

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

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IN RE: ROUNDUP PRODUCTS MDL No. 2741
LIABILITY LITIGATION Case No.
16-md-02741-VC

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This document relates to:
ALL ACTIONS

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DEPOSITION OF CHRISTOPHER JUDE PORTIER, Ph.D.
New York, New York
September 5, 2017

Reported by: MARY F. BOWMAN, RPR, CRR
Job No: 128474

September 5, 2017
9:04 a.m.

Deposition of CHRISTOPHER JUDE
PORTIER, Ph.D., held at the offices of
Weitz & Luxenberg, 700 Broadway, New York,
New York, before Mary F. Bowman, a
Registered Professional Reporter, Certified
Realtime Reporter, and Notary Public of the
State of New Jersey.

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<p style="text-align: right;">Page 10</p> <p>1 THE VIDEOGRAPHER: This begins 2 media labeled No. 1 of the 3 video-recorded deposition of 4 Dr. Christopher Portier in the matter 5 of In re: RoundUp Products Liability 6 Litigation, for the United States 7 District Court, Northern District of 8 California. 9 This deposition is being held at 10 700 Broadway in New York, New York on 11 September 5, 2017, at approximately 12 9:04 a.m. 13 My name is Matthew Smith for TSG 14 Reporting, Incorporated. I'm the legal 15 video specialist. 16 The court reporter is Mary Bowman 17 in association with TSG Reporting. 18 Will counsel please introduce 19 yourself for the record. 20 (Whereupon counsel placed their 21 appearances on the audio record. All 22 attorney appearances will be on the 23 final transcript). 24 THE VIDEOGRAPHER: Thank you. 25 Will the court reporter please</p>	<p style="text-align: right;">Page 12</p> <p>1 monograph, correct? 2 MS. GREENWALD: Objection, form. 3 A. The group that IARC brought in, 4 advisors, recommended a few changes to the 5 preamble. 6 Q. For example, the science advisory 7 board that you chaired recommended that 8 IARC place greater weight on mechanistic 9 data in reaching its cancer evaluations, 10 correct? 11 A. The advisory group suggested that 12 the mechanism data that was now becoming 13 available was substantially different than 14 what it was when the first preamble was 15 written and they -- that the preamble 16 needed to be revised to take into account 17 modern mechanistic understanding of cancer. 18 Q. One of the things, for example, 19 that your group recommended was that an 20 agent might be classified as possibly 21 carcinogenic to humans based solely on 22 strong mechanistic data, correct? 23 MS. GREENWALD: Objection, form. 24 A. I don't know. I'd have to see 25 the document to be certain that's the case,</p>
<p style="text-align: right;">Page 11</p> <p>1 swear in the witness. 2 CHRISTOPHER PORTIER, 3 called as a witness by the parties, 4 having been duly sworn, testified as 5 follows: 6 EXAMINATION BY 7 MR. LASKER: 8 Q. Good morning, Dr. Portier. 9 Dr. Portier, you served in May of 10 2005 as the chair of the IARC Science 11 Advisory Board that recommended amendments 12 to the preamble of the IARC monograph 13 series, correct? 14 A. I'm not sure of the date. But 15 the last time they did the preamble, I 16 served as the chair. Actually, I was 17 cochair. 18 Q. And the preamble is the document 19 that sets forth the methodology that IARC 20 working groups are required to follow in 21 reaching their carcinogenicity 22 classifications, correct? 23 A. That is correct. 24 Q. The group that you chaired 25 recommended a number of revisions to the</p>	<p style="text-align: right;">Page 13</p> <p>1 and I'd have to see the previous document 2 to see that it wasn't in the previous 3 preamble. 4 MR. LASKER: Let me -- actually, 5 let me mark both of these. 6 So we will mark as Exhibit 15-1 7 the report of the Science Advisory 8 Group from May of 2005. 9 (Exhibit 15-1, document entitled, 10 "IARC Monographs on Evaluation of 11 Carcinogenic Risks to Humans," marked 12 for identification, as of this date.) 13 MR. LASKER: And then we will 14 mark as 15-2 a document that is labeled 15 "Discussion of Changes in the Draft 16 Preamble," which was prepared the same 17 time -- or following the Science 18 Advisory Board meeting. 19 (Exhibit 15-2, document entitled, 20 "Discussion of Changes to Draft 21 Preamble," marked for identification, 22 as of this date.) 23 Q. Dr. Portier, just to clarify the 24 record, Exhibit 15-1 is the report that 25 your advisory group prepared for IARC,</p>

<p style="text-align: right;">Page 14</p> <p>1 correct?</p> <p>2 MS. GREENWALD: Objection, form.</p> <p>3 A. It does look like the report that</p> <p>4 we prepared for IARC.</p> <p>5 Q. And on the second page of the</p> <p>6 report, in the listing of the participants,</p> <p>7 you are identified as the chair of this</p> <p>8 advisory group, correct?</p> <p>9 A. That is correct. The cochair got</p> <p>10 ill, had to leave on the first date.</p> <p>11 That's why I am listed as the only chair</p> <p>12 and he is not listed.</p> <p>13 Q. If we look at -- and the question</p> <p>14 was about the mechanistic data and some of</p> <p>15 the recommendations of your committee.</p> <p>16 If you could look at Exhibit</p> <p>17 15-2, and particularly at page 7 -- I'm</p> <p>18 sorry.</p> <p>19 15-2 would be the changes,</p> <p>20 Dr. Portier?</p> <p>21 You're looking at 15-1?</p> <p>22 A. Yes. Sorry.</p> <p>23 Q. 15-2 is discussing some of the</p> <p>24 changes following your advisory group</p> <p>25 recommendations.</p>	<p style="text-align: right;">Page 16</p> <p>1 concluded that animal cancer bioassays were</p> <p>2 being used less and less in looking at the</p> <p>3 carcinogenicity of compounds and more and</p> <p>4 more other types of mechanistic studies</p> <p>5 were being used to supplant the need for a</p> <p>6 two-year chronic animal carcinogenicity</p> <p>7 study.</p> <p>8 So that was the basis from which</p> <p>9 the discussion went on to look at the rest</p> <p>10 of it.</p> <p>11 Q. Dr. Portier, my question is a</p> <p>12 simple one.</p> <p>13 A. I know. I'm trying to find it in</p> <p>14 here.</p> <p>15 "Changing the preamble to reflect</p> <p>16 this possibility, also taking into</p> <p>17 account" ...</p> <p>18 Yes, that's exactly what the</p> <p>19 group said.</p> <p>20 Q. So the Science Advisory Board,</p> <p>21 the chair recommended that the preamble be</p> <p>22 amended to mechanistic data alone could</p> <p>23 support a finding of possible</p> <p>24 carcinogenicity, correct?</p> <p>25 MS. GREENWALD: Objection, form.</p>
<p style="text-align: right;">Page 15</p> <p>1 And on page 7, towards the bottom</p> <p>2 of the page --</p> <p>3 A. Yes.</p> <p>4 Q. -- there is a paragraph that</p> <p>5 starts, "The expert workshop recommended in</p> <p>6 the consensus report."</p> <p>7 Do you see that paragraph?</p> <p>8 A. Yes.</p> <p>9 Q. And then there is the sentence:</p> <p>10 "Accordingly, the Advisory Group</p> <p>11 recommended that an agent can be</p> <p>12 characterized as possibly carcinogenic to</p> <p>13 humans based solely on strong mechanistic</p> <p>14 data."</p> <p>15 Correct?</p> <p>16 A. That's what it says.</p> <p>17 Q. And that was one of the</p> <p>18 recommendations of your advisory group?</p> <p>19 A. That's recommendation 12(d).</p> <p>20 MS. GREENWALD: Objection, form.</p> <p>21 A. So the advisory group cites the</p> <p>22 paper by McGregor, et al., which had looked</p> <p>23 at the presence or the ability to have data</p> <p>24 on animal carcinogenicity studies for an</p> <p>25 IARC monograph review, and McGregor</p>	<p style="text-align: right;">Page 17</p> <p>1 A. There is more verbiage to it than</p> <p>2 that.</p> <p>3 Q. But in effect, that was the</p> <p>4 recommendation, correct?</p> <p>5 MS. GREENWALD: Objection, form.</p> <p>6 A. No, there is more verbiage to it</p> <p>7 than that. The verbiage deals with</p> <p>8 extremely strong and strongest from other</p> <p>9 relevant data could potentially be</p> <p>10 classified by IARC in Group 2B.</p> <p>11 Q. OK. I stand corrected.</p> <p>12 A. And to be clear, it says,</p> <p>13 "Similarly, an agent for which there is</p> <p>14 less than sufficient evidence from animal</p> <p>15 studies."</p> <p>16 That means you could have limited</p> <p>17 evidence in animal studies, including</p> <p>18 inadequate evidence, and strong evidence</p> <p>19 from other relevant data could potentially</p> <p>20 be classified in Group 2B.</p> <p>21 So it's important that that is</p> <p>22 linked with the strong data. You can't do</p> <p>23 it just because you have mechanistic data.</p> <p>24 Q. Understood.</p> <p>25 Your advisory group also</p>

<p style="text-align: right;">Page 18</p> <p>1 recommended that the preamble be amended, 2 and if you want to look at pages 6 and 7 of 3 the document, Exhibit 15-2, Discussion of 4 Changes in Draft Preamble, your Science 5 Advisory Board also recommended that the 6 preamble be amended to allow for the 7 finding of sufficient evidence of 8 carcinogenicity in animals based on the 9 results in a single animal study, correct? 10 MS. GREENWALD: Objection, form. 11 Q. And that is on the bottom of 12 page 6, top of page 7. 13 MS. GREENWALD: Objection, form. 14 A. That is correct. 15 The previous preamble required 16 that you have positive results from studies 17 in two separate labs. The new preamble 18 states that results in both sexes of a 19 single species in a GLP study can provide 20 sufficient evidence of carcinogenicity. 21 So you still have to have two 22 positive findings of the carcinogenicity 23 but they don't have to come from two 24 separate laboratories. 25 Q. Your Science Advisory Board also</p>	<p style="text-align: right;">Page 20</p> <p>1 your Science Advisory Board also reaffirmed 2 the preamble's guidelines that IARC working 3 groups could only consider scientific 4 studies in the published literature or 5 publicly available reports from national or 6 international agencies, correct? 7 MS. GREENWALD: Objection, form. 8 A. That is correct. 9 Q. In December of -- 10 A. But I believe that was in the 11 previous preamble as well. We are simply 12 agreeing with the previous preamble. 13 Q. Correct. That was the question. 14 A. Actually, the only change we 15 changed from the previous preamble, what we 16 were changing there was we could use 17 government and international agency 18 documents provided they were publicly 19 available. 20 That was not in the previous 21 preamble. 22 Q. Got it. 23 In December of 2005, you then 24 served on the advisory group that reviewed 25 and largely approved the recommendations</p>
<p style="text-align: right;">Page 19</p> <p>1 endorsed -- page 3 on the changes, 2 Exhibit 15 -- 15-2 -- also endorsed the use 3 of metaanalyses to evaluate the human 4 epidemiological data, correct? 5 A. Can you tell me where it is on 6 here? 7 Q. Page 3, numeral 8 at the bottom. 8 A. Oh, it's right there. 9 Yes. 10 Q. And if you look at -- let me go 11 back to 15-1, which is a report. 12 Page 4 of 5 discusses the fact 13 that your group also reaffirmed the 14 preamble's guidance that IARC working 15 groups could only consider scientific 16 studies in the published literature or 17 publicly available reports from national 18 and international agencies, correct? 19 MS. GREENWALD: Objection, form. 20 A. Do you know which issue this is? 21 Q. Page 4 and 5 in Exhibit 15-1 at 22 the bottom, it says, "Data from 23 monographs"? 24 A. Yes. 25 Q. And again, the question is that</p>	<p style="text-align: right;">Page 21</p> <p>1 that had been made by your Science Advisory 2 Board, correct? 3 MS. GREENWALD: Objection, form. 4 Q. And I can show you the documents 5 if that would make it easier for your call. 6 A. I certainly don't remember that. 7 Please. 8 MR. LASKER: So this will be 9 Exhibit 15-3. 10 (Exhibit 15-3, document entitled, 11 "IARC Monographs on Evaluation of 12 Carcinogenic Risks to Human, Internal 13 Report 6/001," marked for 14 identification, as of this date.) 15 Q. You can turn to the second 16 page -- third page, you will see your name 17 listed as part of the advisory group. 18 A. Yes, but so were many of the 19 others who helped were on the first 20 advisory group. 21 Q. Just so we have a clear record, 22 in December of 2005, you also served on the 23 advisory group that reviewed and largely 24 approved the recommendations made by your 25 earlier Science Advisory Board, correct?</p>

1 MS. GREENWALD: Objection, form.

2 A. There were several pieces to that
3 question. Could you repeat it for me,
4 please.

5 Q. In December of 2005, you served
6 on the advisory group that reviewed and
7 then approved the amendments to the
8 preamble, correct?

9 A. In 2005, I served on two advisory
10 groups. One made recommendations. The
11 second one reviewed the new preamble to
12 make sure that it actually matched the
13 recommendations.

14 Q. From 2013 to 2014, you served as
15 a visiting scientist at IARC, correct?

16 A. From, I believe, October 2013
17 'til April, March 2014, yes.

18 Q. What work were you doing for IARC
19 during this period?

20 A. What work was I doing for IARC
21 during this period?

22 I did several things. There was
23 some joint collaborations on looking at
24 genotoxicity due to a variety of chemicals
25 using proteomics, metabolomics and

1 groups.

2 On the IARC monographs, when they
3 came in to look at mechanistic data, I
4 didn't end up putting those points
5 together. That was done by IARC staff long
6 after I left.

7 Q. Were you paid for your work as a
8 visiting scientist at IARC?

9 A. IARC's visiting scientists are
10 reimbursed for their expenses while they're
11 in Lyon during that period of time. And I
12 was reimbursed for those expenses; however,
13 they were reimbursement of expenses. It
14 was not salary.

15 Q. In April of 2014, you then served
16 as the chair of the IARC advisory committee
17 that designated glyphosate as a medium
18 priority for review for carcinogenicity,
19 correct?

20 MS. GREENWALD: Objection to
21 form.

22 A. In -- was it April of 2014 -- if
23 that's the correct date, I can't be
24 absolutely certain -- in April of 2014, I
25 chaired the IARC working group that looked

1 genomics.

2 I gave a seminar on genomics and
3 genomic issues and some network modeling
4 that allows you to pull up our genomic data
5 and gave talks on that.

6 We worked on a manuscript that
7 was recently published that looked at the
8 ten characteristics of carcinogenesis, so I
9 worked on that.

10 We were working on a review of
11 the model -- of the Monographs 100. The
12 Monographs 100 reviewed all of the known
13 human carcinogens, and we had a couple of
14 questions we wanted to ask from the known
15 human carcinogens, such as how often do
16 cancer seen in the animal match the cancer
17 seen in humans? And other issues along
18 those lines. How many times do rats match
19 mice and how often is a mechanism tied to a
20 specific tumor in humans rather than any
21 tumor in humans?

22 So we were analyzing that data.
23 And then we were using that at the same
24 time to put together some guidance -- some
25 points for guidance for mechanistic work

1 at approximately 200 chemicals that were
2 nominated to the program by outside
3 individuals to see what priority should be
4 placed on evaluating those 200 compounds in
5 the next five years for the IARC.

6 Q. And that group, among other
7 decisions it made, designated glyphosate as
8 a medium priority for review, correct?

9 A. Yes, that group recommended
10 glyphosate for medium priority review.

11 Q. Do you recall who asked you to
12 serve as the chair of that committee?

13 A. I don't remember which member of
14 the staff was running that committee but
15 probably Kurt Straif, the head of the
16 program.

17 Q. At the time you served as the
18 chair of this 2014 advisory committee, you
19 had been serving as well for over a year as
20 a senior scientist for the Environmental
21 Defense Fund, correct?

22 A. I was working one day per week as
23 a senior contributing scientist with the
24 Environmental Defense Fund, yes.

25 Q. The Environmental Defense Fund

1 was founded in the late 1960s in connection
2 with concerns about a pesticide called DDT,
3 correct?

4 MS. GREENWALD: Objection, form.

5 A. I've never spent time looking at
6 the history of the Environmental Defense
7 Fund. So I really have no idea.

8 I've heard the same story as you.

9 Q. So your understanding is the
10 Environmental Defense Fund got started
11 around the issue of the pesticide DDT?

12 MS. GREENWALD: Objection, form.

13 A. Someone has told me that the
14 Environmental Defense Fund began from a
15 group of scientists on Long Island in New
16 York who were trying to get DDT, a terrible
17 environmental toxin, out of the -- out of
18 their water, out of their air.

19 Q. And the Environmental Defense
20 Fund over the ensuing 50 years continued to
21 be active in opposing various pesticides,
22 correct?

23 MS. GREENWALD: Objection, form.

24 A. I have no knowledge of that.

25 Q. During the same time that you

1 person's environment that adhered to the
2 latex -- the special latex that's on the
3 wristband, and then that was in turn
4 evaluated by GC mass spec to find out how
5 much of each of these the people had
6 encountered.

7 Q. Again, the wristband project that
8 the Environmental Defense Fund conducted
9 and you advised on was measuring human
10 exposures to pesticides and other
11 chemicals, correct?

12 MS. GREENWALD: Objection, asked
13 and answered.

14 A. I don't really know if they had
15 pesticides on the list of chemicals they
16 measured. I can remember some of them but
17 I can't remember exactly whether there were
18 pesticides on there. But certainly, there
19 were chemicals on that list.

20 (Exhibit 15-4, e-mail chain,
21 dated October 21, 2015, marked for
22 identification, as of this date.)

23 Q. Dr. Portier, I have provided you
24 with a copy of an e-mail exchange. It
25 starts off as an e-mail exchange between

1 were working with IARC in reviewing
2 glyphosate and other pesticides, you were
3 also working with the Environmental Defense
4 Fund in promoting a wristband project which
5 was seeking to measure human exposures to
6 pesticides and other chemicals, correct?

7 MS. GREENWALD: Objection, form.

8 A. I can't -- I do not know the
9 answer to that question. The time frame is
10 the issue here.

11 Q. So you do recall that you worked
12 with the Environmental Defense Fund on the
13 wristband project, correct?

14 A. But I can't be certain such work
15 was done while I was also at IARC.

16 Q. I understand. I want to see if I
17 get a clear answer to this: You do recall
18 working with the Environmental Defense Fund
19 on their wristband project, correct?

20 A. I do recall advising them on
21 their wristband project, yes.

22 Q. And the wristband project was
23 measuring human exposures to pesticides and
24 other chemicals, correct?

25 A. It was measuring anything in the

1 you and Linda Birnbaum on October 21, 2015.
2 Correct?

3 A. October 21, 2015, to Linda
4 Birnbaum at -- at NIEHS, yes.

5 Q. For the record, who is Linda
6 Birnbaum?

7 A. Linda Birnbaum is the director of
8 the National Institute of Environmental
9 Health Sciences and the director of the
10 National Toxicology Program, former
11 president of the Society of Toxicology, and
12 a lot of other big, important titles.

13 Q. In this e-mail, you discuss two
14 issues with Dr. Birnbaum: One dealing with
15 work you're doing for the Environmental
16 Defense Fund, and the second being work
17 that you're doing in connection with
18 glyphosate, correct?

