct toxicology  
03 studies and look at toxicology of various  
04 substances.  
05 Q. And you found out that the  
06 National Toxicology Program in the summer  
07 of 2016 was going to look in and investigate  
08 this finding that IARC had made that Roundup  
09 was a probable human carcinogen.  
10 You found out about the NTP  
11 going to do their own investigation, didn't  
12 you?  
13 A. I know the NTP was going to do  
14 some investigations, but I don't think it was  
15 directly related to exactly what you said. I  
16 think there was some more specific studies  
17 that they were going to conduct.

**68. PAGE 505:02 TO 505:03 (RUNNING 00:00:06.951)**

02 Q. Let's take a look at this last  
03 exhibit that I have.

**69. PAGE 505:04 TO 505:08 (RUNNING 00:00:18.822)**

04 Exhibit 1-66, which I hope will

 **0556 -**



05 be the last exhibit to your deposition here  
06 in the two days, a series of e-mails with you  
07 and others about the National Toxicology  
08 Program, and let's take a look at it.

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**70. PAGE 505:09 TO 505:10 (RUNNING 00:00:04.300)**

09                           Let me know when you're ready,  
10    I have a few questions. I have one more

**71. PAGE 505:11 TO 505:11 (RUNNING 00:00:04.717)**

11    exhibit after this, and then we'll wrap up.

**72. PAGE 505:12 TO 506:24 (RUNNING 00:01:23.245)**

12                           Okay. Have you had a chance to  
13    look at it?

14           A.    Uh-huh.

15           Q.    And the whole line of e-mail,  
16    and which you're included in a lot of them,  
17    we'll look at which ones, are about -- and  
18    from September of 2016. Subject matter NTP  
19    will be evaluating glyphosate now,  
20    exclamation point.

21                           Do you see that?

22           A.    Uh-huh.

23           Q.    Okay. So it was important  
24    enough at least for your colleague from  
25    CropLife to put an exclamation point behind  
00506:01   the concept that the National Toxicology  
02    Program was going to be looking into the fact  
03    that IARC had concluded Roundup was a  
04    probable human carcinogen.

05                           It was an important issue,  
06    wasn't it?

07           A.    They -- yes, they indicate that  
08    they think it is an important issue, yes.

09           Q.    And so she e-mails you and  
10    says, "This is something that is going to  
11    need some communication at the 'Hill' level."

12                           She's talking about Capital  
13    Hill, isn't she?

14           A.    I would assume so. Again, I'm  
15    not a government affairs person, I'm the  
16    toxicologist, and so she would be working  
17    with that. So I assume that's what she's  
18    referring to.

19           Q.    Well, whatever she did at the  
20    Hill, the National Toxicology Program  
21    abandoned its research and its study on that  
22    issue.

23                           You're aware of that, aren't  
24    you?

**73. PAGE 507:04 TO 507:08 (RUNNING 00:00:09.946)**

04                           THE WITNESS: I don't believe  
05                           that NTP is stopped. I think they  
06                           still have a program that is going to  
07                           be ongoing as far as I know.

08    QUESTIONS BY MR. MILLER:

**74. PAGE 507:09 TO 509:04 (RUNNING 00:02:06.689)**

09           Q.    When is that -- their report  
10    going to be complete; do you know?

11           A.    The NTP? They haven't even  
12    started their studies yet. From what I  
13    understand, they're in discussion about the  
14    kind of studies and aware of surfactants and  
15    how they have impact in studies. So I don't  
16    know when it will be available.

17           Q.    Your e-mail at the bottom of

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18 the page here on this issue, from Donna  
19 Farmer, in July of 2001, and you had just  
20 found out that Don Stomp from WIL, now  
21 Charles River, some fellow you talked to at  
22 the teratology meetings this week, he told me  
23 he's been selected as a new member of the NTP  
24 board.