19 MS. GREENWALD: Objection, form.

20 A. Could you ask the question again,
21 please.

22 Q. Sure.

23 In your e-mail of October 21,
24 2015, you are discussing two issues: One
25 is the work that you are doing for the

<p style="text-align: right;">Page 30</p> <p>1 Environmental Defense Fund, and the second 2 is the work that you have been doing with 3 respect to glyphosate and a European 4 regulatory decision about cancer, correct? 5 MS. GREENWALD: Objection, form. 6 A. Why is there a blacked-out 7 section in this letter? I don't understand 8 that. 9 Q. This was a document that was 10 produced by the government and they blacked 11 it out. 12 A. OK. 13 Anyway, the first paragraph deals 14 with the work I'm doing in Europe on 15 reregistration of glyphosate, which I find 16 fascinating, and the second part deals with 17 the work on wristbands with EDF. 18 MR. LASKER: And then if we can 19 mark as Exhibit 15-5. 20 (Exhibit 15-5, report entitled, 21 "Chem Daily Text Project: New 22 Technology Sheds Light on Chemicals in 23 Our Environment," marked for 24 identification, as of this date.) 25 Q. And this Exhibit 15-5 is the</p>	<p style="text-align: right;">Page 32</p> <p>1 Q. Your affiliation with the 2 Environmental Defense Fund was not 3 disclosed in that April 2014 IARC advisory 4 committee report, correct? 5 MS. GREENWALD: Objection, form. 6 A. Again, could you repeat the 7 question. 8 Q. Sure. 9 April 2014, you served as the 10 chair of the IARC advisory committee that 11 designated glyphosate as a medium priority? 12 A. Correct. 13 Q. Your affiliation with the 14 Environmental Defense Fund was not 15 disclosed in that IARC advisory committee 16 report, correct? 17 MS. GREENWALD: Objection, form. 18 A. The IARC advisory committee 19 report did not list -- well, I'd have to 20 look now. I'd have to see a copy of the 21 report. I'm sorry. 22 Q. Do you recall whether IARC 23 knew -- at the time that you served as 24 chair of their advisory committee, do you 25 know if they knew of your work with the</p>
<p style="text-align: right;">Page 31</p> <p>1 Environmental Defense Fund's report on its 2 wristband project, correct? 3 MS. GREENWALD: Objection, form. 4 A. Yes, I believe this is EDF's 5 report on their wristband testing project. 6 Q. As reflected in this report, the 7 wristband project that you consulted on for 8 Environmental Defense Fund reported results 9 for detections of pesticides as -- if you 10 look at the second page, 12 different 11 pesticides as part of its analysis and the 12 findings of pesticides in 93 percent of the 13 participants, correct? 14 MS. GREENWALD: Objection, form. 15 A. This does then clarify that I 16 couldn't remember if there were pesticides, 17 but yes, obviously, there were pesticides 18 in here. And that the pesticides were seen 19 in -- I have to look and find that 20 percentage. I'm sorry. 21 Q. The first page will show you the 22 percentage in the blocked-out, gray area in 23 the gray box. 24 A. 93 percent detected one or more 25 pesticides, that is correct.</p>	<p style="text-align: right;">Page 33</p> <p>1 Environmental Defense Fund? 2 A. Yes. 3 Q. Shortly after your advisory group 4 designated glyphosate as a medium priority, 5 IARC announced it would be convening a 6 working group to evaluate a number of 7 pesticides for -- to determine whether they 8 could be classified as carcinogens, 9 correct? 10 A. I don't know. 11 MR. LASKER: I'm going to mark 12 as -- we will make this the next two in 13 line, Exhibit 15-6 and 15-7, two 14 notices from IARC announcing upcoming 15 meetings, particularly meeting 112. 16 And for the record, I will 17 represent that these documents were 18 pulled off of IARC's website using 19 something called a Wayback Machine, 20 which allows you to actually date when 21 it appeared on the IARC website. 22 So the first document is dated 23 July 16, 2014, and the second is 24 October 7, 2014. 25 (Exhibit 15-6, IARC announcement,</p>

<p style="text-align: right;">Page 34</p> <p>1 dated July 16, 2014, marked for 2 identification, as of this date.) 3 (Exhibit 15-7, IARC announcement, 4 dated October 7, 2014, marked for 5 identification, as of this date.) 6 MS. GREENWALD: Which is which? 7 MR. LASKER: July 16 is the 6, 8 and October 7 is the 7. So 9 chronological order. 10 Q. So just so we have the timing 11 correct, in April of 2014, your advisory 12 committee designated glyphosate as medium 13 priority, correct? 14 MS. GREENWALD: Objection, form. 15 A. In -- 16 Q. April of 2014. 17 A. -- '14, the advisory group 18 recommended several compounds for high 19 priority and some for medium priority, of 20 which glyphosate is one of the products. 21 Q. And in July of 2014, IARC 22 announced meeting 112, which was going to 23 be focused on organophosphate insecticides, 24 correct? 25 MS. GREENWALD: Objection, form.</p>	<p style="text-align: right;">Page 36</p> <p>1 Q. But just to be clear, glyphosate 2 is not an organophosphate insecticide, 3 correct? 4 A. That is correct. 5 Q. The working group 112, you 6 ultimately were asked to serve as an 7 invited specialist to this committee, 8 correct? 9 A. I was asked to serve as an 10 invited specialist to this committee. I 11 was asked -- yes. 12 Q. Let me ask: Did you ask to serve 13 on the committee or did somebody ask you to 14 serve on the committee? 15 A. I was asked in the normal way 16 that IARC asks people to serve on these 17 committees, by an e-mail sent to me -- 18 first, they call you and say, "Are you 19 interested?" And then they send you an 20 e-mail. 21 Q. Do you recall who asked you to 22 serve as an invited specialist for working 23 group 112? 24 A. No. I really don't recall. It 25 could have been any member of the staff.</p>
<p style="text-align: right;">Page 35</p> <p>1 A. It appears from your Wayback 2 Machine review that that is the date which 3 IARC put up this notice that says, "Some 4 organophosphate insecticides, not 5 specifically glyphosate." 6 Q. And then October 7, 2014, that 7 notice was amended and for meeting 112, 8 they now also include glyphosate to be 9 reviewed, correct? 10 MS. GREENWALD: Objection, form. 11 A. It appears that, from your 12 Wayback Machine, October 7, that that is 13 correct, that in October, IARC appended 14 herbicides to their organophosphate 15 insecticides review. 16 It is not uncommon for IARC to 17 group chemicals when they do reviews if the 18 chemicals have similar behavior or the 19 datasets for the chemicals come from 20 similar sources. 21 So because many people -- many of 22 the epidemiology studies were pesticides 23 and herbicides combined, it makes good 24 sense to do it here because you're 25 reviewing the same epidemiological studies.</p>	<p style="text-align: right;">Page 37</p> <p>1 Q. An invited specialist is someone 2 whom IARC believes has critical knowledge 3 and experience on a matter but has real or 4 apparent conflicts of interest, correct? 5 MS. GREENWALD: Objection, form. 6 A. The definition of an "invited 7 specialist" is part of the preamble. And 8 if what you have just said is a quote from 9 the preamble, then that would be correct. 10 Q. Well, why don't we take a look at 11 the preamble then. 12 A. I don't have it yet. 13 Q. You are about to get it. 14 A. I thought you had given it to me. 15 (Exhibit 15-8, document entitled, 16 "IARC Monographs on the Evaluation of 17 Carcinogenic Risks to Humans Preamble, 18 marked for identification, as of this 19 date.) 20 Q. If you could look at page 4 of 21 the preamble, line 32 to 33 -- they are 22 nice enough to have line numbers for us. 23 A. That is the definition. 24 Q. So invited specialist is someone 25 who IARC believes has critical knowledge</p>

<p style="text-align: right;">Page 38</p> <p>1 and expertise on the matter but who has a 2 real or apparent conflict of interest, 3 correct? 4 A. That is what it says, that is 5 correct. 6 Q. Your conflict of interest arose 7 because of your role with the Environmental 8 Defense Fund, correct? 9 MS. GREENWALD: Objection, form. 10 A. To be clear, it's a perceived 11 conflict of interest, not necessarily a 12 conflict of interest. And they're very 13 clear here on the language that it have -- 14 they talk about apparent or real. 15 In this case, it is a perception 16 that this is a conflict of interest. But 17 yes, that was the perceived conflict of 18 interest that they were concerned about. 19 Q. And you had that same conflict of 20 interest when you served as the chair of 21 the advisory committee that prioritized 22 glyphosate for evaluation, correct? 23 MS. GREENWALD: Objection, form. 24 A. The correct answer to the 25 question is no.</p>	<p style="text-align: right;">Page 40</p> <p>1 glyphosate for review, had you reviewed the 2 science on glyphosate prior to being 3 appointed to working group 112? 4 MS. GREENWALD: Objection to 5 form. 6 A. Prior to being appointed to 7 working group 112, I had not looked at any 8 of the scientific evidence on the 9 carcinogenicity of glyphosate. 10 Q. Let me show you an e-mail that we 11 received from one of the other working 12 group members. 13 MR. LASKER: And we will mark 14 this as 15-9. 15 (Exhibit 15-9, e-mail dated March 16 3, 2015, marked for identification, as 17 of this date.) 18 A. What is this? 19 Q. This is an e-mail that is dated 20 March 3, 2015, which was the beginning of 21 the IARC 112 working group time period. 22 A. OK. 23 Q. The subject line is "E-mail 24 Subgroup 4," which is the subgroup on 25 mechanisms, correct?</p>
<p style="text-align: right;">Page 39</p> <p>1 And here is why that's the 2 correct answer to the question as you asked 3 it: The 2014 meeting was an advisory 4 group, not a monograph meeting. So it 5 doesn't work under the same rules as the 6 preamble. So that's case No. 1. 7 But IARC does give you a form 8 that you have to fill out for potential 9 conflicts of interest for every meeting. 10 For that meeting, because it was 11 an advisory group, and because I was only 12 doing work with the Environmental Defense 13 Fund on issues related to air pollution and 14 climate change and hydraulic fracking, in 15 my opinion, I did not think it was a 16 conflict of interest, and therefore, I did 17 not list it. 18 Q. And do you recall, sitting here 19 today, whether during that period in April 20 of 2014, you had begun consulting with the 21 Environmental Defense Fund on the wristband 22 project? 23 A. I do not recall. 24 Q. Aside from your role on the 25 advisory committee that prioritized</p>	<p style="text-align: right;">Page 41</p> <p>1 A. That would usually -- yes, that 2 would be it. 3 Q. And this is creating an e-mail 4 tree of the members on this subcommittee, 5 correct? 6 A. That appears to be the case, yes. 7 Q. And you were included as one of 8 the individuals working on subgroup 4 at 9 working group 112, correct? 10 A. That is correct. 11 Q. Were you assigned by IARC to work 12 with the mechanism subgroup? 13 A. Yes, I was. 14 Q. Were you tasked with preparing 15 any analyses before the actual physical 16 meeting in Lyon? 17 A. No, I was not. 18 Q. We have a couple of other e-mails 19 between the mechanistic subgroup members I 20 would like to ask you about. 21 (Exhibit 15-10, e-mail dated 22 March 4, 2015, marked for 23 identification, as of this date.) 24 Q. This March 4, 2015 e-mail, again, 25 to members of subgroup 4, and you're</p>

<p style="text-align: right;">Page 42</p> <p>1 included, correct, as a recipient of this 2 e-mail?</p> <p>3 A. Yes, I'm included, and yes, it's 4 an e-mail to it appears to be subgroup 4 5 with a copy to Kate Guyton.</p> <p>6 Q. This March 4, 2015 e-mail to you 7 and the other mechanism folks attached an 8 early draft of Sections 4.6 and a summary 9 of 4.5 for each of the four chemicals being 10 reviewed, including glyphosate, correct?</p> <p>11 MS. GREENWALD: Objection, form.</p> <p>12 A. It seems to say that Section 4.6 13 in summary of 4.5, two- or-three sentence 14 summary, was attached.</p> <p>15 Q. And Dr. Martin is providing you 16 all with this summary to provide folks with 17 something to include in their respective 18 4.6 sections, correct?</p> <p>19 MS. GREENWALD: Objection, form.</p> <p>20 A. I don't know.</p> <p>21 Q. The last clause --</p> <p>22 A. Oh, I see, yes, Section 4.6 is 23 the summary of the Section 4 evaluation.</p> <p>24 Q. And were you working on one of 25 the 4.6 sections?</p>	<p style="text-align: right;">Page 44</p> <p>1 group 112, correct?</p> <p>2 MS. GREENWALD: Objection, form.</p> <p>3 A. This is an e-mail. It deals with 4 the work of Section 4 during the IARC 5 monograph.</p> <p>6 Q. During the working group 112, did 7 you spend all of your time when the meeting 8 was not in plenary session with the 9 mechanism subgroup?</p> <p>10 A. No.</p> <p>11 Q. What other subgroups did you -- 12 well, let me ask this: Did you go from 13 different subgroup to different subgroup 14 during the meeting?</p> <p>15 A. No. I spent a short period of 16 time with the animal carcinogenicity 17 subgroup.</p> <p>18 Q. Do you recall when that was?</p> <p>19 A. No, I do not recall.</p> <p>20 Q. Did they ask for you to help them 21 out or did you decide on your own to spend 22 some time with them?</p> <p>23 A. They asked for me to help them 24 out.</p> <p>25 Q. Do you recall what specifically</p>
<p style="text-align: right;">Page 43</p> <p>1 A. No, I don't write any of the 2 sections in the IARC monograph.</p> <p>3 MR. LASKER: We also have a March 4 6, 2015 e-mail. This will be 5 Exhibit 15-11.</p> <p>6 (Exhibit 15-11, e-mail dated 7 March 6, 2015, marked for 8 identification, as of this date.)</p> <p>9 Q. And this is a -- this e-mail is 10 from Kathryn Guyton, and she is with the 11 IARC staff, correct?</p> <p>12 A. Uh-huh. Yes.</p> <p>13 Q. And there is an e-mail to you and 14 other subgroup 4 working group folks again 15 talking about the work that the mechanistic 16 subgroup was doing during this period, 17 correct?</p> <p>18 MS. GREENWALD: Objection, form.</p> <p>19 A. It's a complicated question.</p> <p>20 Q. OK, I'm not sure it's complicated 21 but I'll ask it again.</p> <p>22 This e-mail between you and the 23 other individuals working on the mechanism 24 subgroup was part of the work that was done 25 during that week on mechanisms at working</p>	<p style="text-align: right;">Page 45</p> <p>1 they asked you to help them with?</p> <p>2 A. Yes, I do.</p> <p>3 Q. What was that?</p> <p>4 A. The topic dealt with the, I 5 believe, kidney tumors in the Knezevich 6 and -- I forget the name of the authors -- 7 rat study, and the question had to deal 8 with historical controls.</p> <p>9 Q. So just to be clear, is this a 10 Knezevich rat study or a Knezevich mouse 11 study?</p> <p>12 A. I guess Knezevich I'm hoping was 13 a mouse study and it's -- the mouse study. 14 Sorry.</p> <p>15 There are so many studies, I get 16 confused.</p> <p>17 Q. Do you recall specifically what 18 their question was with respect to 19 historical controls?</p> <p>20 A. The question was did this tumor 21 appear to be significant because of the 22 historical control population that had been 23 identified, and then, also, where could 24 they get code to do a trend test on that 25 particular data.</p>

<p style="text-align: right;">Page 46</p> <p>1 Q. Did you provide them with the --</p> <p>2 did you advise them as to where they could</p> <p>3 find code to conduct a trend test on the</p> <p>4 data?</p> <p>5 A. I gave them some suggestions of</p> <p>6 where to look. I was unaware of any place</p> <p>7 where it could be found, if I recall -- if</p> <p>8 I recall correctly.</p> <p>9 Q. Did you assist in calculating</p> <p>10 the -- the trend test that appears for that</p> <p>11 study in the IARC monograph?</p> <p>12 MS. GREENWALD: Objection, form.</p> <p>13 A. I'm not sure what you're asking</p> <p>14 me.</p> <p>15 Q. The IARC --</p> <p>16 A. The p-value was obtained from a</p> <p>17 program identified by one of the members in</p> <p>18 either that subgroup or the mechanism</p> <p>19 subgroup, and that person ran the code.</p> <p>20 Q. Do you recall who that was?</p> <p>21 A. I think it -- I'd have to see a</p> <p>22 list of the authors of the monograph and I</p> <p>23 could probably pull -- I'm terrible with</p> <p>24 names -- I could probably pull it from the</p> <p>25 list.</p>	<p style="text-align: right;">Page 48</p> <p>1 assessment of the data.</p> <p>2 Do you recall that?</p> <p>3 MS. GREENWALD: Objection, form.</p> <p>4 A. At every IARC monograph meeting</p> <p>5 about midweek there were presentations from</p> <p>6 each of the working groups as to where they</p> <p>7 are and where they think the decisions are</p> <p>8 going.</p> <p>9 Q. Let me show you copies of some</p> <p>10 handwritten notes that we received from</p> <p>11 Dr. Matthew Ross from Mississippi State.</p> <p>12 MR. LASKER: And we will mark</p> <p>13 this as next in line. It's 15-12.</p> <p>14 (Exhibit 15-12, handwritten notes</p> <p>15 dated 3/6/15, marked for</p> <p>16 identification, as of this date.)</p> <p>17 Q. Dr. Ross was a member of the</p> <p>18 mechanism subgroup with you, correct?</p> <p>19 MS. GREENWALD: Objection, form.</p> <p>20 A. Dr. Ross was a member of the</p> <p>21 mechanism subgroup.</p> <p>22 Q. Now, on the last page of these</p> <p>23 notes, Dr. Ross has written some notes</p> <p>24 about what was being said about glyphosate</p> <p>25 at this meeting. And --</p>
<p style="text-align: right;">Page 47</p> <p>1 Q. Did you review the statistical</p> <p>2 analysis after it was conducted?</p> <p>3 A. Yes, I did.</p> <p>4 Q. While you were at the monograph</p> <p>5 meeting?</p> <p>6 A. Yes, I did.</p> <p>7 Q. And did you verify that that</p> <p>8 analysis was conducted correctly?</p> <p>9 MS. GREENWALD: Objection, form.</p> <p>10 A. I verified that the approximate</p> <p>11 p-value from the Armitage linear trend test</p> <p>12 that was run in that analysis appeared to</p> <p>13 be correct.</p> <p>14 Q. Did you understand at the time</p> <p>15 that that was an approximate trend test?</p> <p>16 MS. GREENWALD: Objection, form.</p> <p>17 A. I did not know it either way.</p> <p>18 Q. Did you attend any of the plenary</p> <p>19 suggestions that was conducted during that</p> <p>20 week for working group 112?</p> <p>21 A. All of them.</p> <p>22 Q. And about midway through the</p> <p>23 week, there was a -- there was a</p> <p>24 presentation before the plenary in which</p> <p>25 the subgroups provided their initial</p>	<p style="text-align: right;">Page 49</p> <p>1 A. Where is this?</p> <p>2 Q. This would be the last page, the</p> <p>3 bottom half of the page. Do you see</p> <p>4 group 1, group 2, group 3, group 4, with</p> <p>5 listings for glyphosate?</p> <p>6 It's going to be the last page of</p> <p>7 the document.</p> <p>8 A. Yes, I do see that.</p> <p>9 Q. And there are notes for</p> <p>10 subgroup 1, which is for exposure data,</p> <p>11 correct?</p> <p>12 A. Correct.</p> <p>13 Q. And there's a notation here,</p> <p>14 "Detectable in water and food."</p> <p>15 Do you recall that discussion?</p> <p>16 MS. GREENWALD: Objection, form.</p> <p>17 A. Not specifically. But it is</p> <p>18 normal.</p> <p>19 Q. And then there is a note for</p> <p>20 subgroup 2 for human data, correct?</p> <p>21 MS. GREENWALD: Objection, form.</p> <p>22 A. There appears to be a note on</p> <p>23 glyphosate in human data under group 2.</p> <p>24 Q. And Dr. Ross' notes indicate that</p> <p>25 subgroup 2 stated that glyphosate was</p>

<p style="text-align: right;">Page 50</p> <p>1 negative NHL, and then says, "Case control 2 glyph" with an arrow "NHL," and then a 3 notation, "AHS negative data," correct? 4 MS. GREENWALD: Objection, form. 5 A. That's exactly what it says. 6 Q. And "AHS" is referring to the 7 Agricultural Health Study, correct? 8 MS. GREENWALD: Objection, form. 9 A. I can't presume that. 10 Q. Do you recall whether there was 11 discussions at the Agricultural Health 12 Study during this working group meeting? 13 A. Of course there were discussions 14 of the Agricultural Health Study during 15 this meeting. 16 Q. With respect to group 3 -- 17 subgroup 3, that is the animal subgroup, 18 correct? 19 A. That is correct. That's -- if 20 this note pertains to that, yes. 21 Q. And Dr. Ross wrote down that the 22 animal subgroup said that the animal 23 carcinogenicity data for glyphosate was 24 limited to inadequate, correct? 25 MS. GREENWALD: Objection, form.</p>	<p style="text-align: right;">Page 52</p> <p>1 conduct their analysis and then after the 2 first few days of the subgroup meeting, 3 correct? 4 MS. GREENWALD: Objection, form. 5 A. In a typical IARC monograph 6 meeting, midway through the week, the 7 animal group would have gone through each 8 of the papers together, discussed problems 9 with the paper, and were beginning to think 10 about where they would go with the call, 11 that is correct. 12 Q. Do you recall yourself voicing 13 any objections to the animal group's 14 preliminary assessment of the glyphosate 15 data? 16 A. At this point? 17 I might have -- I wouldn't have 18 voiced concern at their calling it 19 "limited." But I might have voiced concern 20 at their interpretation of one or two of 21 the studies. 22 Q. Let me show you another e-mail we 23 received from Dr. Ross. 24 (Exhibit 15-13, e-mail dated 25 March 11, 2015, marked for</p>
<p style="text-align: right;">Page 51</p> <p>1 A. It -- he has written a note that 2 says, "Glyphosate - limited to inadequate." 3 Q. "Limited" and "inadequate" are 4 both defined terms in the IARC preamble, 5 correct? 6 A. For the animal data, yes. 7 Q. Do you recall a presentation 8 during a plenary session in working 9 group 112 where the animal subgroup was 10 discussing the animal data for glyphosate 11 as being limited to inadequate? 12 MS. GREENWALD: Objection, form. 13 A. I can't recall. 14 Q. You don't recall one way or the 15 other? 16 A. No. This is a preliminary -- if 17 he is taking notes from the preliminary 18 meeting, it's just a preliminary meeting. 19 And so I have no clue as to -- I mean, it's 20 typical to have these discussions in 21 plenary midweek. 22 Q. And just so the record is clear, 23 this would have been a presentation by the 24 animal subgroup after the period of time 25 that it had taken prior to the meeting to</p>	<p style="text-align: right;">Page 53</p> <p>1 identification, as of this date.) 2 Q. Dr. Portier, Exhibit 15-13 is an 3 e-mail from Ivan Rusyn initially to -- it 4 doesn't have a "To" line here but it is 5 discussing convening group 4 downstairs in 6 the first coffee break on March 9, 2015. 7 Do you recall attending a meeting 8 of group 4 -- March 9, just to refresh your 9 recollection, will be the second-to-last 10 day of the IARC working group meeting. 11 Do you recall attending a coffee 12 break meeting of the mechanism subgroup on 13 March 9, 2015? 14 MS. GREENWALD: Objection, form. 15 A. There is no way I could recall a 16 small submeeting at an IARC monograph 17 meeting and whether I was in attendance or 18 not. 19 Q. Do you recall discussions with 20 respect to whether or not glyphosate should 21 be classified as 2B or 2A under the IARC 22 classification scheme? 23 A. Could you ask the question again? 24 I want to be clear I got that question 25 right.</p>

1 Q. Do you recall discussions during
2 the working group meeting with members of
3 group 4 as to whether or not glyphosate
4 should be classified as 2B, possible
5 carcinogen, or 2A, probable carcinogen?

6 A. I was specifically not allowed to
7 do that.

8 So the answer to that question
9 is: As an invited expert, I would have not
10 encouraged in one way or the other on any
11 of the -- any of the final listings, but I
12 would have talked about the science and the
13 interpretation of that science.

14 Q. Would you have talked about
15 whether or not the -- in your opinion, the
16 mechanistic data was strong so as to
17 allow -- and I recognize you wouldn't have
18 continued in the next step -- but so as to
19 allow under the preamble glyphosate to be
20 moved from 2B to 2A?

21 MS. GREENWALD: Objection to
22 form.

23 A. I specifically remember the
24 discussions that group had relative to the
25 strength of the evidence for mechanisms for

1 working group ultimately decided that the
2 animal data was sufficient for glyphosate,
3 is that correct?

4 MS. GREENWALD: Objection, form.

5 A. I can't be certain that's the way
6 it actually worked.

7 Q. You were at the meeting, do you
8 recall that's how it worked?

9 A. I don't recall. I've seen cases
10 where the entire working group has changed
11 the recommendation in the plenary session
12 before. I can't remember.

13 Q. Following the working group
14 meeting, the working group's conclusions
15 were published in an article in The Lancet,
16 correct?

17 A. Very brief summary, abstract more
18 than anything else, yes.

19 Q. Does IARC have an arrangement
20 with The Lancet to publish abstracts of its
21 meetings?

22 A. Yes, they do.

23 Q. This happens shortly after the
24 meetings are concluded, correct?

25 A. That is correct.

1 glyphosate, and I clearly remember keeping
2 my mouth shut. Because I was an invited
3 specialist and that was my job.

4 Q. Do you recall that as of March
5 9 -- so this would be three days after the
6 notes we looked at from Dr. Ross -- the
7 animal subgroup had -- was classifying the
8 data -- the animal data as for glyphosate
9 as limited?

10 MS. GREENWALD: Objection, form.

11 A. So IARC monographs are owned
12 completely by the entire working group.
13 And so the animal carcinogenicity working
14 group would make a recommendation.
15 However, the entire working group has to
16 agree or conclude or concur with that
17 recommendation. Otherwise, it can change.

18 As you can see in this case, Ivan
19 Rusyn had concerns about limited evidence
20 in animals, but yes, up to March 9, it
21 appears that the animal working group was
22 going to recommend limited.

23 Q. Just so I understand the process,
24 the animal subgroup recommended that the
25 animal data was limited, but the full

1 Q. Just so I understand the process,
2 this is not a peer-reviewed article that
3 appears in The Lancet correct?

4 MS. GREENWALD: Objection, form.

5 A. I actually do not understand the
6 way in which Lancet reviews this article.
7 So I can't answer the question.

8 MR. LASKER: Let me mark as next
9 in line 15-14.

10 (Exhibit 15-14, e-mail dated
11 March 13, 2015, marked for
12 identification, as of this date.)

13 Q. Here is an e-mail March 13, 2015
14 to you and other members of the working
15 group from Kathryn Guyton asking for
16 comments on the draft article that was to
17 appear in Lancet about the working
18 group 112 meeting, correct?

19 MS. GREENWALD: Objection, form.

20 A. This is an e-mail from Kathryn
21 Guyton sending a draft of the document that
22 will be going into Lancet Oncology and
23 asking for these members of the working
24 group to review it for clarity.

25 Q. Do you recall if you reviewed the

<p style="text-align: right;">Page 58</p> <p>1 draft and provided any comments?</p> <p>2 A. I'm pretty certain I would have</p> <p>3 read it. I don't recall if I provided</p> <p>4 comments.</p> <p>5 Q. You agree that your involvement</p> <p>6 in the IARC working group on glyphosate had</p> <p>7 the appearance of being a conflict of</p> <p>8 interest, correct?</p> <p>9 MS. GREENWALD: Objection, form.</p> <p>10 That's not his testimony.</p> <p>11 A. The fact is that IARC felt it was</p> <p>12 a potential or a perceived conflict of</p> <p>13 interest. That is the fact. My opinion</p> <p>14 doesn't matter.</p> <p>15 Q. Well, my question though is about</p> <p>16 your opinion.</p> <p>17 You do agree that your</p> <p>18 involvement in the IARC working group on</p> <p>19 glyphosate has the appearance of being a</p> <p>20 conflict of interest, correct?</p> <p>21 MS. GREENWALD: Objection.</p> <p>22 A. I'm having a tough time with the</p> <p>23 question. I've never really thought about</p> <p>24 it.</p> <p>25 Do I think I had a conflict of</p>	<p style="text-align: right;">Page 60</p> <p>1 European Food Safety Authority.</p> <p>2 Q. You registered your company as a</p> <p>3 lobbyist in Europe so you could lobby</p> <p>4 against glyphosate reregistration, didn't</p> <p>5 you?</p> <p>6 MS. GREENWALD: Objection, form.</p> <p>7 A. No, I did not.</p> <p>8 Q. Let's take this in steps.</p> <p>9 A. Sure.</p> <p>10 Q. You did lobby -- you did register</p> <p>11 your company as a lobbyist in Europe,</p> <p>12 correct?</p> <p>13 A. No, I did not. At least as far</p> <p>14 as they told me I did not.</p> <p>15 Q. Who is "they"?</p> <p>16 A. Go ahead and put it in and I'll</p> <p>17 explain.</p> <p>18 MR. LASKER: This is</p> <p>19 Exhibit 15-15.</p> <p>20 (Exhibit 15-15, printout from</p> <p>21 LobbyFacts, marked for identification,</p> <p>22 as of this date.)</p> <p>23 Q. Dr. Portier, this is a document</p> <p>24 put out by LobbyFacts EU, which notes that</p> <p>25 your company, C. Portier Consultations, was</p>
<p style="text-align: right;">Page 59</p> <p>1 interest? No. But would others</p> <p>2 potentially see it as a conflict of</p> <p>3 interest? Of course, yes.</p> <p>4 Q. So you do --</p> <p>5 A. Some others, not all others.</p> <p>6 Some others.</p> <p>7 Q. So just to be clear, you do agree</p> <p>8 that your participation in working group</p> <p>9 112 on glyphosate has the appearance of</p> <p>10 being a conflict of interest?</p> <p>11 MS. GREENWALD: Objection, form.</p> <p>12 A. As I said before, I agree with</p> <p>13 the statement that some people would</p> <p>14 perceive it as a conflict of interest.</p> <p>15 Q. A few months after IARC reached</p> <p>16 its causation determination, the issue of</p> <p>17 whether glyphosate can cause cancer was</p> <p>18 considered by European regulators, correct?</p> <p>19 A. I am sorry, what was the first</p> <p>20 part of that sentence?</p> <p>21 Q. Some months after IARC reached</p> <p>22 its causation determination, the issue of</p> <p>23 whether glyphosate can cause cancer was</p> <p>24 considered by European regulators, correct?</p> <p>25 A. Specifically considered by the</p>	<p style="text-align: right;">Page 61</p> <p>1 at least thought to be registered, if not</p> <p>2 registered, as a lobbyist in Europe in</p> <p>3 connection with the reregistration decision</p> <p>4 for glyphosate, correct?</p> <p>5 MS. GREENWALD: Objection, form.</p> <p>6 A. I -- there are so many parts to</p> <p>7 that, I have no idea.</p> <p>8 Would you like me to tell you</p> <p>9 what this is?</p> <p>10 Q. Let me first go through the</p> <p>11 document.</p> <p>12 On the second page of the</p> <p>13 document, it talks about a C. Portier</p> <p>14 Consultations registration on EU</p> <p>15 transparency register, and the issue was</p> <p>16 registration of the pesticide glyphosate,</p> <p>17 correct?</p> <p>18 A. It says something like that.</p> <p>19 Q. And the office that's listed here</p> <p>20 is the Office of C. Portier Consultations,</p> <p>21 correct?</p> <p>22 A. It's my home address.</p> <p>23 Q. And at least according to this</p> <p>24 source, your company was registered in</p> <p>25 Europe to consult on a reregistration of</p>

<p style="text-align: right;">Page 62</p> <p>1 the pesticide glyphosate, correct?</p> <p>2 MS. GREENWALD: Objection, form.</p> <p>3 A. That is not my understanding.</p> <p>4 Q. What is your understanding?</p> <p>5 A. We were asked by the commissioner</p> <p>6 of health -- four of the scientists who</p> <p>7 participated in a -- who were coauthors of</p> <p>8 a letter sent to the commissioner</p> <p>9 concerning the quality of the review done</p> <p>10 on glyphosate by the European Food Safety</p> <p>11 Authority.</p> <p>12 The commissioners' staff told us</p> <p>13 that we could not -- we would have to</p> <p>14 register to come in and talk to the</p> <p>15 commissioner because everybody has to</p> <p>16 register. They gave us a particular space</p> <p>17 to fill it in on the EC website.</p> <p>18 I went to that spot, I filled</p> <p>19 this in as they asked me to fill it in,</p> <p>20 since I had to come up with a title for the</p> <p>21 company, or -- because the thing wouldn't</p> <p>22 take nothing in that spot, I called it C.</p> <p>23 Portier Consultations, for lack of a better</p> <p>24 term.</p> <p>25 The day after I entered this, the</p>	<p style="text-align: right;">Page 64</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. I don't exactly know how to</p> <p>3 answer that question because I don't know</p> <p>4 what their rules specifically are. All I</p> <p>5 did was respond to what the staffer told me</p> <p>6 I had to do.</p> <p>7 Q. In any event, after this</p> <p>8 discussion, you then did appear and speak</p> <p>9 with European Parliament, European</p> <p>10 regulators, about glyphosate, correct?</p> <p>11 A. That's too complicated a question</p> <p>12 for me to answer.</p> <p>13 I met with very specific people.</p> <p>14 The head of the -- the health commissioner</p> <p>15 for European Commission and several of his</p> <p>16 staff members. I think one of them was a</p> <p>17 regulator but I can't be absolutely</p> <p>18 certain.</p> <p>19 There was interaction on my part</p> <p>20 with EU parliamentary members and there was</p> <p>21 interaction on my part with other members</p> <p>22 of parliament and conferences at various</p> <p>23 other national authorities.</p> <p>24 Q. On early November of 2015, you</p> <p>25 reached out to other members of the IARC</p>
<p style="text-align: right;">Page 63</p> <p>1 staffer called back and said, I have this</p> <p>2 all wrong. I'm sorry. You can come see</p> <p>3 the commissioner because all you want to</p> <p>4 talk about is scientific issues. You're</p> <p>5 not lobbying on behalf of a company.</p> <p>6 You're all academics. You don't have to do</p> <p>7 this, but I had already done it.</p> <p>8 Q. Just so I understand, you were</p> <p>9 told by the staff European -- a staffer on</p> <p>10 the European Commission --</p> <p>11 A. Yes.</p> <p>12 Q. -- that you didn't have to</p> <p>13 register because you were not presenting</p> <p>14 your views on behalf of any private entity,</p> <p>15 is that correct?</p> <p>16 MS. GREENWALD: Objection, form.</p> <p>17 A. They -- they told us we were not</p> <p>18 lobbyists and this list was for lobbyists,</p> <p>19 and therefore, we did not need to register.</p> <p>20 That was the crux of the conversation.</p> <p>21 Q. The reason you didn't have to</p> <p>22 register is because you were not providing</p> <p>23 information -- or you were not talking to</p> <p>24 the European regulators on behalf of any</p> <p>25 private -- other private entity, correct?</p>	<p style="text-align: right;">Page 65</p> <p>1 working group to help you in your</p> <p>2 discussions with the European regulators,</p> <p>3 correct?</p> <p>4 MS. GREENWALD: Objection, form.</p> <p>5 A. At some point before that letter</p> <p>6 went out, I asked other scientists to --</p> <p>7 who were interested to join me in writing</p> <p>8 the letter.</p> <p>9 MR. LASKER: Let's mark this as</p> <p>10 Exhibit 15-16.</p> <p>11 (Exhibit 15-16, e-mail chain</p> <p>12 dated 11/9/2015, marked for</p> <p>13 identification, as of this date.)</p> <p>14 Q. Exhibit 15-16 at the bottom of</p> <p>15 the first e-mail in the chain is an e-mail</p> <p>16 that you sent to a number of other</p> <p>17 scientists dated November 9, 2015 regarding</p> <p>18 the EFSA review of glyphosate, correct?</p> <p>19 A. That appears to be what it is.</p> <p>20 MS. GREENWALD: Eric, the Bates</p> <p>21 is cut off the bottom. Do you know</p> <p>22 what it is? It doesn't appear on this</p> <p>23 document.</p> <p>24 MR. LASKER: I don't. We will</p> <p>25 get that for you. I don't have it.</p>

<p style="text-align: right;">Page 66</p> <p>1 MS. GREENWALD: Thank you.</p> <p>2 Q. In this e-mail, you were telling</p> <p>3 these other scientists that the European</p> <p>4 Food Safety Agency was going to conclude</p> <p>5 that glyphosate has no carcinogenic</p> <p>6 potential, correct?</p> <p>7 A. I believe I read that, yes.</p> <p>8 Q. And you were telling these</p> <p>9 individuals that this created two problems</p> <p>10 in your view: That it might weaken the</p> <p>11 IARC monograph program, and suggest that</p> <p>12 the IARC working group did not adequately</p> <p>13 review all of the data, correct?</p> <p>14 MS. GREENWALD: Objection, form.</p> <p>15 A. No.</p> <p>16 Q. You stated and quoted</p> <p>17 specifically then, that EFSA's</p> <p>18 determination that glyphosate had no</p> <p>19 carcinogenic potential created two</p> <p>20 problems: One that it weakens the strength</p> <p>21 of the IARC monograph program to stimulate</p> <p>22 change in how some of these agents are</p> <p>23 reviewed and addressed.</p> <p>24 And the second is that it</p> <p>25 suggests we did not do our assessment</p>	<p style="text-align: right;">Page 68</p> <p>1 well.</p> <p>2 Q. You state in your e-mail to these</p> <p>3 scientists, "I do not intend to let this</p> <p>4 happen." Correct?</p> <p>5 A. I do not intend to let the</p> <p>6 strength of the IARC monograph program to</p> <p>7 stimulate change in how these agents are</p> <p>8 reviewed happen, and I do not intend to let</p> <p>9 it happen that people said we did our</p> <p>10 estimate wrong.</p> <p>11 Q. On November 11, 2015, you sent a</p> <p>12 follow-up e-mail to a broader group of</p> <p>13 recipients, again raising the same concern</p> <p>14 about the EFSA's conclusion that glyphosate</p> <p>15 does not cause cancer, correct?</p> <p>16 MS. GREENWALD: Objection, form.</p> <p>17 (Exhibit 15-17, e-mail chain</p> <p>18 dated November 11, 2005, marked for</p> <p>19 identification, as of this date.)</p> <p>20 A. OK, what is your question now?</p> <p>21 Q. On November 11, you sent a</p> <p>22 follow-up e-mail to a broader group of</p> <p>23 recipients, again raising concerns about</p> <p>24 EFSA's conclusion that glyphosate did not</p> <p>25 cause cancer, correct?</p>
<p style="text-align: right;">Page 67</p> <p>1 adequately and that had we seen all the</p> <p>2 data they saw, they would have gotten -- we</p> <p>3 would have gotten a different answer,</p> <p>4 correct?</p> <p>5 MS. GREENWALD: Objection, form.</p> <p>6 That wasn't what he testified.</p> <p>7 A. No, it was not read exactly, but</p> <p>8 the point of my saying "no" before is you</p> <p>9 said I said it would weaken the IARC</p> <p>10 monograph program.</p> <p>11 That's not what this says. It</p> <p>12 says it weakens the strength of the IARC</p> <p>13 monograph program to stimulate change.</p> <p>14 That's not weakening the program.</p> <p>15 Q. And then the second concern that</p> <p>16 you had is that it would suggest that the</p> <p>17 work that we did -- and by "we," you are</p> <p>18 talking about working group 112, correct?</p> <p>19 A. Yes, I guess so.</p> <p>20 Q. That if we did not do our</p> <p>21 assessment adequately, and if we had seen</p> <p>22 all the data, we would have gotten a</p> <p>23 different answer, correct?</p> <p>24 A. In fact, this suggestion was all</p> <p>25 over, from EFSA, from PF4, from others as</p>	<p style="text-align: right;">Page 69</p> <p>1 MS. GREENWALD: Objection to</p> <p>2 form.</p> <p>3 A. That would be incorrect.</p> <p>4 I raised concerns about</p> <p>5 scientific flaws in the BFR addendum. I am</p> <p>6 concerned that the serious flaws of the BFR</p> <p>7 addendum, if not challenged, can continue</p> <p>8 to be used by regulatory agencies to</p> <p>9 dismiss critical science pertinent to</p> <p>10 regulatory decisions.</p> <p>11 Q. You are asking this broader group</p> <p>12 of scientists to join you in a letter to be</p> <p>13 sent to the European regulators about</p> <p>14 glyphosate, correct?</p> <p>15 A. That is correct.</p> <p>16 MR. LASKER: Why don't we take a</p> <p>17 break?</p> <p>18 MS. GREENWALD: That's up to you.</p> <p>19 Yeah, OK.</p> <p>20 THE VIDEOGRAPHER: The time is</p> <p>21 10:19 a.m. We're off the record.</p> <p>22 (Recess.)</p> <p>23 THE VIDEOGRAPHER: The time is</p> <p>24 10:34 a.m. We are on the record.</p> <p>25</p>

1 BY MR. LASKER:

2 Q. Dr. Portier, before the break, we
3 were talking about some e-mails that you
4 had sent to some scientists in November of
5 2015.

6 Do you recall that?

7 A. Are you -- you're talking about
8 document 15-17?

9 Q. Yes. And 15-16.

10 A. Could you read the question
11 again -- restate the question.

12 Q. All I asked is we were talking
13 about e-mails that you had sent to
14 scientists --

15 A. We were talking about these two
16 documents.

17 Q. -- in November 2015.

18 A. We were talking about these two
19 documents, correct.

20 Q. As of the time you sent these
21 e-mails, you had been signed on as an
22 expert consultant for plaintiffs' counsel
23 in this litigation for more than seven
24 months, correct?

25 MS. GREENWALD: Objection, form.

1 Q. You did not disclose in your
2 e-mail to these other scientists asking you
3 to join you in this letter the fact that
4 you were a paid consultant for plaintiffs'
5 counsel in this litigation, did you?

6 MS. GREENWALD: Objection, form.

7 A. The draft document has a -- what
8 is it at the end -- the manuscript has a
9 thing at the end that says if anybody has
10 any conflicts of interest, and that was
11 already, as far as I remember, in the
12 draft.

13 But the letter itself does not
14 disclose that.

15 Q. Well, let's take this one step at
16 a time.

17 The e-mail that you sent to these
18 other scientists -- or the two e-mails you
19 sent to these other scientists asking them
20 to join you in this letter does not
21 disclose the fact that you had been working
22 as a paid consultant for plaintiffs'
23 counsel in the litigation, correct?

24 A. The e-mail had an attachment.
25 The attachment was the draft of the letter.

1 A. I can't be certain of the exact
2 amount of time.

3 MR. LASKER: Let's mark as the
4 next document in line, which is 15-18.
5 (Exhibit 15-18, letter dated
6 March 29, 2015, marked for
7 identification, as of this date.)

8 Q. Dr. Portier, these are documents
9 that you produced to us in response to our
10 requests -- document requests for this
11 deposition.

12 And as set forth in this cover
13 letter, or this first letter, you signed an
14 engagement letter signing up as an expert
15 consultant with plaintiffs' counsel in this
16 litigation on March 29, 2015, correct?

17 A. That is correct.

18 Q. So that would be more than seven
19 months before?

20 A. I just wasn't sure of the dates.
21 I'm sorry.

22 Q. So this is about seven months or
23 so before you sent those e-mails out that
24 we were just looking at, correct?

25 A. Probably, yeah.

1 I believe the attachment had the conflict
2 of interest to it on the draft, but I'm not
3 certain.

4 Q. Let's look at the letter that you
5 actually sent.

6 MR. LASKER: We will mark this as
7 Exhibit 15-19.

8 (Exhibit 15-19, letter dated
9 November 27, 2015, marked for
10 identification, as of this date.)