25 Who is he, Don Stomp?  
00508:01 A. He is a toxicologist at what  
02 was WIL. It's a contract lab.  
03 Q. I see.  
04 A. And he's a teratologist by  
05 training.  
06 Q. All right. So he would be a  
07 new member of the board. That would be  
08 something important for the CropLife people  
09 to know about?  
10 A. In a sense if you want to know  
11 how the NTP works, would it be an opportunity  
12 for him to be able -- and that was my  
13 conversation with him, is would it be an  
14 opportunity that we could then talk with NTP  
15 and understand what they're going to do, how  
16 they're going to do it, just to have a  
17 contact.  
18 Q. "If you look at the NTP slide  
19 deck, the proposal appears to be an extension  
20 of the IARC monograph. They appear to have  
21 accepted IARC's opinion that glyphosate and  
22 its formulations display two characteristics  
23 of carcinogens: Genotoxicity and oxidative  
24 stress that Ivan Rusyn and Christopher  
25 Portier worked so hard to create and have  
00509:01 been saying in public for months because this  
02 is an area they propose to do research."  
03 Now, that's a mouthful, but I  
04 have a few questions on that.

75. PAGE 509:09 TO 510:16 (RUNNING 00:01:13.645)

09 Q. How did you get access to the  
10 NTP slide decks?  
11 Are they publicly available?  
12 A. Yes.  
13 Q. I see.  
14 All right. And by meaning --  
15 "they appear to have accepted the IARC's  
16 opinion that glyphosate and its formulations  
17 display two key characteristics of  
18 carcinogens: Genotoxicity and oxidative  
19 stress."  
20 Just to be clear, those are the  
21 same two characteristics of carcinogen that  
22 Dr. Parry told you about in 1999, aren't  
23 they?

 -KE0556 - Clear Attached Exhibit 0556



24 A. Again, we've talked about this,  
25 that the studies that we see oxidative stress  
00510:01 and the gene toxicity that we've talked  
02 about, both with IARC and with Professor  
03 Parry, are not due to standard studies.  
04 They're due to irrelevant routes of exposure.  
05 They're due to high-dose exposures. They're  
06 due to many other aspects. And so as we  
07 talked about, we were able to show Dr. Parry

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08 that when you do a normal route of exposure  
09 in real world, you don't then see those  
10 characteristics.  
11 So, yeah, my point here was is  
12 that they -- what I'd like to do is have them  
13 see the basis of the quality of those studies  
14 that those determinations were made from  
15 because I don't believe, again, that it's  
16 applicable to these products.

**76. PAGE 512:02 TO 512:05 (RUNNING 00:00:06.154)**

02 Q. Very well.  
03 But on the issues that I asked  
04 about, you're not an epidemiologist, and  
05 you're not an oncologist?

**77. PAGE 512:08 TO 513:09 (RUNNING 00:00:51.493)**

08 THE WITNESS: As we discussed,  
09 you know, again, science is  
10 multi-faceted, multi-disciplinary. A  
11 lot of people have a different area of  
12 expertise, and that's why we have  
13 different scientists that work with  
14 us.

15 QUESTIONS BY MR. MILLER:

16 Q. And to stop the NTP from  
17 issuing a report, you decided to challenge  
18 them both scientifically and politically?

19 A. Me personally? I think  
20 scientifically we sure can. I don't know  
21 about the political part.

22 Q. Let me rephrase my question.  
23 Monsanto decided to challenge  
24 the NTP scientifically and politically,  
25 right?

00513:01 A. I know scientifically. I'm not  
02 aware of the political aspects, no.


03 Q. Who is Michael Koch?

04 A. That is my -- the head of the  
05 group that I'm in.

06 Q. I see.

07 All right. Last exhibit.  
08 We're going to get this man on his plane on  
09 time. All right.

**78. PAGE 513:13 TO 513:20 (RUNNING 00:00:31.015)**

 0515 -



13 Q. Here is an e-mail from Michael  
14 Koch to William Heydens and David Saltmiras  
15 about this issue.

16 A. I'm not on it.

17 Q. I didn't suggest you were, but  
18 they talk about you. And I want to ask you  
19 if this -- so read it first and I want to  
20 ask.