11 Q. This is the letter that was
12 ultimately sent -- the open letter that was
13 sent by you and the individuals you had
14 asked to join you to
15 Commissioner Andriukaitis, European
16 Commission?

17 A. Yes.

18 Q. This November 27, 2015 letter
19 also does not disclose the fact that you
20 had signed on as a paid consultant with
21 plaintiffs' counsel in this litigation,
22 correct?

23 A. That appears to be the case.

24 Q. So neither the e-mails that you
25 sent to these other scientists asking you

1 to join you in the letter to the European
2 regulators or the letter you actually sent
3 to the European regulators in November of
4 2015, disclosed the fact that you had been
5 working with plaintiffs' counsel in this
6 litigation for over seven months, correct?

7 MS. GREENWALD: Objection to
8 form.

9 A. That is a complicated question.
10 Could you simplify it for me.

11 Q. We will take it in parts.

12 The two e-mails that you sent in
13 November of 2015 to the scientists asking
14 you to join you in this letter to the
15 European regulators regarding glyphosate
16 does not disclose the fact that you had
17 been working as a private consultant for
18 plaintiffs' counsel in this litigation,
19 correct?

20 MS. GREENWALD: Objection, form.

21 A. Letter 15-17 and 15-16 do not say
22 that I'm consulting with these law firms.

23 Q. And the open letter that you sent
24 to the European Commission on November 27,
25 2015, also does not disclose the fact that

1 A. I don't know to what degree my
2 discussions with them become confidential,
3 so I'm at a loss here.

4 Q. I'm not going to ask you about
5 the actual substance of the conversations,
6 although that's a separate issue, not a
7 privilege issue, but my question right now
8 is dates.

9 When did you --

10 A. So that was with Mr. Lundy, in
11 answer to your question.

12 Q. And you had been working with
13 Mr. Lundy on other matters prior to March
14 2015, is that correct?

15 A. As far as I recall, yes.

16 Q. Were you -- for those other
17 matters, have you been disclosed as a
18 testifying expert in connection with those?

19 A. I'm not a testifying expert in
20 those.

21 Q. Do you know if your involvement
22 in that litigation has been publicly
23 disclosed?

24 A. That I do not know.

25 Q. How long prior to March 2015 had

1 you had been working for over seven months
2 as a paid consultant for plaintiffs'
3 counsel in this litigation, correct?

4 A. That is correct.

5 Q. You signed on as a private
6 consultant for plaintiffs' counsel nine
7 days -- within nine days of the publication
8 of The Lancet article announcing IARC's 2A
9 classification of glyphosate, correct?

10 A. Where is the date of that again?

11 Q. We can show that to you.

12 A. Here it is, March 29 of 2015.

13 That appears to be the case.

14 Q. When did you first speak with
15 plaintiffs' counsel about working with them
16 as an expert in this litigation?

17 A. March 20 -- soon -- before March
18 29.

19 I was already working with
20 counsel --

21 Q. OK, so when were you --

22 A. -- on something different.

23 Q. So when did you -- let's ask
24 that.

25 So this is with Mr. Lundy?

1 you been working with Mr. Lundy?

2 A. I don't know. Maybe two months.

3 Q. When do you recall -- and
4 obviously, it's going to be sometime --
5 would it be fair to say sometime between
6 March 20, when the IARC classification was
7 announced, and March 29, when you had a
8 conversation with Mr. Lundy about working
9 as an expert in the glyphosate litigation?

10 MS. GREENWALD: Objection to
11 form.

12 A. The answer is that's not correct.

13 Q. When did you have your first
14 conversation with Mr. Lundy about working
15 as an expert for plaintiffs in glyphosate
16 litigation?

17 A. Sometime prior to this agreement
18 here. Maybe a few days. I have no idea.

19 But the IARC monograph finding
20 was announced the day the monograph closed.
21 The publication was later.

22 Q. Do you recall whether you had
23 your first conversation with Mr. Lundy
24 before or after The Lancet article was
25 published?

1 A. No.
 2 Q. It could have been before, could
 3 have been after, you don't recall?
 4 A. Don't recall.
 5 Q. Is the other matter that you are
 6 working with or -- with Mr. Lundy related
 7 to a -- and you don't have to identify the
 8 substance, but a substance that has been
 9 part of an IARC review for carcinogenic?

10 A. There have been many substances
 11 for review by IARC for carcinogenicity,
 12 this one included.

13 Q. So the other work you're doing
 14 for Mr. Lundy also involves an
 15 IARC-reviewed substance, is that correct?

16 A. That is correct.

17 Q. You had -- in your retention
 18 agreement on March 29, 2015, it notes that
 19 you will be working both with Mr. Lundy and
 20 with Ms. Greenwald for Weitz & Luxenberg,
 21 correct?

22 And her name is specifically
 23 mentioned on I think page 3 of the
 24 agreement.

25 A. Yes.

1 29, 2015, correct?

2 A. Correct.

3 Q. You agreed in March 29 -- and
 4 this is on page 3 of your engagement
 5 letter -- to work under the exclusive
 6 direction of three attorneys at the Lundy
 7 Lundy law firm, and Robin Greenwald of
 8 Weitz & Luxenberg, correct?

9 MS. GREENWALD: Objection, form.

10 Q. That's No. 6.

11 MS. GREENWALD: Objection.

12 A. No. 6 says I will be working
 13 under the exclusive direction of Hunter
 14 Lundy, Matthew Lundy and Kristie Hightower
 15 with Lundy, Lundy, Soileau & South, and
 16 Robin Greenwald with Weitz & Luxenberg.

17 Q. You agreed on March 29, 2015 --
 18 and this is No. 7 on -- numeral 7 on page
 19 3 -- that any and all work product created
 20 by you or on your behalf in whole or in
 21 part during the course of this engagement
 22 authorized by these attorneys shall be
 23 considered a work for hire and the property
 24 of the firms, correct?

25 A. That is correct.

1 Q. Have you worked with
 2 Ms. Greenwald or her firm prior to this
 3 time?

4 A. No.

5 Q. Just one other question with
 6 respect to the other consulting work with
 7 Mr. Lundy.

8 The other matter, is that -- does
 9 that involve a substance for which you had
 10 served on the IARC working group?

11 A. Define "substance"?

12 Q. The issue that you're consulting
 13 with them -- the other issue that you are
 14 consulting with, does that involve
 15 exposures that were reviewed by IARC on a
 16 working group that you were part of?

17 A. Yes.

18 Q. So pursuant to the terms of your
 19 agreement with your March 29, 2015 letter,
 20 your engagement with plaintiffs' counsel
 21 began on March 29, 2015 and has continued
 22 through to the present, correct?

23 A. Yes.

24 Q. You were paid a \$5,000 retainer
 25 by plaintiffs' counsel on or about March

1 Q. You agreed on March 29, 2015,
 2 in -- on page 3, numeral 4, that you would
 3 not do any other work related to glyphosate
 4 outside the specifics of the litigation
 5 without the written consent of the
 6 plaintiffs' attorneys, correct?

7 A. It says, "I will not accept any
 8 RoundUp or glyphosate-related engagement
 9 with any law firm that is party to RoundUp
 10 and/or glyphosate-related litigation
 11 without their written consent."

12 Q. You also agreed on March 29,
 13 2015 -- and this is on page 2 -- that you
 14 would not disclose your work for
 15 plaintiffs' counsel to media organizations,
 16 trade journals, professional publications,
 17 members of the public or other purported
 18 experts, correct?

19 MS. GREENWALD: Objection, form.

20 Q. That's No. 3.

21 MS. GREENWALD: Same objection.

22 A. No. 3, sorry.

23 Now, your question again, please.

24 Q. You agreed on March 29, 2015,
 25 that you would not disclose your work for

1 plaintiffs' counsel to media organizations,
2 trade journals, professional publications,
3 members of the public or other purported
4 experts, correct?

5 A. Correct.

6 Q. You agreed to retain the
7 plaintiffs' lawyers to represent you if
8 anyone sought to compel you to disclose
9 this information, correct?

10 A. I believe that's what part C
11 says.

12 Q. And you began billing plaintiffs'
13 counsel for your time as of -- and this is
14 the first invoice attached -- June 17,
15 2015, correct?

16 A. Yes.

17 Q. You had a meeting on June 17,
18 2015 with Mr. Lundy, and then a second
19 meeting with Mr. Lundy and Ms. Greenwald on
20 June 19, 2015, correct?

21 A. That is correct.

22 Q. On October 19, 2015, you sent
23 plaintiffs' counsel an invoice for your
24 work on their behalf from June of 2015 to
25 October of 2015, correct?

1 Q. During the entire period of time
2 in which you have had conversations with
3 U.S. and European regulators about
4 glyphosate, you have been a paid consultant
5 for plaintiffs' counsel in this litigation,
6 correct?

7 MS. GREENWALD: Objection, form.

8 A. Yes.

9 Q. Now, you attached to your expert
10 report some submissions that you have made
11 to European regulators and to the EPA in
12 the United States in opposition to the
13 decisions or findings by those agencies
14 that glyphosate does not cause cancer,
15 correct?

16 A. The -- if I remember the letters
17 correctly, they are raising scientific
18 concerns about the way in which these
19 particular agencies reviewed the evidence
20 for glyphosate and cancer.

21 Q. These submissions that you have
22 made to the regulators contain much of the
23 same scientific analyses that you have
24 included in your expert report in this
25 litigation in support of the plaintiffs,

1 A. Yes.

2 Q. And you have been working as a
3 paid consultant for plaintiffs' counsel
4 throughout the entire time that you have
5 had discussions with regulators in the
6 United States and in Europe about
7 glyphosate, correct?

8 MS. GREENWALD: Objection, form.

9 A. Again, I have to get that
10 question in my head here.

11 Since March 29, 2015, I have been
12 working with counsel.

13 Q. So during the entire period of
14 time in which you have had conversations
15 with U.S. regulators and European
16 regulators about glyphosate, you have been
17 a retained expert for plaintiffs' counsel
18 in this litigation, correct?

19 MS. GREENWALD: Objection, form.

20 A. The e-mails, discussions and
21 everything else that I sent to the
22 regulators is not part of the work I have
23 done for this law firm.

24 Q. That was not my question.

25 A. OK, what was your question again.

1 correct?

2 MS. GREENWALD: Objection, form.

3 A. I -- it's not correct.

4 Q. So is it -- let me ask this: In
5 your submissions to the European regulators
6 and U.S. regulators, you represented pooled
7 analyses of animal cancer bioassays,
8 correct?

9 A. Yes, correct.

10 Q. And you present those same pooled
11 analyses in your expert report in this
12 litigation, correct?

13 MS. GREENWALD: Objection, form.

14 A. No, not correct.

15 Q. You have revised them over the
16 course of time, correct?

17 MS. GREENWALD: Objection, form.

18 A. I have revised the way in which I
19 do the pools analyses over time.

20 Q. And you have submitted different
21 pooled analyses to the regulators over
22 time, correct?

23 A. That is correct.

24 Q. And you have submitted pooled
25 analyses also in your expert report,

1 correct?

2 A. That is correct.

3 Q. And some of the pooled analyses
4 in your expert report you are continuing to
5 use in your submissions to the regulators,
6 correct?

7 MS. GREENWALD: Objection to
8 form.

9 A. That isn't correct.

10 Q. You have not presented any of the
11 information from your -- any of your
12 analyses in the expert report to
13 regulators?

14 A. You're proposing a sequence of
15 events that is not correct.

16 Q. Not my question.

17 A. I know it's not your question,
18 but the answer to the question has to do
19 with the sequence of the events.

20 Pooled analyses were done for my
21 letters to the regulators and others with
22 these data.

23 That was done prior to any expert
24 report I prepared for this litigation.

25 Q. But both those pooled analyses

1 answer that part of it.

2 Clearly in the letter you have
3 given me, that was not in there.

4 Q. The letter I gave you was the
5 European regulators, correct?

6 A. The first letter I sent.

7 MR. LASKER: Let's mark as
8 Exhibit 15-20.

9 (Exhibit 15-20, attachment to the
10 expert report, marked for
11 identification, as of this date.)

12 Q. And this was one of the
13 attachments to your expert report in this
14 litigation and a submission that you made
15 to the EPA on October 4, 2016.

16 A. OK.

17 Q. You begin your submission to EPA
18 in October of 2016 with a disclaimer,
19 correct?

20 A. This work was done with my own
21 research and on my own time. Yes.

22 Q. And you state -- you told the
23 EPA, and anyone else who was looking at
24 your submissions, that you had, quote,
25 received no reimbursement for any of these

1 were conducted after you had been retained
2 as a private expert for plaintiffs' counsel
3 in this litigation, correct?

4 MS. GREENWALD: Objection, form.

5 A. What was the term you used for
6 there?

7 Q. Your pooled analyses that you
8 submitted to the U.S. and European
9 regulators were prepared after the time
10 that you signed on as a paid expert for
11 plaintiffs' counsel in this litigation,
12 correct?

13 MS. GREENWALD: Objection, form.

14 A. A paid consultant and/or expert,
15 yes.

16 Q. The submissions that you made --
17 strike that.

18 In your submissions to these
19 regulators, the letters that you submitted,
20 you do not disclose your relationship with
21 plaintiffs' counsel as an expert in private
22 litigation against Monsanto, do you?

23 MS. GREENWALD: Objection, form.

24 A. I do not recall in my letters to
25 EPA whether I did such a thing. I can't

1 comments, correct?

2 A. That's correct.

3 Q. And during this same time period,
4 you were publicly proclaiming that, quote,
5 nobody has paid me a cent to do what I am
6 doing with glyphosate. I have no conflict
7 whatsoever, correct?

8 MS. GREENWALD: Objection, that
9 is not what this says.

10 Q. Let's look at this document.

11 MR. LASKER: We will mark this
12 15-21.

13 (Exhibit 15-21, document
14 entitled, "Oh Brother, CropLife
15 Questions, Makeup of Glyphosate Panel,"
16 marked for identification, as of this
17 date.)

18 Q. Dr. Portier, this is an article
19 dated October 12, 2016, entitled, "Oh
20 Brother, CropLife Questions, Makeup of
21 Glyphosate Panel."

22 Do you see that?

23 A. Yes, I do.

24 Q. This is discussing the EPA's
25 evaluation of glyphosate, correct?

1 MS. GREENWALD: Objection, form.

2 A. This is an article by Steve
3 Davies discussing CropLife questioning the
4 makeup of the glyphosate panel.

5 Q. On the second page of this
6 document, at the bottom of the page, there
7 is an -- you have been interviewed and
8 there's some various statements you have
9 made regarding glyphosate, correct, in the
10 panel?

11 A. I'm sorry?

12 Q. At the bottom of the second page,
13 there is various discussions, comments that
14 you have made to the reporter in connection
15 with this article, correct?

16 MS. GREENWALD: Objection, form.

17 A. This pertains to the work I did
18 part time for the Environmental Defense
19 Fund, and it's conceivable the reporter got
20 this quote out of context.

21 So I can't -- I can't tell you
22 whether certainly I got it or not. I've
23 been misquoted many times.

24 Q. The quote in this article that is
25 attributed to you in October of 2016 is,

1 "Nobody has paid me a cent to do what I am
2 doing with glyphosate," and "I have no
3 conflict of interest whatsoever," on the
4 bottom of the page.

5 Do you see that?

6 MS. GREENWALD: Objection, form.

7 A. That -- those two sentences are
8 on the bottom of the page.

9 Q. Did you ever have any follow-up
10 discussion with this reporter telling him
11 you misquoted me?

12 A. I have no problem -- probably
13 not. I'd never do that.

14 Q. Prior to your submissions to EPA
15 in October of 2016, you had, of course, in
16 fact, been paid by plaintiffs' counsel to
17 assist them in the glyphosate litigation
18 against Monsanto, correct?

19 A. Prior to my submissions to EPA in
20 October of 2015 -- yes.

21 Q. And as of October 2016, when you
22 were quoted in this article as telling the
23 world that you had no conflict whatsoever,
24 you, in fact, had been consulting with
25 plaintiffs' counsel in this litigation for

1 more than 18 months, correct?

2 MS. GREENWALD: Objection,
3 assumes facts not in evidence and form.

4 Q. You can answer.

5 MS. GREENWALD: You can answer.
6 I have my objection on the record.

7 A. Repeat the question now.

8 Q. As of October '16 -- October
9 2016, when you were quoted in this article
10 as stating that you had no conflicts
11 whatsoever, you had, in fact, been
12 consulting with plaintiffs' counsel in the
13 glyphosate litigation against Monsanto for
14 more than 18 months, correct?

15 MS. GREENWALD: Objection. Same
16 objection as before.

17 A. At the time this quote in this
18 article is written, I was working with
19 counsel, yes.

20 Q. And had been working with them
21 for more than 18 month, correct?

22 MS. GREENWALD: Same objection.

23 A. That is correct.

24 Q. And when you were quoted in this
25 article as saying nobody had paid you a

1 cent for what you are doing with
2 glyphosate, you had by that time sent
3 plaintiffs' counsel three separate invoices
4 for your glyphosate work in litigation
5 against Monsanto, correct?

6 MS. GREENWALD: Objection, form.

7 A. The work being referred to here
8 was the analyses and evaluations and
9 reading of the regulatory documents, for
10 which nobody paid me.

11 Q. So it is your testimony that
12 plaintiffs' counsel did not pay you to
13 review the regulatory documents?

14 A. They were paying me to provide
15 them with advice and consulting. Until
16 they decided that I would be an expert
17 witness, there was nothing they were
18 requiring me to read or review except an
19 occasional paper they would send me.

20 Q. Let me ask you to look at
21 Exhibit 15-18. It is the retention
22 agreement and attached exhibits.

23 A. Yes.

24 Q. And if you look at page 7 of this
25 document, it's the invoice dated June 30,

1 2016, correct?

2 A. Page 7?

3 June 30, 2016, there is here June
4 30, 2016.

5 Q. And this invoice is four months
6 before you submitted -- had your submission
7 to the EPA, correct?

8 A. Yes.

9 Q. And in this invoice, you are
10 charging -- or you're billing plaintiffs'
11 counsel for your work in reading and
12 evaluating the EPA's glyphosate documents,
13 correct?

14 A. That's what it says. I stand
15 corrected from my previous statement.

16 Q. So plaintiffs' counsel had paid
17 you to evaluate EPA's glyphosate document,
18 correct?

19 A. That's what it appears to say.

20 Q. And after being paid by
21 plaintiffs' counsel to evaluate the EPA
22 document, you then made submissions to EPA,
23 correct?

24 A. But not the evaluation I made for
25 plaintiffs' counsel.

1 it said happened four months, I guess, or
2 so after my being paid by plaintiffs'
3 counsel to evaluate the EPA risk
4 assessment, that is correct.

5 Q. And by that time, you had, in
6 fact, sent three separate invoices to
7 plaintiffs' counsel for your work in the
8 glyphosate litigation, correct?

9 MS. GREENWALD: Objection, form.

10 A. By what time again?

11 Q. October of 2016?

12 A. October 2016.

13 Yes, I had sent three invoices.

14 Q. As of June 2017, which is the
15 last invoice we have, you have billed
16 plaintiffs' counsel somewhere over \$160,000
17 for your work in preparing your analyses of
18 glyphosate, correct?

19 MS. GREENWALD: Objection, form.

20 A. I -- I have no idea what the
21 total is, but maybe. It's a substantial
22 amount of money.

23 Q. And since -- the last invoice we
24 have is dated, as I said, I guess it's June
25 18, 2017, through the time -- through June

1 Q. Dr. Portier, let me just ask the
2 question again.

3 Four months after being paid by
4 plaintiffs' counsel to evaluate the EPA's
5 glyphosate document --

6 A. I submitted --

7 Q. -- you made submissions to EPA
8 regarding your evaluation of their
9 assessment, correct?

10 MS. GREENWALD: Objection, form.

11 A. Four months after -- I provided
12 an evaluation of EPA's assessment to them,
13 correct.

14 Q. As of -- just to go back to the
15 question that was pending, as of October of
16 2016, when you were quoted in this article
17 as stating that nobody had paid you a cent
18 for what you were doing with glyphosate,
19 you had by that time submitted three
20 separate invoices to plaintiffs' counsel
21 billing them for your work on glyphosate,
22 correct?

23 MS. GREENWALD: Objection, form.

24 A. The quote that was in that
25 newspaper article that says what you said

1 13, 2017, and then we have a -- one invoice
2 for an airplane ticket.

3 You have continued to do work on
4 this litigation subsequent to June 13,
5 2017, correct?

6 You prepared your rebuttal
7 report?

8 A. I've done work since then, that
9 is correct.

10 Q. And I take it you have not yet
11 billed plaintiffs' counsel for that
12 additional work?

13 A. Is that privileged?

14 Q. No.

15 A. No?

16 No, I have not.

17 Q. Do you have an approximate amount
18 of time outstanding for your bill for
19 plaintiffs' counsel?

20 A. Approximate?

21 No. I mean, I have an exact
22 somewhere.

23 Q. Have you done more than 20 hours
24 of work on your rebuttal report?

25 A. Yeah.

1 Q. Have you done more than 40 hours
2 of work on your rebuttal report?

3 A. Maybe not.

4 Q. So we have somewhere on the order
5 of another \$15,000 maybe, or is it more?

6 You don't know?

7 A. I don't know. I don't really pay
8 much attention to it.

9 Q. Pursuant to the expressed terms
10 of your engagement letter with plaintiffs'
11 counsel, the work that you did and that you
12 were paid for in evaluating the EPA
13 assessment of glyphosate is "work for hire
14 and the property of the plaintiffs' law
15 firms," correct?

16 MS. GREENWALD: Objection to
17 form.

18 A. Let me be clear: I think there
19 is a mistake here -- and this is my
20 mistake, I should have pointed it out
21 earlier -- this is a different EPA
22 glyphosate document than the one that I was
23 complaining about in October. This is a
24 different document.

25 This was a single, two-page

1 release from the Clark subgroup of EPA
2 about glyphosate that appeared, I think, in
3 March or June or April of 2016, whereas the
4 comments made later that year were on EPA's
5 draft risk assessment.

6 Q. Let's go back to the June 30,
7 2016 e-mail.

8 You said this was reviewing a
9 two-page document?

10 A. June 30 --

11 Q. 2016 invoice.

12 A. It's a two- or three-page
13 technical document, yes.

14 Q. You have billed plaintiffs'
15 counsel for 19 hours in reviewing that
16 document, is that correct?

17 A. Yes.

18 Q. So you spent 19 hours reviewing a
19 two-page document?

20 MS. GREENWALD: Objection to
21 form.

22 A. If you have the document, we can
23 look at that time, but it is a very
24 technical document. It requires that you
25 go back and look at the animal experiment,

1 experimental evidence. It required me
2 going back to look at the epidemiology
3 experimental evidence. It takes time to
4 give a good scientific response.

5 Q. So in connection with this work
6 and evaluating the EPA glyphosate document,
7 you spent 19 hours with -- doing an
8 extensive dive into the glyphosate science,
9 is that your testimony?

10 MS. GREENWALD: Objection to
11 form.

12 A. It's one memo. I spent 19 hours
13 researching it.

14 Q. And pursuant to the terms of your
15 engagement letter, this 19 hours you spent
16 in evaluating glyphosate and evaluating the
17 EPA, this EPA assessment was work for hire
18 and the property of plaintiffs' law firm,
19 correct?

20 MS. GREENWALD: Objection, form.

21 A. I lost you on that question.

22 Q. Let's go back to the engagement
23 letter, the beginning of this document, and
24 on page 3, numeral 7, it says, any and all
25 work product created by you or on your

1 behalf in whole or in part during the
2 course of this engagement authorized by
3 this committee shall be considered a work
4 for hire and the property of the
5 plaintiffs' law firms, correct?

6 A. This speaks of work product. It
7 doesn't speak of knowledge gained.

8 Q. Is the work that you were paid
9 for in evaluating EPA assessment of the 19
10 hours --

11 A. That wasn't the EPA assessment.
12 It was a memo.

13 Q. In evaluating, as you say in your
14 invoice, the EPA glyphosate document, that
15 is work for hire and intellectual property
16 of the plaintiff law firm, correct?

17 MS. GREENWALD: Objection.

18 That's not his testimony. He
19 asked and answered it.

20 A. No. The work product from that
21 would be the property of the law firm.

22 Q. Is it your testimony that the 19
23 hours that you spent in assessing the
24 scientific data in connection with this EPA
25 document did not play any role whatsoever

<p style="text-align: right;">Page 102</p> <p>1 in the submissions or the analyses that you 2 presented in your submissions to EPA and to 3 the European regulators? 4 MS. GREENWALD: Objection, form. 5 A. Intellectual knowledge gained in 6 any endeavor can obviously carry over into 7 the next endeavor. I can't possibly give 8 you a "no" answer to such a question. 9 The work product from that 10 evaluation is the property of this firm and 11 it was subsequently given to them. 12 Q. And the work product that your 13 evaluation, for which you were paid by 14 plaintiffs' law firm in or about June 2016, 15 that work also folded -- was folded into 16 the submissions that you provided to the 17 EPA and to the European regulators, 18 correct? 19 MS. GREENWALD: Objection, form. 20 A. No. 21 Q. Is it your testimony that you did 22 not make use of any of the 19 hours of 23 evaluation that you conducted and were paid 24 for by plaintiffs' law firms in preparing 25 your submissions to the EPA and to the</p>	<p style="text-align: right;">Page 104</p> <p>1 MS. GREENWALD: Same objection. 2 A. I have spoken with the EPA 3 officials on the glyphosate issue. 4 Q. And you have had private e-mail 5 communications with Jim Jones about 6 glyphosate, correct? 7 MS. GREENWALD: Objection, form. 8 A. I have sent to Jim Jones 9 concern -- my concerns about glyphosate. 10 Q. In private e-mail communications, 11 correct? 12 MS. GREENWALD: Objection, form. 13 A. It was to his EPA e-mail address, 14 which is not a private e-mail address. 15 Q. Well, the e-mail that you sent 16 was not disclosed publicly. You had a 17 private communication with Mr. Jones on 18 e-mail, correct? 19 MS. GREENWALD: Objection, form, 20 asked and answered, argumentative. 21 A. I -- she is right, I answered the 22 question. 23 Q. So did you publicly disclose -- 24 have you publicly disclosed your e-mail 25 communications with Jim Jones at EPA about</p>
<p style="text-align: right;">Page 103</p> <p>1 European regulators? 2 MS. GREENWALD: Objection, form. 3 Asked and answered. 4 A. As I said before, intellectual 5 gains from reading documents play a role in 6 anything I ever write or do in the future. 7 Hence, I cannot say "no" to that question. 8 Q. But in your submission to the 9 EPA, when you submitted your analysis, you 10 did not disclose the fact that you had been 11 paid by plaintiffs' counsel to review the 12 scientific data on glyphosate, correct? 13 MS. GREENWALD: Objection, form. 14 A. The document I submitted to EPA 15 about the scientific failures in their 16 evaluation of the scientific evidence for 17 glyphosate did not disclose that I worked 18 for plaintiffs' law firm. 19 Q. You have been -- you have had a 20 number of conversations with individual EPA 21 officials behind the scenes about 22 glyphosate, correct? 23 MS. GREENWALD: Objection, form. 24 A. On what topic? 25 Q. Glyphosate.</p>	<p style="text-align: right;">Page 105</p> <p>1 glyphosate? 2 MS. GREENWALD: Objection, form. 3 A. I think they did. 4 Q. And is it your understanding that 5 every communication you have had with 6 Mr. Jones has been disclosed publicly? 7 MS. GREENWALD: Objection, form. 8 A. That I don't know. But, of 9 course, you can FOIA them and you will know 10 which ones. 11 Q. Have you had telephone 12 conversations with Mr. Jones about 13 glyphosate? 14 A. Not that I recall. 15 Q. Who is Jim Jones? 16 A. He was the director of the office 17 of pesticides and toxic substances, the 18 assistant administrator at EPA. 19 Q. How do you know Mr. Jones? 20 A. I've known Mr. Jones for years. 21 I was a government official. He was a 22 government official. We were working on 23 environmental issues. That's how I knew 24 him. 25 Q. In your e-mail communications</p>

<p style="text-align: right;">Page 106</p> <p>1 with Mr. Jones, did you disclose to him the 2 fact that you were a paid expert for 3 plaintiffs' counsel in this litigation? 4 A. I don't recall. 5 MR. LASKER: Mark as 6 Exhibit 15-22 and 15-23 two e-mail 7 communications we have between you and 8 Mr. Jones and others at EPA. 9 (Exhibit 15-22, e-mail chain 10 Bates stamped EPAHQ6149, marked for 11 identification, as of this date.) 12 (Exhibit 15-23, e-mail chain 13 Bates stamped PORTIER0000055 through 14 61, marked for identification, as of 15 this date.) 16 Q. Dr. Portier, Exhibit 15-22 and 17 15-23 are two e-mail exchanges, one dated 18 May of 2016, the other dated June of 2016, 19 that include e-mail communications between 20 you and Mr. Jones, correct? 21 A. Which document are we talking 22 about? Both of them? 23 Q. Yes. 24 A. The first document is from 25 Jones -- to Jones from me it appears, and</p>	<p style="text-align: right;">Page 108</p> <p>1 Q. And you sent that to Mr. Jones on 2 June 23, 2016, correct? 3 A. Yes. 4 Q. And this is at the same time, 5 almost exactly the same time, that you 6 billed plaintiffs' counsel for the 19 hours 7 of work that you had conducted in 8 evaluating an EPA document on glyphosate, 9 correct? 10 MS. GREENWALD: Objection, form. 11 A. The dates are going to be close. 12 Q. So in May of 2016, you spent 19 13 hours for plaintiffs' counsel reviewing an 14 EPA glyphosate document and were paid by 15 plaintiffs' counsel by that, and then in 16 June of 2016, you made a submission to EPA 17 with at least one table of an evaluation of 18 glyphosate, correct? 19 A. I don't know. Probably. 20 Q. You produced this e-mail 21 communication -- at least the June 2016 22 e-mail communication in response to our 23 document requests, but we did not have the 24 assessment that you actually sent to EPA. 25 MR. LASKER: So we would request</p>
<p style="text-align: right;">Page 107</p> <p>1 the second document is from Anna Lowit to 2 me but there is something further down. 3 Q. If you go to the beginning of the 4 conversation, there's e-mail exchanges. It 5 starts off with an e-mail exchange between 6 you and Jim Jones, and then some further 7 e-mail communications, correct? 8 MS. GREENWALD: Objection, form. 9 A. I don't know where the start of 10 that conversation is. I'm sorry. 11 Q. OK. If you look at 12 Exhibit 15-23, I believe the first e-mail 13 in the chain, and it seems like we got it 14 here twice -- nope. It goes back and 15 forth. 16 But the first chronological 17 e-mail that I see in this chain is an 18 e-mail at the very end of this on June 23, 19 2016, from you to Jim Jones correcting an 20 error in the table that you had, I guess, 21 sent to him, correct? 22 The very last page of the 23 document -- 24 A. I had an area 1 table that I had 25 to correct, new version attached, yes.</p>	<p style="text-align: right;">Page 109</p> <p>1 that that be produced. 2 MS. GREENWALD: That was produced 3 all PowerPoints supplied by Chris 4 Portier were supplied to you guys. 5 MR. LASKER: The PowerPoints, 6 yes. 7 MS. GREENWALD: Correct. That 8 would be -- 9 MR. LASKER: Is this a PowerPoint 10 presentation? 11 MS. GREENWALD: PPTX is the root 12 of the document attached. 13 MR. LASKER: Fair enough. We 14 will figure that out. 15 Q. Although -- so -- in any event, 16 in these communications -- e-mail 17 communications, and particularly the 18 communication in June of 2016, right after 19 you had been paid by plaintiffs' counsel to 20 evaluate an EPA document, you do not 21 disclose to Mr. Jones that you are a paid 22 consultant for plaintiffs' counsel in the 23 litigation, correct? 24 MS. GREENWALD: Objection, form. 25 A. In this e-mail right here, I do</p>

<p style="text-align: right;">Page 110</p> <p>1 not do that. That is correct.</p> <p>2 Q. Do you recall other e-mail</p> <p>3 communications that you had with Mr. Jones</p> <p>4 during this period of time?</p> <p>5 A. I had at least one more, yes.</p> <p>6 Q. That has not been produced to us</p> <p>7 in this litigation.</p> <p>8 Do you still have copies of that</p> <p>9 communication?</p> <p>10 A. If you didn't get it, I don't</p> <p>11 have it.</p> <p>12 Q. Do you recall the substance of</p> <p>13 this other e-mail communication with</p> <p>14 Mr. Jones?</p> <p>15 A. It had to do with errors I saw in</p> <p>16 the EFSA. It contains much of the stuff I</p> <p>17 was already sending to EFSA, along with</p> <p>18 some linkage to problems with some of the</p> <p>19 things the EPA had done including the memo.</p> <p>20 Q. So in June of 2016, you were</p> <p>21 having a series of e-mails communications</p> <p>22 with Mr. Jones at EPA based upon issues you</p> <p>23 had identified through your paid work for</p> <p>24 plaintiffs' counsel in this litigation,</p> <p>25 correct?</p>	<p style="text-align: right;">Page 112</p> <p>1 about glyphosate?</p> <p>2 A. Did I have any conversations --</p> <p>3 yes.</p> <p>4 Q. What other EPA employees did you</p> <p>5 have conversations with?</p> <p>6 A. I think his name is Steve</p> <p>7 Johnson, who is in charge of the EPA</p> <p>8 science advisory panel reviews. I sent him</p> <p>9 correspondence when I sent him my reviews.</p> <p>10 Other EPA employees that I would</p> <p>11 have spoken to?</p> <p>12 I speak with Vincent Cogliano.</p> <p>13 Sometimes, I might have spoken with him.</p> <p>14 Q. Do you recall disclosing to</p> <p>15 either of these EPA officials the fact that</p> <p>16 you were a paid consultant for plaintiffs'</p> <p>17 counsel in this litigation?</p> <p>18 A. I don't know about Steve. I</p> <p>19 don't -- I don't think so.</p> <p>20 Q. Have you had any conversations</p> <p>21 with Tom Burke?</p> <p>22 A. I've had lots of conversations</p> <p>23 with Tom Burke.</p> <p>24 Q. About glyphosate?</p> <p>25 A. I don't recall.</p>
<p style="text-align: right;">Page 111</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. It's possible.</p> <p>3 Q. You do not have any recollection,</p> <p>4 sitting here today, of ever disclosing to</p> <p>5 Mr. Jones that you were working for</p> <p>6 plaintiffs' counsel during this time</p> <p>7 period, correct?</p> <p>8 A. I don't have a recollection of</p> <p>9 disclosing or not disclosing. I don't</p> <p>10 really know.</p> <p>11 Q. You also had communications with</p> <p>12 Ann Lowit at EPA, correct?</p> <p>13 A. Yes, that is correct, briefly.</p> <p>14 Q. And that would be in this e-mail</p> <p>15 exchange?</p> <p>16 A. This e-mail exchange and then --</p> <p>17 I don't know what else is in here.</p> <p>18 Q. Do you recall ever disclosing to</p> <p>19 Ann Lowit that you were a paid consultant</p> <p>20 with plaintiffs' counsel suing Monsanto?</p> <p>21 A. No, I don't recall.</p> <p>22 MS. GREENWALD: Objection, form.</p> <p>23 Go on.</p> <p>24 Q. Do you recall having any other</p> <p>25 conversations with any other EPA employees</p>	<p style="text-align: right;">Page 113</p> <p>1 Q. Can you name for me the</p> <p>2 individual -- individuals in the European</p> <p>3 government regulators or government</p> <p>4 officials with whom you have spoken about</p> <p>5 glyphosate?</p> <p>6 A. There is no way I could remember</p> <p>7 them all. I'm terrible with names. No.</p> <p>8 I'm sorry.</p> <p>9 Q. Was it more than five people?</p> <p>10 A. Yes.</p> <p>11 Q. More than ten?</p> <p>12 A. I don't know. I can't</p> <p>13 distinguish between a regulator and a</p> <p>14 politician in Europe. So I have a</p> <p>15 difficult time on working out an answer to</p> <p>16 that question.</p> <p>17 Q. Do you recall disclosing to any</p> <p>18 of those European officials that you were a</p> <p>19 paid consultant for plaintiffs' counsel in</p> <p>20 litigation against Monsanto?</p> <p>21 MS. GREENWALD: Objection to</p> <p>22 form.</p> <p>23 A. Yes.</p> <p>24 Q. Was that in your e-mail -- in</p> <p>25 your e-mail communications with them or in</p>

<p style="text-align: right;">Page 114</p> <p>1 your private conversations?</p> <p>2 A. I don't know if I used that in my</p> <p>3 e-mail to Andriukaitis, but it is the first</p> <p>4 thing we discussed when I walked in his</p> <p>5 door.</p> <p>6 Q. When was that?</p> <p>7 A. When we met -- whenever the first</p> <p>8 time we met after I wrote that letter. I</p> <p>9 don't know the exact date. I'm sorry.</p> <p>10 Q. In your -- you have -- remind me</p> <p>11 now --</p> <p>12 A. Actually, I'll correct that. I'm</p> <p>13 sorry.</p> <p>14 I told him that beforehand. I</p> <p>15 told his staffer, when we were on the phone</p> <p>16 when she called to invite me, I said, I</p> <p>17 have this linkage. Is this a problem?</p> <p>18 And they said, no.</p> <p>19 Q. You provided testimony in front</p> <p>20 of the European Commission, is that</p> <p>21 correct, or you have been invited to?</p> <p>22 A. I provided testimony to the</p> <p>23 German Bundestag, but I did not provide</p> <p>24 testimony in front of the European</p> <p>25 Parliament.</p>	<p style="text-align: right;">Page 116</p> <p>1 during this time period after IARC reaches</p> <p>2 classification, correct?</p> <p>3 MS. GREENWALD: Objection to</p> <p>4 form.</p> <p>5 A. A number of organizations have</p> <p>6 reviewed the scientific literature on</p> <p>7 glyphosate following IARC's review of the</p> <p>8 literature for glyphosate.</p> <p>9 Q. And despite Europe's submissions</p> <p>10 of various analyses, the European Food</p> <p>11 Safety Agency has continued to reach a</p> <p>12 conclusion that glyphosate does not pose a</p> <p>13 risk for cancer, correct?</p> <p>14 MS. GREENWALD: Objection, form.</p> <p>15 A. That is correct.</p> <p>16 Q. And the European Chemical Agency,</p> <p>17 ECA, has continued to conclude that</p> <p>18 glyphosate does not pose a risk of cancer</p> <p>19 in humans, correct?</p> <p>20 MS. GREENWALD: Objection, form.</p> <p>21 A. ECA has for the first time</p> <p>22 concluded that glyphosate shows no risk for</p> <p>23 cancer in humans.</p> <p>24 Q. The -- obviously, the German</p> <p>25 regulators, who you spoke with, they have</p>
<p style="text-align: right;">Page 115</p> <p>1 Q. In your testimony in Germany, did</p> <p>2 you disclose that you were a paid</p> <p>3 consultant for plaintiffs' counsel in this</p> <p>4 litigation?</p> <p>5 A. I can't recall.</p> <p>6 Q. Have you worked with a group</p> <p>7 called the "Health and Environmental</p> <p>8 Alliance" in connection with their work on</p> <p>9 glyphosate for registration in Europe?</p> <p>10 A. I have advised them now and then.</p> <p>11 And they have advised me on issues.</p> <p>12 Q. We talked earlier about that</p> <p>13 issue, about whether you should register as</p> <p>14 a lobbyist or not register as a lobbyist.</p> <p>15 In your conversation with the</p> <p>16 European staffer about whether you should</p> <p>17 register, did you disclose to him the fact</p> <p>18 that you were a paid consultant for</p> <p>19 plaintiffs' counsel in the glyphosate</p> <p>20 litigation?</p> <p>21 MS. GREENWALD: Objection to</p> <p>22 form.</p> <p>23 A. Yes.</p> <p>24 Q. There are a number of other</p> <p>25 organizations that have reviewed glyphosate</p>	<p style="text-align: right;">Page 117</p> <p>1 continued to conclude that glyphosate did</p> <p>2 not pose a risk for cancer, correct?</p> <p>3 MS. GREENWALD: Objection, form.</p> <p>4 A. That's not correct.</p> <p>5 Q. The BFR has now concluded that</p> <p>6 glyphosate causes cancer, is that your</p> <p>7 testimony?</p> <p>8 MS. GREENWALD: Objection, form.</p> <p>9 A. There are more than one German</p> <p>10 agency dealing with glyphosate. BFR has</p> <p>11 not changed their mind.</p> <p>12 Q. That glyphosate does not pose a</p> <p>13 risk for cancer, correct?</p> <p>14 A. Correct.</p> <p>15 Q. The Canadian regulators have</p> <p>16 concluded that glyphosate does not pose a</p> <p>17 risk for cancer, correct?</p> <p>18 A. I don't know.</p> <p>19 Q. The World Health Organization,</p> <p>20 JPMR, has concluded that glyphosate through</p> <p>21 food does not pose a risk for cancer,</p> <p>22 correct?</p> <p>23 MS. GREENWALD: Objection, form.</p> <p>24 A. I'd have to look at their</p> <p>25 conclusion. It's a little more detailed</p>