**79. PAGE 513:24 TO 514:21 (RUNNING 00:00:32.270)**

24 THE WITNESS: Oh, I'm sorry,  
25 yeah.

00514:01 QUESTIONS BY MR. MILLER:

02 Q. All right, ma'am. Thank you.

03 Let's start at the bottom, and this is

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04 produced, you know, from Monsanto.  
05 This is Michael Koch, and you  
06 say he was -- I'm sorry, he was the head of  
07 your department at the time?  
08 A. He is now.  
09 Q. I see, he is now.  
10 Okay. And this is on July 20,  
11 2016. He sends it to David Saltmiras.  
12 And who is David Saltmiras?  
13 A. He's another toxicologist in  
14 our group that supports glyphosate.  
15 Q. Yes, ma'am.  
16 And William Heydens at the  
17 time?

 -KE0515 - Clear Attached Exhibit 0515



18 A. Uh-huh.  
19 Q. Also a toxicologist supporting  
20 glyphosate?  
21 A. Yes.

**80. PAGE 521:15 TO 521:16 (RUNNING 00:00:03.778)**

15 Q. I need you to show me the OPP  
16 exhibit, please. Can I ask you to please

**81. PAGE 521:17 TO 521:19 (RUNNING 00:00:13.948)**

17 look at page 21 of this report, which has  
18 been marked as Exhibit 1-58, just show the  
19 sticker?

**82. PAGE 521:20 TO 523:23 (RUNNING 00:01:40.394)**

20 And then let's just put this  
21 page.  
22 Do you see that page?  
23 A. Yes.  
24 Q. You see the paragraph after the  
25 search terms that starts "after  
00522:01 cross-referencing?  
02 A. Yes.  
03 Q. Do you remember we talked  
04 earlier about the fact that they had  
05 indicated they had looked at literature as  
06 part of the OPP report?  
07 A. Yes, they do.  
08 Q. Okay. Can you read for the  
09 jury what that paragraph says "starting with  
10 after cross-referencing"?  
11 A. "After cross-referencing the  
12 results obtained from three open literature  
13 searches for duplicates, a total of 735  
14 individual articles were obtained in Appendix  
15 A, and one additional study, Alvarez-Moya,  
16 2014, not identified in the search was added  
17 to this list, for a total of 736 individual  
18 articles. All of the studies were evaluated  
19 to determine if the study would be considered  
20 relevant to the issue of concern, i.e., human  
21 carcinogenic potential of glyphosate. Many  
22 of the articles were not considered to be  
23 within the scope of the search or not  
24 considered relevant in general, 658 articles.  
25 Additionally, 27 articles were not  
00523:01 appropriate due to the type of article, i.e.,  
02 correspondence, abstract only, not available

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03 in English, retraction. Of the 51 relevant  
04 articles, 42 were used in the current  
05 evaluation, 31 genotoxicity, 9  
06 epidemiological, and 2 animal  
07 carcinogenicity. Three articles also  
08 reported on the potential of glyphosate and  
09 its metabolites to be developed into  
10 therapeutic drugs for cancer treatment. The  
11 remaining six articles evaluated effects on  
12 glyphosate or glyphosate formulations on  
13 cellular processes mostly focusing on  
14 epidermal cells and were not considered  
15 informative for the current evaluation."

16 Q. So does this document indicate  
17 that the EPA's OPP had considered 736  
18 articles as part of its review?

19 A. Yes, it did.

20 Q. And in addition, they  
21 considered under 2.1.2 studies submitted to  
22 the agency, correct?

23 A. Yes, they did.

**TOTAL: 2 CLIPS FROM 2 DEPOSITIONS (RUNNING 02:25:58.540)**