<p style="text-align: right;">Page 118</p> <p>1 and nuanced than that.</p> <p>2 Q. Your general understanding though</p> <p>3 is that the JPMR in conducting its analysis</p> <p>4 did not raise a concern that glyphosate</p> <p>5 causes cancer, correct?</p> <p>6 MS. GREENWALD: Objection, form.</p> <p>7 A. Again, I would have to look at</p> <p>8 JMPR's document and see.</p> <p>9 Q. The Japanese public health</p> <p>10 regulators have concluded that glyphosate</p> <p>11 does not cause cancer, correct?</p> <p>12 A. I have no idea.</p> <p>13 Q. The Australian public health</p> <p>14 regulators have concluded that glyphosate</p> <p>15 does not cause cancer, correct?</p> <p>16 A. I think I might have read a news</p> <p>17 article on that, but other than that, I</p> <p>18 have no idea.</p> <p>19 Q. The New Zealand public health</p> <p>20 regulators have concluded that glyphosate</p> <p>21 does not cause cancer, correct?</p> <p>22 A. I think so. I got some</p> <p>23 information from one group about that. I</p> <p>24 don't know if that's concluded or not.</p> <p>25 Q. You actually appeared in a radio</p>	<p style="text-align: right;">Page 120</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. There are pooled analyses in</p> <p>3 these slides.</p> <p>4 Q. And some of those pooled</p> <p>5 analyses, in fact, are exactly the same as</p> <p>6 the analyses you have submitted in this</p> <p>7 litigation, correct?</p> <p>8 MS. GREENWALD: Objection, form.</p> <p>9 A. The studies that went into the</p> <p>10 pooled analyses are exactly the same as the</p> <p>11 studies in this litigation.</p> <p>12 The method by which I pooled them</p> <p>13 and do a trend test of the overall response</p> <p>14 from the pooled data is in the slides as</p> <p>15 well as in this litigation.</p> <p>16 Q. Did you make a disclaimer --</p> <p>17 well, first of all, none of your slide</p> <p>18 decks themselves provide a written</p> <p>19 disclaimer that you are working as an</p> <p>20 expert for plaintiffs in glyphosate</p> <p>21 litigation, correct?</p> <p>22 MS. GREENWALD: Objection, form.</p> <p>23 A. If you say so. I haven't looked.</p> <p>24 Q. Did you make a disclaimer at the</p> <p>25 beginning of each of these scientific</p>
<p style="text-align: right;">Page 119</p> <p>1 program in New Zealand urging the</p> <p>2 regulators in New Zealand to find</p> <p>3 glyphosate as a carcinogenic, didn't you?</p> <p>4 A. I might have.</p> <p>5 Q. In response to our document</p> <p>6 request for this deposition, you produced a</p> <p>7 series of slide decks for presentations</p> <p>8 that you had given to various scientific</p> <p>9 agencies, correct?</p> <p>10 MS. GREENWALD: Objection, form.</p> <p>11 A. I have produced a slide deck of</p> <p>12 any -- exactly what you asked for, any</p> <p>13 presentation I did on glyphosate.</p> <p>14 Q. And at each of those scientific</p> <p>15 methods you presented some version of the</p> <p>16 pooled analyses that you conducted on</p> <p>17 glyphosate that are the same types of</p> <p>18 analyses you were proffering in this</p> <p>19 litigation, correct?</p> <p>20 MS. GREENWALD: Objection, form.</p> <p>21 A. They're not exactly the same.</p> <p>22 Q. They are the same type of pooled</p> <p>23 analyses, correct?</p> <p>24 And you have been revising them</p> <p>25 as you have gone along, correct?</p>	<p style="text-align: right;">Page 121</p> <p>1 meetings when you presented this data that</p> <p>2 you were a paid expert consultant for</p> <p>3 plaintiffs' counsel in private litigation</p> <p>4 against Monsanto?</p> <p>5 A. I can't be certain for every one</p> <p>6 of them.</p> <p>7 Q. You have also given numerous</p> <p>8 interviews to media outlets and various</p> <p>9 bloggers commenting on glyphosate issues,</p> <p>10 correct?</p> <p>11 MS. GREENWALD: Objection, form.</p> <p>12 A. I've done interviews with all</p> <p>13 sorts of people on glyphosate issues.</p> <p>14 Q. And have you disclosed to each of</p> <p>15 these media outlets your role as a paid</p> <p>16 expert consultant for plaintiffs' counsel</p> <p>17 in this litigation?</p> <p>18 A. I can't be certain.</p> <p>19 Q. Well, for example -- strike that.</p> <p>20 You have also written a number of</p> <p>21 commentaries about glyphosate in the</p> <p>22 scientific press, correct?</p> <p>23 A. I've written two, I believe.</p> <p>24 Q. Well, let's look at one of the</p> <p>25 first of those.</p>

<p style="text-align: right;">Page 122</p> <p>1 MR. LASKER: This is -- we will 2 mark this as -- 3 MS. GREENWALD: 24. 4 MR. LASKER: So it is 15-24. I'm 5 sorry. 6 (Exhibit 15-24, article from 7 Horizons, dated March 7, 2016 with 8 attachment, marked for identification, 9 as of this date.) marked 10 Q. Dr. Portier, this is an article 11 you wrote for the Swiss science magazine 12 Horizons, in which you debated that the 13 head of the pesticides unit at the European 14 Food Safety Authority about the safety of 15 glyphosate, correct? 16 A. This article appeared in a Swiss 17 magazine called Horizons, and yes, there 18 was pro and con, and Jose Tarazona did the 19 con and I did the pro. 20 Q. This was March 2016, one year 21 after you had signed on as a paid 22 consultant -- paid expert for plaintiffs' 23 counsel in this litigation, correct? 24 MS. GREENWALD: Objection, form. 25 A. This is -- yeah, about a year.</p>	<p style="text-align: right;">Page 124</p> <p>1 Q. This is a reply that you 2 published in the journal "Archives of 3 Toxicology," correct? 4 A. This is a letter to the editor in 5 the journal "Archives of Toxicology." 6 Q. And in this letter you are again 7 addressing the European Union's assessment 8 of glyphosate and its difference with IARC 9 regarding glyphosate, correct? 10 A. I don't know if I was talking 11 about its difference with IARC. Give me a 12 moment, please. 13 No, I don't believe this was 14 discussing the differences with IARC. I 15 believe this was only discussing the 16 scientific problems with the EFSA 17 glyphosate risk assessment and pointing out 18 to the authors of that evaluation, that 19 they missed a number of positive rodent 20 findings. 21 Q. But this is a -- again, an 22 article or a letter that you had published 23 in the Archives of Toxicology presenting 24 your analysis of the glyphosate science, 25 correct?</p>
<p style="text-align: right;">Page 123</p> <p>1 Q. And in this article, there is 2 a -- you identify yourself as the former 3 director of the U.S. National Institute of 4 Environmental Health, correct? 5 A. I certainly would never have 6 identified myself as that. That's 7 incorrect. 8 Q. There is -- you do not have any 9 disclosure anywhere in this article about 10 the fact that you had been for a year a 11 paid expert for plaintiffs' counsel in 12 litigation against Monsanto, correct? 13 MS. GREENWALD: Objection, form. 14 A. There does not appear to be 15 anything on this page that suggests I am a 16 paid consultant for this law firm on 17 glyphosate issues. 18 Q. And let's look at, as 15-25 -- 19 this is ... 20 (Exhibit 15-25, article entitled, 21 "Re: Tarazona et al.: Glyphosate 22 toxicity and carcinogenicity: a review 23 of the scientific basis of the European 24 Union assessment," marked for 25 identification, as of this date.)</p>	<p style="text-align: right;">Page 125</p> <p>1 MS. GREENWALD: Objection, form. 2 A. No. It is noting problems with 3 the EFSA risk assessment and some of the 4 analysis I have done for glyphosate. 5 Q. And this letter was submitted in 6 May of 2017, correct? 7 A. Probably, yes. 8 Q. As of this date, you had been 9 working as a paid expert for plaintiffs' 10 counsel for more than two years, correct? 11 MS. GREENWALD: Objection, form. 12 A. As of May 2017, I was working for 13 plaintiffs' counsel, correct. 14 Q. And you had billed plaintiffs' 15 counsel, and we can do the math, but 16 somewhere around \$150,000 as of this date 17 for your work on glyphosate, correct, 18 plaintiffs' counsel? 19 A. I had billed them. That is 20 correct. 21 Q. And you do not disclose anywhere 22 in this letter to the editor in the journal 23 Archives of Toxicology the fact that you 24 were a paid expert for plaintiffs' counsel 25 in private litigation against Monsanto, do</p>

<p style="text-align: right;">Page 126</p> <p>1 you?</p> <p>2 MS. GREENWALD: Objection to</p> <p>3 form.</p> <p>4 A. This journal doesn't ask for</p> <p>5 that. I don't know.</p> <p>6 Q. Dr. Portier --</p> <p>7 A. It's not on the document.</p> <p>8 Q. So just so the record is --</p> <p>9 A. To answer your question, it is</p> <p>10 not on the document.</p> <p>11 Q. In your letter to the editor that</p> <p>12 was published in Archives of Toxicology in</p> <p>13 2017 -- in June of 2017, you do not</p> <p>14 disclose the fact that you were -- you are</p> <p>15 a paid expert for plaintiffs' counsel in</p> <p>16 litigation against Monsanto, correct?</p> <p>17 MS. GREENWALD: Objection, form.</p> <p>18 A. In Exhibit 15-25, I do not</p> <p>19 disclose that I was a paid consultant for</p> <p>20 this law firm in this litigation.</p> <p>21 Q. In 2016, you made a presentation</p> <p>22 about glyphosate to the Collegium</p> <p>23 Ramazzini.</p> <p>24 A. No, I didn't make a presentation.</p> <p>25 MR. LASKER: Let's mark -- this</p>	<p style="text-align: right;">Page 128</p> <p>1 correct?</p> <p>2 MS. GREENWALD: Objection, form.</p> <p>3 A. Yes, I guess.</p> <p>4 Q. And this presentation, you are</p> <p>5 listed as an author along with five</p> <p>6 individuals who are identified as Ramazzini</p> <p>7 fellows, correct?</p> <p>8 A. One, two, three, four, five, that</p> <p>9 is correct.</p> <p>10 Q. As of this date, you are not a</p> <p>11 Ramazzini fellow, correct?</p> <p>12 A. As of this date, I am not -- I</p> <p>13 was not a -- well, I don't know. I</p> <p>14 honestly don't know.</p> <p>15 Q. You have recently become</p> <p>16 selected --</p> <p>17 A. I am a Ramazzini fellow --</p> <p>18 Q. OK.</p> <p>19 A. -- yes.</p> <p>20 I guess by this date I wasn't</p> <p>21 because I'm not listed as one.</p> <p>22 Q. So it was sometime in the last</p> <p>23 year that you became a Ramazzini fellow, is</p> <p>24 that fair?</p> <p>25 A. I would think so, yes.</p>
<p style="text-align: right;">Page 127</p> <p>1 will be Exhibit 26.</p> <p>2 (Exhibit 15-26, article entitled,</p> <p>3 "The glyphosate saga: an example of</p> <p>4 influence of unsound science and</p> <p>5 interest groups in public health</p> <p>6 decision making," marked for</p> <p>7 identification, as of this date.)</p> <p>8 A. Yes.</p> <p>9 Q. This is -- Exhibit 15-26 is a</p> <p>10 poster presentation that was presented --</p> <p>11 it was called "Ramazzini Days."</p> <p>12 What is Ramazzini Days?</p> <p>13 A. Ramazzini Days is something that</p> <p>14 Ramazzini Institute holds once a year</p> <p>15 where -- it is a scientific conference.</p> <p>16 Q. At this scientific conference,</p> <p>17 there was a poster presentation regarding</p> <p>18 glyphosate, and you are one of the</p> <p>19 coauthors of that poster presentation,</p> <p>20 correct?</p> <p>21 MS. GREENWALD: Objection, form.</p> <p>22 A. The document 15-26, I am one of</p> <p>23 the coauthors.</p> <p>24 Q. That is a poster presentation</p> <p>25 that was presented at Ramazzini Days,</p>	<p style="text-align: right;">Page 129</p> <p>1 Q. And one of the other scientists</p> <p>2 that you were -- that you're presenting</p> <p>3 with here is Philip Landrigan, correct?</p> <p>4 A. That is correct.</p> <p>5 MS. GREENWALD: Objection to</p> <p>6 form.</p> <p>7 Q. Philip Landrigan actually</p> <p>8 assisted, helped you, in preparing that</p> <p>9 open letter that you submitted to the</p> <p>10 European regulators in November of 2015,</p> <p>11 correct?</p> <p>12 MS. GREENWALD: Objection to</p> <p>13 form.</p> <p>14 A. Philip Landrigan's name is on</p> <p>15 that letter, I believe. I would have to</p> <p>16 check to make sure.</p> <p>17 And yes, he did provide comments.</p> <p>18 Q. What other, if any,</p> <p>19 collaborations have you had with Philip</p> <p>20 Landrigan relating to glyphosate?</p> <p>21 MS. GREENWALD: Objection to</p> <p>22 form.</p> <p>23 A. Probably a few things. I can't</p> <p>24 recall.</p> <p>25 Q. Have you consulted with</p>

<p style="text-align: right;">Page 130</p> <p>1 Dr. Landrigan about further research 2 relating to glyphosate? 3 A. No. 4 Q. Have you communicated with 5 Mr. Landrigan about European regulators' 6 assessment of glyphosate beyond the open 7 letter in November of 2015? 8 MS. GREENWALD: Objection, form. 9 A. Say it again, please. 10 Q. Have you consulted with Philip 11 Landrigan about the European registration 12 of glyphosate apart from that letter in 13 November of 2015? 14 MS. GREENWALD: Objection, form. 15 A. So first, I don't consult with 16 Philip Landrigan. 17 Q. Communicate? 18 A. We collaborate or we communicate, 19 so -- 20 Q. That's a better word. 21 A. -- let me make that clear. 22 Q. So let me reask it. 23 Have you collaborated with Philip 24 Landrigan about glyphosate registration in 25 Europe outside of that November 2015 letter</p>	<p style="text-align: right;">Page 132</p> <p>1 Q. In your poster presentation at 2 Ramazzini Days, in the conclusion, you 3 state that -- you talk about economically 4 motivated activities having influenced the 5 glyphosate science, correct? 6 MS. GREENWALD: Objection, form. 7 A. I should pay more attention to 8 what my coauthors write sometimes. 9 That is what it says. 10 Q. You do not disclose anywhere in 11 this poster presentation your role as a 12 paid expert for plaintiffs' counsel in 13 private litigation against Monsanto, do 14 you? 15 MS. GREENWALD: Objection, form. 16 A. Not specific. I list myself as 17 an environmental health consultant. 18 Q. Again, just so the record is 19 clear, you do not disclose the fact that 20 you were a paid consultant for plaintiffs' 21 counsel in private litigation against 22 Monsanto? 23 A. That is correct. 24 Q. Now, you're -- the point you're 25 making in this poster presentation instead</p>
<p style="text-align: right;">Page 131</p> <p>1 that we have already discussed? 2 A. Not that I recall. 3 Q. Have you collaborated with Philip 4 Landrigan related to the EPA's assessment 5 of glyphosate? 6 MS. GREENWALD: Objection to 7 form. 8 A. Not that I recall. 9 Q. Have you collaborated with 10 Mr. Landrigan about assessments of the 11 glyphosate science? 12 MS. GREENWALD: Object to form. 13 A. Mr. -- Dr. Landrigan is a 14 cosignatory of the open letter, and that 15 open letter discusses the science around 16 glyphosate. 17 So I guess the answer to that 18 question is yes. 19 Q. You said you had a number of 20 other collaborations with Mr. -- with 21 Dr. Landrigan, if I understood correctly, 22 regarding glyphosate -- 23 A. No. 24 Q. OK. 25 A. Sorry, none.</p>	<p style="text-align: right;">Page 133</p> <p>1 is about what you characterize as an 2 improper influence of corporate money on 3 scientific research, is that correct? 4 MS. GREENWALD: Objection, form. 5 A. I don't -- 6 Q. In the conclusion? 7 MS. GREENWALD: Same objection. 8 A. That's what the -- I am sorry, 9 let's be clear. 10 First, I want to make something 11 clear: You asked me if I made a 12 presentation to them. Baur -- Xavier 13 Baur made the presentation. I did not 14 attend this meeting. 15 Now, you just asked me -- if you 16 could repeat the question. 17 Q. In the poster presentation -- and 18 you are a coauthor of the poster? 19 A. Correct. 20 Q. In the poster presentation, the 21 concern is being raised about potential 22 improper influence of corporate money on 23 scientific research, correct? 24 MS. GREENWALD: Objection, form. 25 A. That's one little bit at the tail</p>

1 end, correct.

2 Q. And you and the other authors are
3 calling upon the Collegium Ramazzini to
4 take a stand against corporate funding of
5 scientific research --

6 MS. GREENWALD: Objection to
7 form.

8 Q. -- as part of this presentation,
9 correct?

10 MR. SNOO: Objection to form.

11 A. Actually, no. We encouraged the
12 Collegium Ramazzini to again support an
13 IARC evaluation of carcinogenicity.

14 Q. In the earlier paragraph, right
15 before where you are reading, you talk
16 about:

17 "Glyphosate is a one example of
18 inappropriate corporate influence of public
19 health regulation by the use of unsound
20 scientific reviews" --

21 A. But your question said --

22 Q. -- "and would call for increased
23 sensitivity, full transparency and
24 implementation of effective rules governing
25 decision-making bodies," correct?

1 A. I don't recall.

2 We certainly did some work with
3 them trying to help them improve their
4 cancer bioassays. That I do recall.

5 Q. And in your CV --

6 MR. LASKER: And you can mark
7 that as 15-27.

8 (Exhibit 15-27, curriculum vitae,
9 marked for identification, as of this
10 date.)

11 Q. If you look at the fifth page
12 under your U.S. Government service
13 activities, and it's about three-quarters
14 down the page under U.S. Government service
15 activities, you are listed as an organizer,
16 formal collaborative agreements between NTP
17 and Ramazzini Foundation from 2001 to 2006,
18 correct?

19 A. That is correct.

20 Q. And so for this five- or six-year
21 period then, the NTP and Ramazzini
22 Foundation were involved in collaborative
23 agreements relating to toxicological
24 studies?

25 MS. GREENWALD: Objection, form.

1 MS. GREENWALD: Objection, form.

2 A. But we are not calling for the
3 Ramazzini Institute to do that, or
4 Collegium Ramazzini, which was your
5 question to me.

6 Q. So you are calling for scientists
7 more broadly, is that fair?

8 MS. GREENWALD: Objection to
9 form.

10 Q. Or regulators?

11 MS. GREENWALD: Same objection.

12 A. We are calling for an increased
13 sensitivity, full transparency and the
14 implementation of effective rules governing
15 decision-making bodies. That's what we are
16 calling for. That's what we said.

17 Q. Am I correct in my understanding
18 then Collegium Ramazzini does not take
19 money from private corporations for its
20 scientific research?

21 A. I have no idea.

22 Q. During your time in government at
23 NTP, you worked on collaborative efforts
24 between the NTP and the Collegium
25 Ramazzini, correct?

1 A. It was more related to pathology
2 and the storage of data from toxicological
3 studies.

4 Q. During this period, you were the
5 organizer of these agreements.

6 Did the Ramazzini Foundation
7 conduct any research for NTP?

8 A. I don't believe they did.

9 Q. During this period, did the
10 Ramazzini Foundation conduct any research
11 that was funded by the U.S. Government?

12 MS. GREENWALD: Objection, form.

13 A. They did get some funding from
14 NIEHS or NTP, but, boy, I cannot for the
15 life of me remember. I think they got some
16 funding.

17 Q. Are you aware that the Collegium
18 Ramazzini has announced that it will be
19 conducting studies on glyphosate with
20 respect to genotoxicity and oxidative
21 stress?

22 A. Yes, I am aware of that.

23 Q. Are you involved in that research
24 effort?

25 A. No.

<p style="text-align: right;">Page 138</p> <p>1 Q. Have you had any conversations 2 with the folks at Collegium Ramazzini about 3 that research? 4 A. Yes. 5 Q. What has been the nature of your 6 conversations? 7 A. Part of it they were asking me to 8 join them and analyze their data at the 9 end. I declined. 10 Part of it was just general 11 questions about the science and what's 12 already been done with glyphosate. 13 Q. And in your conversation with 14 Collegium Ramazzini, did you disclose the 15 fact that you were a paid consultant for 16 plaintiffs' counsel in litigation against 17 Monsanto? 18 A. It is the Ramazzini Institute. 19 They are different entities. 20 But yes, I did disclose to them. 21 Q. Is that the reason that you 22 decided not to participate in their 23 scientific evaluation? 24 A. Partly. There are other reasons. 25 Q. What were the other reasons?</p>	<p style="text-align: right;">Page 140</p> <p>1 there. 2 A. 15-20? Oh, boy. I'm not good at 3 keeping things in order here. 4 Q. This is your submission to EPA in 5 October of 2016, correct? 6 A. Yeah, it looks like that. 7 Q. And then on page 7, about 8 two-thirds down the page, you're talking 9 about whether there is an association 10 between glyphosate exposure and the risk of 11 non-Hodgkins lymphoma. 12 Do you see that, and that's what 13 starts the summary? 14 A. Start with "Summary," and how far 15 do you want me to read? 16 Q. First of all, I'm asking if you 17 see that section, which you obviously do. 18 The end of that paragraph, you 19 state, with regard to glyphosate in NHL, 20 "So is causality plausible here? Yes, 21 absolutely. Is it demonstrated? No, 22 clearly not." 23 That was your statement, correct? 24 A. If you could wait. 25 This is strictly discussing the</p>
<p style="text-align: right;">Page 139</p> <p>1 A. I'm busy. I'm retired. They 2 wanted me to come down to Bologna and give 3 a talk and other things and I just wasn't 4 interested. 5 Q. Dr. Portier, you have stated that 6 you do not believe that causality between 7 glyphosate formulations and NHL has been 8 demonstrated, correct? 9 MS. GREENWALD: Objection, form. 10 A. What I believe is written in the 11 expert report. 12 Q. Well, let me just ask this 13 question: It is true that you do not 14 believe that causality between glyphosate 15 formulations and NHL have been 16 demonstrated, correct? 17 MS. GREENWALD: Objection, form. 18 A. Causality is an interesting -- 19 it's a spectrum, but if you're using 20 causality to mean 100 percent, absolutely 21 certain, then I would have concern. But my 22 conclusion is it probably causes NHL. 23 Q. Let's take a look next in line. 24 This is Exhibit 15-20. It is already 25 marked. So it's one of the exhibits in</p>	<p style="text-align: right;">Page 141</p> <p>1 epidemiology data, and the question was 2 whether the epidemiology data, by itself, 3 demonstrates causality, and the answer to 4 the question is no. 5 Q. And that is your opinion, 6 correct? 7 MS. GREENWALD: Objection, form. 8 A. That is only for the epidemiology 9 data, and for the epidemiology data to 10 exhibit clear causality, it would have had 11 to be sufficient instead of limited in the 12 IARC review. 13 I still believe it's limited and 14 not sufficient by itself to demonstrate 15 causality. 16 Q. OK, fair enough. 17 You are a proponent of a 18 principle called the "precautionary 19 principle," correct? 20 MS. GREENWALD: Objection to 21 form. 22 A. I have been in debates with 23 others on the precautionary principle where 24 I've had to choose one side or the other. 25 But I'm not a proponent and I</p>

<p style="text-align: right;">Page 142</p> <p>1 don't hate it. I'm not clear on what it is</p> <p>2 in the way it is applied.</p> <p>3 Q. Well, let me ask you this --</p> <p>4 well, first of all, you were a member of a</p> <p>5 group called "Critical Scientists</p> <p>6 Switzerland," correct?</p> <p>7 A. Yes, I am.</p> <p>8 Q. And one of the goals of Critical</p> <p>9 Scientists Switzerland is promoting the</p> <p>10 precautionary principle, correct?</p> <p>11 A. I suppose it is, yes.</p> <p>12 Q. And in your assessment of</p> <p>13 glyphosate, you have talked about public</p> <p>14 protective decisions, correct?</p> <p>15 MS. GREENWALD: Objection, form.</p> <p>16 A. I have no idea -- I certainly do</p> <p>17 talk about public protective science -- use</p> <p>18 of science to protect the public.</p> <p>19 Q. And in respect specifically to</p> <p>20 the glyphosate, and, for example, in your</p> <p>21 submissions to EPA, you have called upon</p> <p>22 them to apply this public protective</p> <p>23 approach in their assessment of the</p> <p>24 glyphosate science, correct?</p> <p>25 MS. GREENWALD: Objection, form.</p>	<p style="text-align: right;">Page 144</p> <p>1 A. I'm calling them to conclude</p> <p>2 these tumors arose as a function of</p> <p>3 exposure to glyphosate.</p> <p>4 Q. Based upon the fact that EPA is</p> <p>5 a --</p> <p>6 A. Public health agency.</p> <p>7 Q. And should therefore be applying</p> <p>8 a public protective methodology, or a</p> <p>9 methodology that is protective of the</p> <p>10 public in making its assessments about</p> <p>11 carcinogenicity, correct?</p> <p>12 MS. GREENWALD: Objection to</p> <p>13 form.</p> <p>14 A. It's a long question but I</p> <p>15 will -- I think you were reading way more</p> <p>16 into this sentence than really is there.</p> <p>17 They are a public health agency.</p> <p>18 It's their job to protect the public. The</p> <p>19 correct decision here, the public-protected</p> <p>20 decision, should be to conclude these</p> <p>21 tumors arose as a function of exposure to</p> <p>22 glyphosate.</p> <p>23 Q. And your understanding, when</p> <p>24 there is -- if there is uncertainty in the</p> <p>25 data but there is data that is suggestive,</p>
<p style="text-align: right;">Page 143</p> <p>1 A. I don't recall that. You would</p> <p>2 have to show me. I'm sorry.</p> <p>3 Q. So we are still on Exhibit 20.</p> <p>4 And if we could look at page 11.</p> <p>5 And here you're talking about</p> <p>6 your comment on the rat studies, correct?</p> <p>7 A. That's what it says, yes.</p> <p>8 Q. And then the bottom of the page,</p> <p>9 the second paragraph on the bottom, the</p> <p>10 last line, you state that the public</p> <p>11 protective decision in this case should be</p> <p>12 to conclude these tumors arose as a</p> <p>13 function of exposure to glyphosate,</p> <p>14 correct?</p> <p>15 A. It's the purpose of EPA to</p> <p>16 protect the public and they have to make</p> <p>17 that decision, and in this case, they</p> <p>18 should have included these tumors as a</p> <p>19 function of exposure to glyphosate, yes.</p> <p>20 Q. Again, in your discussion with</p> <p>21 EPA, you're calling upon them to apply this</p> <p>22 protective approach in their assessment of</p> <p>23 glyphosate, correct?</p> <p>24 MS. GREENWALD: Objection to</p> <p>25 form.</p>	<p style="text-align: right;">Page 145</p> <p>1 for a regulator buying -- making a</p> <p>2 public-protective decision, they should</p> <p>3 lean in favor of binding an association, is</p> <p>4 that fair to say?</p> <p>5 MS. GREENWALD: Objection to</p> <p>6 form.</p> <p>7 A. No, I don't -- I don't believe</p> <p>8 that is a general rule I would hold.</p> <p>9 Having been a regulator myself,</p> <p>10 it's -- there are many facets to making a</p> <p>11 decision. And you worry about public</p> <p>12 health but decisions are complicated.</p> <p>13 Q. With respect to carcinogenicity,</p> <p>14 you have also stated your belief that it is</p> <p>15 glyphosate and not the surfactants in the</p> <p>16 formulated products that are causing the</p> <p>17 effects, correct?</p> <p>18 MS. GREENWALD: Objection to</p> <p>19 form.</p> <p>20 A. I can tell you what I believe.</p> <p>21 I believe that glyphosate has an</p> <p>22 effect, and I believe the surfactants also</p> <p>23 have an effect, but the effect seen in</p> <p>24 human epidemiology is clearly partly due to</p> <p>25 glyphosate.</p>

<p style="text-align: right;">Page 146</p> <p>1 Q. You have also stated your belief, 2 with respect to carcinogenicity, that it is 3 glyphosate and not the surfactants in the 4 formulated products that are causing the 5 effects, correct? 6 MS. GREENWALD: Objection, form 7 and asked and answered. 8 A. There is a lot of evidence here. 9 So you have to break it down for me by the 10 type of evidence you want me to discuss. 11 Q. We are going to provide you 12 with -- do you recall being interviewed 13 during one of the times that you went to 14 Europe to talk about the European Food 15 Safety Authority's assessment of 16 glyphosate? 17 A. I've been interviewed dozens of 18 times. 19 Q. During the break we will ask you 20 to listen to one of those interviews. 21 MS. GREENWALD: Counsel, it has 22 to be on the record. I'm not going to 23 have him look at something on a break. 24 That's not the way it works in 25 this litigation. You guys have done it</p>	<p style="text-align: right;">Page 148</p> <p>1 way of explaining the set of facts before 2 us," correct? 3 MS. GREENWALD: Objection, form. 4 A. It's a paraphrase probably, or 5 something along those lines, but yes. 6 Q. You agree that this is the 7 appropriate methodology to be followed in 8 reaching a causation opinion with respect 9 to glyphosate or glyphosate formulations 10 and non-Hodgkins lymphoma, correct? 11 MS. GREENWALD: Objection to 12 form. 13 A. The Bradford Hill criteria with 14 modifications have been accepted by many 15 authorities as the way to approach a 16 causality argument. 17 Q. My question was about you though. 18 Do you agree that the appropriate 19 methodology to be followed in reaching a 20 causation opinion with respect to 21 glyphosate is the Bradford Hill criteria 22 including the question is there any other 23 way of explaining the set of facts before 24 us? 25 MS. GREENWALD: Objection, form,</p>
<p style="text-align: right;">Page 147</p> <p>1 against us -- 2 MR. LASKER: Well, we have had 3 our people review things during the 4 breaks so they could answer questions 5 after the break. 6 MS. GREENWALD: Well, that's your 7 choice. 8 We have also had depositions 9 where we have taken a couple-minute 10 break and then your counsel holds it 11 against our time. 12 So if you want him to do it, we 13 will do it on the record during your 14 own time. 15 MR. LASKER: We will get that 16 keyed up in a moment then. 17 Q. In presenting your opinions in 18 your expert report, you have presented them 19 in the context of the Bradford Hill 20 criteria, correct? 21 A. Yes. 22 Q. And the question that a scientist 23 must answer under the Bradford Hill 24 criteria in deciding whether one can reach 25 a causation opinion is "Is there any other</p>	<p style="text-align: right;">Page 149</p> <p>1 asked and answered. 2 A. I think that quote is in my 3 expert report. And the approach I took in 4 the expert report, I believe, is the 5 correct approach for glyphosate. 6 Q. You still didn't answer my 7 question. 8 Do you believe the correct 9 approach, correct methodology in reaching a 10 causation opinion with respect to 11 glyphosate or glyphosate formulations and 12 NHL is to ask the question is there any 13 other way of explaining the set of facts 14 before us? 15 MS. GREENWALD: Same objection, 16 form, and asked and answered. 17 A. I believe that the approach I use 18 is the correct approach. That's my answer. 19 That question is too simple. The 20 approach is much more complicated. 21 Bradford Hill was just using it as a means 22 for people to understand the concept of 23 what he was trying to get through, but this 24 is -- the whole criteria is very 25 complicated and much greater than that one</p>

<p style="text-align: right;">Page 150</p> <p>1 sentence.</p> <p>2 Q. So in conducting your assessment</p> <p>3 of the glyphosate science, has it been your</p> <p>4 methodology to look to see whether there is</p> <p>5 any other way of explaining the set of</p> <p>6 facts before us?</p> <p>7 MS. GREENWALD: Objection, form.</p> <p>8 A. It's -- part of the Bradford Hill</p> <p>9 criteria is -- the philosophy of Bradford</p> <p>10 Hill is that question.</p> <p>11 I didn't ask that question</p> <p>12 specifically on every single piece of</p> <p>13 evidence I looked at.</p> <p>14 Q. Did you ask that question with</p> <p>15 respect to the glyphosate science as a</p> <p>16 whole?</p> <p>17 MS. GREENWALD: Objection to</p> <p>18 form.</p> <p>19 A. Glyphosate --</p> <p>20 Q. Science as a whole --</p> <p>21 MS. GREENWALD: Objection.</p> <p>22 Q. -- with respect to</p> <p>23 carcinogenicity.</p> <p>24 A. As a whole?</p> <p>25 MS. GREENWALD: Same objection.</p>	<p style="text-align: right;">Page 152</p> <p>1 MS. GREENWALD: I don't want to</p> <p>2 play games here either. So let's see</p> <p>3 if you can hear it sufficiently, and</p> <p>4 all of us, actually, in the room.</p> <p>5 (Videotape plays.)</p> <p>6 MS. GREENWALD: I can't hear it.</p> <p>7 So you have to start it over.</p> <p>8 MR. LASKER: Let's do this after</p> <p>9 the break.</p> <p>10 MS. GREENWALD: We would also</p> <p>11 like some authentication that this is</p> <p>12 actually an accurate -- if you could</p> <p>13 give us the link and we can look at it,</p> <p>14 we'd just have some confirmation of</p> <p>15 what it is.</p> <p>16 MR. LASKER: We can do that off</p> <p>17 the record, and then we will put it on</p> <p>18 the record, too. That's fine.</p> <p>19 Q. Dr. Portier, when did you first</p> <p>20 reach your conclusion that glyphosate</p> <p>21 probably causes non-Hodgkins lymphoma in</p> <p>22 humans?</p> <p>23 A. When did I first reach that</p> <p>24 conclusion?</p> <p>25 Well, I agreed with the IARC</p>
<p style="text-align: right;">Page 151</p> <p>1 A. Yes.</p> <p>2 Q. Dr. Portier, I would like to ask</p> <p>3 you about -- let's go back to the question</p> <p>4 of the interview that you've had, and we</p> <p>5 will play for you -- this is a televised</p> <p>6 interview that you had in Europe.</p> <p>7 MR. LASKER: And let's get this</p> <p>8 so the court reporter can hear it.</p> <p>9 MS. GREENWALD: Do you have a</p> <p>10 transcript of it?</p> <p>11 MR. LASKER: We have a thumb</p> <p>12 drive.</p> <p>13 MS. GREENWALD: Do you have a</p> <p>14 transcript?</p> <p>15 MR. LASKER: We don't have a</p> <p>16 transcript. We have a thumb drive.</p> <p>17 A. My hearing is not great.</p> <p>18 Q. Let's play the videotape.</p> <p>19 That's you on the screen, right?</p> <p>20</p> <p>21 A. Looks like it.</p> <p>22 MS. GREENWALD: And, Dr. Portier,</p> <p>23 if you can't hear it, we should stop it</p> <p>24 sooner than later.</p> <p>25 MR. LASKER: It's pretty short.</p>	<p style="text-align: right;">Page 153</p> <p>1 monograph conclusion. So I guess it was at</p> <p>2 the end of the IARC monograph.</p> <p>3 Q. And then do you recall when you</p> <p>4 first reviewed the data tables for the</p> <p>5 various animal cancer bioassays that you</p> <p>6 discuss in your report that were provided</p> <p>7 with the Greim arbitration?</p> <p>8 A. Not really. I can't say exactly</p> <p>9 when I reviewed those supplemental tables.</p> <p>10 Q. Was it before or after the date</p> <p>11 that you submitted the open letter to the</p> <p>12 European regulators in November of 2015?</p> <p>13 A. I think it was probably after</p> <p>14 that.</p> <p>15 Q. Was it before or after the date</p> <p>16 that you submitted your evaluations or you</p> <p>17 submitted -- provided submissions to EPA in</p> <p>18 October of 2016?</p> <p>19 A. I can't be certain.</p> <p>20 Q. In your expert report, you</p> <p>21 address the animal cancer bioassays under</p> <p>22 the Bradford Hill criteria biological</p> <p>23 plausibility, correct?</p> <p>24 MS. GREENWALD: Objection to</p> <p>25 form.</p>

<p style="text-align: right;">Page 154</p> <p>1 A. I address it there and in two 2 other places, correct. 3 Q. And you agree that animal cancer 4 bioassays are intended to test whether 5 glyphosate can cause cancer in mammals, 6 thus supporting the concept that 7 chemicals -- let me strike that. 8 It is your opinion as set forth 9 in your expert report that animal cancer 10 bioassays are intended to test whether 11 glyphosate can cause cancer in mammals, 12 thus supporting the concept that the 13 chemical could cause cancer in humans, 14 correct? 15 MS. GREENWALD: Objection to 16 form. 17 A. That is part of what I believe 18 from animal cancer studies. 19 There is a second part to that 20 because they can be, under certain 21 conditions, tumor specific for humans. 22 Q. You would agree that an 23 evaluation of human health risks, sound 24 human data, whenever available, are 25 preferred to animal data, correct?</p>	<p style="text-align: right;">Page 156</p> <p>1 mainly used to supply evidence missing from 2 human studies, correct? 3 MS. GREENWALD: Objection, form. 4 A. No. 5 (Exhibit 15-28, document 6 entitled, "Principles for modeling 7 dose-response for risk assessment of 8 chemicals," marked for identification, 9 as of this date.) 10 A. I didn't think anybody ever read 11 that document. 12 Q. One thing that came out of this, 13 right? 14 A. That's amazing. 15 Q. So 15-28, this is a report of a 16 committee that you chaired on principles 17 for modeling dose-response for the risk 18 assessment of chemicals, correct? 19 A. Did I chair it? 20 Q. Or maybe you served on this 21 committee. I don't remember who chaired, 22 frankly. 23 A. I don't know either. 24 Q. You worked on this committee, 25 correct?</p>
<p style="text-align: right;">Page 155</p> <p>1 MS. GREENWALD: Objection, form. 2 A. In any endeavor, looking at 3 mammalian health, the target population, 4 doing everything you can in the target 5 population that you -- things I can do in 6 the target population are important and 7 should be considered. Things that I can't 8 do in the target populations, I will use 9 other scientific models to look at. 10 As a general rule, if I have the 11 exact same study and one is in humans and 12 one is in rodents, I'm going to take the 13 human one as more important. 14 Q. And I think it is consistent with 15 what you just said, animal and in vitro 16 studies are particularly important for you 17 to supply evidence missing from human 18 studies, is that fair? 19 MS. GREENWALD: Objection, form. 20 A. In vitro? 21 Q. Well, let's go with just animal 22 studies. 23 MS. GREENWALD: Same objection. 24 Q. Animal studies might provide 25 support for an assessment, but they are</p>	<p style="text-align: right;">Page 157</p> <p>1 A. I worked on this committee that 2 produced this report. That is correct. 3 Q. And on the beginning of this 4 report -- and I recognize it is a long 5 report, but on page Roman X at the 6 beginning, it is sort of the summary 7 section -- 8 A. Where? 9 Q. It's Roman X. 10 A. Yes. 11 Q. And the final paragraph on that 12 page states: 13 "In the evaluation of human 14 health risks, sound human data whenever 15 available are preferred to animal data. 16 Animal and in vitro studies provide support 17 and are used mainly to supply evidence 18 missing from human studies." 19 Do you agree with that? 20 A. No. I realize I was on the 21 committee but I don't agree with the 22 statement. 23 Q. There is also a statement in this 24 report at page 31, which is normal 31, not 25 Roman. This is the end of the second full</p>

<p style="text-align: right;">Page 158</p> <p>1 paragraph under 4.6, the last sentence: 2 "For dose response analyses based 3 upon laboratory data using animals, there 4 is an additional problem of extrapolating 5 from animals to humans." 6 Do you agree with that statement? 7 MS. GREENWALD: Objection, form. 8 A. This has to do with calculating 9 risk -- 10 Q. And do you agree -- 11 A. -- and in the context of 12 calculating risk, that statement is 13 correct. 14 Q. And page 34, Section 5.1 is a 15 statement: 16 "It has always been a challenge 17 to extrapolate from effects observed in 18 experimental animal bioassays to potential 19 effects in humans in order to protect 20 humans from potentially harmful chemical 21 exposures." 22 Do you agree with that statement? 23 A. I'm trying to find it. 24 Q. 5.1, the first paragraph. 25 A. OK.</p>	<p style="text-align: right;">Page 160</p> <p>1 A. As far as I know, there are only 2 three cases of how this happens, so I -- 3 it -- in the three cases, there are 4 different mechanisms. 5 Q. There are differences in 6 mechanisms of action between rats and mice, 7 and between different strains of mice and 8 rats, that will impact whether or not a 9 chemical could cause cancer in that animal, 10 correct? 11 A. There are mechanisms which could 12 impact the degree to which the chemical 13 causes cancer in the animal. Metabolism 14 could cause differences. Many things. 15 Q. And scientists actually use 16 different animal models to try and support 17 the concept that exposure to a chemical can 18 be linked to a specific type of cancer in 19 humans, correct? 20 MS. GREENWALD: Objection to 21 form. 22 A. Cancer -- there is numerous 23 models that are used to assess the 24 carcinogenic potential of chemicals in 25 mammals.</p>
<p style="text-align: right;">Page 159</p> <p>1 Again, this has to do with risk, 2 not hazard. And in the context of risk, 3 not hazard, this is indeed a true 4 statement. 5 Q. There are certain mechanisms of 6 action with respect to rodent 7 carcinogenicity that do not apply to 8 humans, correct? 9 MS. GREENWALD: Objection, form. 10 A. There have been -- the mechanisms 11 apply to humans. The components of the 12 mechanism don't exist in humans. 13 So there are cases where 14 chemicals have caused cancer in rodents and 15 the mechanism by which they do it does not 16 work in humans. 17 Q. And there are differences between 18 rodents and humans -- strike that. 19 These differences between rodents 20 and humans can vary from one type of cancer 21 to another -- 22 MS. GREENWALD: Objection to 23 form. 24 Q. -- is that fair to say? 25 MS. GREENWALD: Objection form.</p>	<p style="text-align: right;">Page 161</p> <p>1 Q. And different animal models will 2 be used for different types of cancer, 3 correct? 4 A. I don't really know that that 5 statement is true. 6 Which -- different types of 7 cancer in humans? Or different types of 8 cancer in the animals you're going to do 9 the study in? 10 I don't know the context of your 11 question. 12 Q. Let's do it either way. 13 There are animal models that are 14 used to assess whether a substance can 15 cause a specific type of cancer in rodents, 16 correct? 17 A. Yes. 18 Q. And there are different rodent 19 models that are used to try and make an 20 assessment as to whether or not an exposure 21 can cause a certain type of cancer in 22 humans, correct? 23 MS. GREENWALD: Objection, form. 24 A. Not that I'm aware of as a 25 general screening tool.</p>

<p style="text-align: right;">Page 162</p> <p>1 Q. OK. Moving -- so moving away 2 from a general screening tool -- let me 3 just back up. 4 So the cancer bioassays that we 5 are going to be discussing and you discuss 6 in your report are general screening 7 bioassays, correct? 8 A. That is correct with the 9 exception of one of them. 10 Q. And there are then other animal 11 models that are used subsequent to a 12 screening study that will focus on 13 potentially specific types of cancer, 14 correct? 15 MS. GREENWALD: Objection, form. 16 A. You are talking about in rodents? 17 Q. Yes. 18 A. After exposure to the chemical? 19 So let me see if I am -- I am 20 going to talk a little bit so I can get 21 this straight in my head. Excuse me. 22 So the chemical gets done in a 23 screening and an animal in the screening 24 gets the tumor. Why would a scientist move 25 from the, let's say, Wistar rat I saw a</p>	<p style="text-align: right;">Page 164</p> <p>1 called "Mice models of human B lymphoid 2 neoplasm," correct? 3 A. I believe I do. Yes. 4 (Exhibit 15-29, article entitled, 5 "Mouse models of human B lymphoid 6 neoplasms," marked for identification, 7 as of this date.) 8 Q. In this book chapter, 9 specifically at page 3 -- and this will be 10 on the left column at the end of the 11 column -- Dr. Morse states that 12 species-specific differences in the immune 13 system and molecular circuitry required for 14 transformation make it difficult to model 15 NHL in mice, correct? 16 MS. GREENWALD: Objection, form. 17 A. This is the last paragraph -- 18 MS. GREENWALD: I can find it for 19 you. 20 Q. End of the -- 21 MS. GREENWALD: I found it. It's 22 right here. 23 A. "Could thus make it difficult to 24 model some human diseases in mice." 25 He is talking about genetically</p>
<p style="text-align: right;">Page 163</p> <p>1 tumor in to a different animal when I'm 2 already getting tumors in the Wistar rats? 3 In answer to the question, I 4 don't think there are that many cases where 5 they switched off for a specific reason for 6 a specific tumor. 7 Q. In your expert report, you cite 8 to a number of articles regarding the 9 current state of play with respect to 10 identifying rodent models that could be 11 used to analyze the possibility of NHL in 12 humans, correct? 13 MS. GREENWALD: Objection to 14 form. 15 A. I see what your question is 16 about. Now, that's the difference. OK. 17 The rodent models for NHL are 18 developed to get therapies for NHL for 19 humans. They are not developed for the 20 purpose of identifying tumors that arise in 21 humans from exposure to chemicals. 22 They induce the NHL in the animal 23 and then try to fix it. 24 Q. So with respect to mice, you cite 25 to a 2009 book chapter by Herbert Morse</p>	<p style="text-align: right;">Page 165</p> <p>1 modified mice here, yes. 2 Q. And Dr. Morse, if you turn to 3 page 2 and then carry over to page 3, one 4 of the issues that Dr. Morse notes is that 5 the murine leukemia virus can cause 6 lymphomas in mice through a mechanism that 7 has no direct parallel to NHL in humans, 8 correct? 9 MS. GREENWALD: Objection, form. 10 A. Everything he has written here is 11 correct. 12 Q. So there are -- just to be clear, 13 so I'm clear, the murine leukemia virus can 14 cause lymphomas in mice through a mechanism 15 that has no direct parallels to NHL in 16 humans, correct? 17 MS. GREENWALD: Objection, form. 18 A. It's -- there is a parallel in 19 humans. It just doesn't happen with that 20 virus in humans. 21 Q. So what Dr. Morse says is these 22 contributions to disease pathogenesis -- 23 that's the cause of disease in the mouse -- 24 have no direct parallels in human B 25 lymphomas, correct?</p>

<p style="text-align: right;">Page 166</p> <p>1 MS. GREENWALD: Objection to 2 form. 3 A. He is talking specifically about 4 the murine leukemia virus, but the 5 mechanism by which the murine leukemia 6 virus causes NHL in -- causes these B 7 lymphomas in the mice exist in humans. 8 It's just not activated by this particular 9 pathogen. 10 Q. Dr. Morse also notes -- and this 11 is the first full paragraph on that left 12 column on page 3, starting "Second," that 13 there are significant differences between 14 mouse and human immune systems in their 15 development, structure, phenotype and 16 function? 17 A. Correct. 18 Q. And this is significant because 19 NHL in humans has been associated with 20 immune system disorders, correct? 21 MS. GREENWALD: Objection, form. 22 A. I'm not absolutely certain. 23 Q. Are you not aware of an 24 association between HIV and non-Hodgkins 25 lymphoma?</p>	<p style="text-align: right;">Page 168</p> <p>1 following paragraph, starting "Finally," 2 that the genetic and epigenetic alterations 3 required for neoplastic transformation 4 sometimes differ for mouse and human, 5 correct? 6 A. They do sometimes differ, yes. 7 Q. So when we are talking about 8 alterations, we are talking about genetic 9 changes that are required for cancer to 10 form, correct? 11 A. Are you talking about epigenetic 12 and genetic? 13 Q. Right. So these are genetic and 14 epigenetic changes that are required for 15 cancer to occur, correct? 16 MS. GREENWALD: Objection to 17 form. 18 A. I'm not certain what he is saying 19 here because neoplastic transformation can 20 mean transformation of a carcinoma into a 21 metastatic tumor, it could mean 22 transformation from an adenoma to 23 carcinoma. 24 So I'm not exactly certain what 25 he is talking about here, but there are</p>
<p style="text-align: right;">Page 167</p> <p>1 A. Yes, I am. 2 Q. So it is correct that HIV in 3 humans has been associated with immune 4 system disorders, correct? 5 MS. GREENWALD: Objection, form. 6 A. It is true that NHL in humans -- 7 correct. 8 Q. And there are significant 9 differences between mouse and humans' 10 immune systems, correct? 11 MS. GREENWALD: Objection to 12 form. 13 A. There are differences between 14 mouse and human immune systems, that is 15 correct. 16 Q. And Dr. Morse further states, 17 that same paragraph, that the spleen is the 18 major secondary lymphoid organ in the 19 mouse, whereas lymph nodes fill that niche 20 in humans, correct? 21 A. That I don't know. 22 Q. You don't know one way or the 23 other? 24 A. No. I'm sorry. 25 Q. And Dr. Morse also states in the</p>	<p style="text-align: right;">Page 169</p> <p>1 genetic and epigenetic alterations that are 2 required for both of those processes, and 3 sometimes they differ for mice and humans. 4 Q. And it is also genetic and 5 epigenetic alterations that would be 6 required for a normal cell to be mutated 7 that would sometimes differ from mouse and 8 human, correct? 9 MS. GREENWALD: Objection to 10 form. 11 A. Sometimes differ, yes, correct. 12 Q. And now Dr. Morse states in this 13 paper that you cite in your report that the 14 best-studied mouse strains -- and this is 15 on page 2 -- for potential use as models 16 for human B-cell lymphomas are the NFS.V 17 congenic mice and the AX -- I'm sorry -- 18 AKXD recombinant inbred strains, correct? 19 MR. LASKER: On the phone, can 20 you put your phone on mute? 21 Thank you. 22 Q. I will state that again. 23 On page 2, Dr. Morse states that 24 the best-studied mouse strains for 25 potential uses --</p>

<p style="text-align: right;">Page 170</p> <p>1 MS. GREENWALD: Hey, guys, if 2 you're not going to go on mute, we're 3 going to have to disconnect the line. 4 Q. OK, we'll try that one more time. 5 Dr. Morse states that the 6 best-studied mouse strains for potential 7 use as models for human B-cell lymphomas 8 are the NFS.V plus congenic mice and AKXD 9 recombinant inbred strains, correct? 10 MS. GREENWALD: Objection to 11 form. 12 A. Technically, these are not 13 strains. These are transgenic mouse 14 models. They derive from certain strains. 15 I don't know what strains they derive from. 16 But he says these two mouse 17 entities or types are the best models. He 18 would know. 19 Q. Now, none of the glyphosate 20 studies that we are going to be talking 21 about were conducted in either of these 22 mice strains? 23 A. Again, you are mistaken with what 24 this means. 25 Q. I'm not asking what it means.</p>	<p style="text-align: right;">Page 172</p> <p>1 humans? 2 MS. GREENWALD: Objection, form. 3 A. No, probably not. 4 I -- I'm hesitating because the 5 problem is OECD says these mice, CD1 mice, 6 are good mice for studying chemicals for 7 producing cancer. Hence, that document in 8 essence is recommending if you are going to 9 look for cancer, NHL is a cancer, then 10 that's the right model. 11 That's why I am hesitating. 12 That's not what he is talking about here, 13 but that's why I was hesitating. Sorry. 14 Q. But specifically, can you cite to 15 any publication that suggests that CD1 mice 16 or Swiss Albino mice are appropriate mouse 17 models for human non-Hodgkins lymphoma? 18 MS. GREENWALD: Objection, form 19 and asked and answered. 20 A. I just answered that. 21 I can point to OECD and their 22 guidance that this is an appropriate model 23 for screening for cancer, and NHL is a 24 cancer. 25 Q. Beyond the OEC document talking</p>
<p style="text-align: right;">Page 171</p> <p>1 A. No one would ever test in these 2 strains because these congenic and 3 transgenic mice all get NHL. You could 4 never detect NHL or any type of tumor like 5 that if you use these because these are 6 not -- they have already been produced to 7 induce the tumors. 8 Q. Can you cite to any -- again, 9 this is a document that you cited in your 10 expert report with respect to mouse models 11 for non-Hodgkins lymphoma. 12 Can you cite to any publication 13 that points to CD1 or Swiss Albino mice as 14 appropriate mouse models for human 15 non-Hodgkins lymphoma? 16 MS. GREENWALD: Objection, form. 17 A. For the production -- 18 Q. Yes. 19 A. -- of lymphomas from exposure to 20 a chemical? 21 Q. No. Can you cite to any source 22 document, any published document, that 23 suggests that CD1 or Swiss Albino mice are 24 appropriate mouse models for assessing the 25 potential for a substance to cause NHL in</p>	<p style="text-align: right;">Page 173</p> <p>1 about cancers generally, can you point to 2 any document that is talking about 3 non-Hodgkins lymphoma in particular -- 4 MS. GREENWALD: Objection -- 5 Q. -- with respect to CD1 mice or 6 Swiss Albino mice? 7 MS. GREENWALD: Objection to 8 form. Asked and answered. 9 A. I can't cite a single publication 10 for any cancer where a specific mouse model 11 is proposed to evaluate a chemical effect 12 to cause cancer because of the mouse model. 13 So the answer to your question is 14 I cannot cite anything specific to those 15 mouse models producing malignant lymphomas 16 and being the best model around. 17 Q. Dr. Morse includes a chart in his 18 chapter on page 2 that identifies potential 19 parallel neoplasm or cancers in human and 20 mice, correct? 21 A. Yes. 22 Q. Dr. Morse does not suggest that 23 any tumors in mice other than certain 24 B-cell lymphomas would have a potential 25 relationship to the development of</p>

<p style="text-align: right;">Page 174</p> <p>1 non-Hodgkins lymphoma in humans, does it?</p> <p>2 MS. GREENWALD: Objection to</p> <p>3 form.</p> <p>4 A. Yeah, you've lost me. Sorry.</p> <p>5 Q. Dr. Morse does not suggest that</p> <p>6 there are any types of tumors in mice other</p> <p>7 than certain B-cell lymphomas that have a</p> <p>8 parallel to NHL in humans?</p> <p>9 MS. GREENWALD: Objection, form.</p> <p>10 A. His article is about B-cell</p> <p>11 lymphomas. This table was all about B-cell</p> <p>12 lymphomas.</p> <p>13 Q. Dr. Morse does not suggest, for</p> <p>14 example, that there is any relationship</p> <p>15 between venal tumors in mice and the</p> <p>16 development of NHL in humans, correct?</p> <p>17 A. Renal tumors in mice? Is that</p> <p>18 what you were questioning me?</p> <p>19 I didn't understand that at all.</p> <p>20 Does he suggest that kidney</p> <p>21 tumors would -- kidney tumors in the mouse</p> <p>22 would predict or be directly related to</p> <p>23 this tumor in humans? No.</p> <p>24 Q. And would you -- with respect to</p> <p>25 different types of tumors in different</p>	<p style="text-align: right;">Page 176</p> <p>1 at all of the known human carcinogens from</p> <p>2 the IARC list, 101 chemicals minus -- I</p> <p>3 think it is about 86, 85 chemicals.</p> <p>4 So these are chemicals that we</p> <p>5 know they cause cancer in humans and we</p> <p>6 know where they cause cancer in humans, so</p> <p>7 each of them had cancer bioassays also</p> <p>8 done -- well, some of them didn't, so we</p> <p>9 had to throw those out.</p> <p>10 But most of them had cancer</p> <p>11 bioassays and so we could see what cancers</p> <p>12 arose in animals, what cancers arose in</p> <p>13 humans, and we could just look at the</p> <p>14 frequency of agreement.</p> <p>15 Q. Are you aware of any published</p> <p>16 article that conducts an analysis to test</p> <p>17 whether the development of renal tumors in</p> <p>18 mice is predictive of NHL in humans?</p> <p>19 MS. GREENWALD: Objection to</p> <p>20 form.</p> <p>21 A. Um, no.</p> <p>22 THE VIDEOGRAPHER: I'm</p> <p>23 approaching the end of the videotape.</p> <p>24 MR. LASKER: We will take a</p> <p>25 break.</p>
<p style="text-align: right;">Page 175</p> <p>1 organs, would you agree that evidence of</p> <p>2 renal tumors in a mouse would not be</p> <p>3 directly relevant to the development of</p> <p>4 non-Hodgkins lymphomas in humans, correct?</p> <p>5 MS. GREENWALD: Objection to</p> <p>6 form.</p> <p>7 A. I'm not sure.</p> <p>8 We did a paper on this, and I</p> <p>9 thought it came out recently, but I</p> <p>10 can't -- I can't tell.</p> <p>11 And we looked at whether this</p> <p>12 tumor in this mouse seems to associate with</p> <p>13 this tumor and this human. And I don't</p> <p>14 remember if that particular case popped out</p> <p>15 or not.</p> <p>16 So I can't answer the question</p> <p>17 very well. Sorry.</p> <p>18 Q. So if I understand correctly, you</p> <p>19 have done an assessment of certain tumor</p> <p>20 types in mice to determine whether or not</p> <p>21 they are predictive of certain tumor types</p> <p>22 in humans?</p> <p>23 MS. GREENWALD: Objection to</p> <p>24 form.</p> <p>25 A. We have done a paper that looks</p>	<p style="text-align: right;">Page 177</p> <p>1 THE VIDEOGRAPHER: The time is</p> <p>2 12:32 p.m. We are off the record.</p> <p>3 (Luncheon recess)</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

<p style="text-align: right;">Page 178</p> <p>1 AFTERNOON SESSION</p> <p>2 1:20 p.m.</p> <p>3 THE VIDEOGRAPHER: The time is</p> <p>4 1:20 p.m. We are on the record.</p> <p>5 BY MR. LASKER:</p> <p>6 Q. Good afternoon, Dr. Portier.</p> <p>7 A. I hope you enjoyed your lunch.</p> <p>8 Q. Wonderful.</p> <p>9 Before the break, we were</p> <p>10 discussing when you first looked at the</p> <p>11 data tables for the animal cancer bioassays</p> <p>12 that were provided with the Greim</p> <p>13 publication.</p> <p>14 Would I be correct in my</p> <p>15 understanding that you would have reviewed</p> <p>16 those data tables prior to your submission</p> <p>17 to EPA in which you presented a pooled</p> <p>18 analysis of the data from those animal</p> <p>19 studies?</p> <p>20 MS. GREENWALD: Objection,</p> <p>21 form.</p> <p>22 A. If I remember correctly, all of</p> <p>23 the pooled analysis in the data I submitted</p> <p>24 to EPA were the mouse lymphomas and the</p> <p>25 hemangiosarcomas and the kidney tumors and</p>	<p style="text-align: right;">Page 180</p> <p>1 studies, I have to pull in nonsignificant</p> <p>2 findings from the other studies and none of</p> <p>3 the regulatory agencies provide</p> <p>4 nonsignificant findings.</p> <p>5 So when I decided to pool the rat</p> <p>6 studies, that's when I really had to dig in</p> <p>7 there.</p> <p>8 Q. I don't know if we have three</p> <p>9 copies of this now.</p> <p>10 MR. LASKER: Let's go off the</p> <p>11 record for a minute.</p> <p>12 THE VIDEOGRAPHER: The time is</p> <p>13 1:25 p.m. We are off the record.</p> <p>14 (Recess)</p> <p>15 THE VIDEOGRAPHER: The time is</p> <p>16 1:27 p.m. We are on the record.</p> <p>17 Q. Dr. Portier, you note in your</p> <p>18 expert report that because of the large</p> <p>19 number of evaluations that have been</p> <p>20 done -- the large number of glyphosate</p> <p>21 rodent studies that have been done, that</p> <p>22 raises a concern that false positives could</p> <p>23 be exaggerated, correct?</p> <p>24 A. Let me break down your sentence</p> <p>25 for a second. Exaggerated I think is the</p>
<p style="text-align: right;">Page 179</p> <p>1 the answer to your question is no, I'd</p> <p>2 probably not reviewed it before then</p> <p>3 because all those came from EFSA review.</p> <p>4 Q. When you, in your pooling of data</p> <p>5 with respect to -- let's actually show him</p> <p>6 the October 4, 2016. It has already been</p> <p>7 marked.</p> <p>8 It is 15-20, you can look at</p> <p>9 15-20.</p> <p>10 MS. GREENWALD: They are not</p> <p>11 all here.</p> <p>12 THE WITNESS: It's the bottom one</p> <p>13 because I reordered them just now.</p> <p>14 A. Yes, OK. Let's see what pooled</p> <p>15 analyses I did. OK, so EPA's -- I did not</p> <p>16 pool the rat studies here.</p> <p>17 Q. So is it your recollection then</p> <p>18 that you would have first reviewed or if we</p> <p>19 were trying to get to the day where you</p> <p>20 first reviewed the Greim supplement, it</p> <p>21 would be at the time that you had pooled</p> <p>22 analysis for some of the rat studies?</p> <p>23 A. That's when I seriously got into</p> <p>24 looking at Greim's very carefully because</p> <p>25 in order to do the pooling in any of these</p>	<p style="text-align: right;">Page 181</p> <p>1 wrong term.</p> <p>2 Q. Why don't we mark the revised</p> <p>3 report. This is next in line.</p> <p>4 (Exhibit 15-30, expert report of</p> <p>5 Christopher J. Portier marked for</p> <p>6 identification, as of this date.)</p> <p>7 Q. Just for the record, Dr. Portier,</p> <p>8 Exhibit 15-30 is your revised expert report</p> <p>9 that was provided to us on or about</p> <p>10 June 27, 2017, and on page 50 of your</p> <p>11 report, that second paragraph, midway</p> <p>12 through, you state, "Because of the large</p> <p>13 number of evaluations done in an individual</p> <p>14 animal carcinogenicity study, there is</p> <p>15 concern that the false positive rates could</p> <p>16 be exaggerated." Correct?</p> <p>17 A. That's what I said. Surprised I</p> <p>18 used exaggerated.</p> <p>19 Q. Well, the point, in any event,</p> <p>20 that you're making there is that if 20</p> <p>21 evaluations are done and a finding is</p> <p>22 deemed significant at a p-value of less</p> <p>23 than .05, then you would expect that one of</p> <p>24 those evaluations would report out as being</p> <p>25 positive simply due to chance, correct?</p>

<p style="text-align: right;">Page 182</p> <p>1 MS. GREENWALD: Objection, 2 form. 3 A. That's what I wrote and that is 4 correct. 5 Q. So a false positive then is when 6 an individual test or trend meets the p 7 less than .05 standard, but it is, in fact, 8 due to chance rather than a carcinogenicity 9 effect of a tested compound, correct? 10 A. A false positive is when there is 11 no effect and you falsely declare it's 12 positive either by statistical evaluation 13 or whatever. That would be a false 14 positive. 15 Q. And the point you're making here 16 and, in particular, you state, for example, 17 that there were -- on page 50, you list 329 18 total sites for rats and 16.5 that would be 19 expected. Do you see that? 20 A. That is correct. 21 Q. And that again, that is the same 22 point you're making that you would expect 1 23 out of 20 of those tests to report with a p 24 less than .05 simply due to chance, 25 correct?</p>	<p style="text-align: right;">Page 184</p> <p>1 that, by chance alone, you would expect 16 2 or 17 to report out with a p less than .05, 3 correct? 4 A. I'm -- that's correct. You know 5 this table changed -- 6 Q. I do understand that. I 7 understand. 8 A. Thank you. 9 Q. You have further broken this 10 down, down test by sex and by strain to 11 look at what you would expect -- how many 12 trends you would expect to see with ps less 13 than .05 by chance and then comparing them 14 to what you actually observe in the data, 15 correct? 16 A. That is correct. 17 Q. And let's pull out your rebuttal 18 report. And we will mark this as 15-31. 19 (Exhibit 15-31, Rebuttal Report 20 of Christopher J. Portier marked for 21 identification, as of this date.) 22 Q. And I think this statement is the 23 same in both your initial report and in 24 your rebuttal report, but it appears at 25 page 7 on your rebuttal report.</p>
<p style="text-align: right;">Page 183</p> <p>1 A. Correct. 2 Q. And the reason that complicates 3 the analysis of the glyphosate data is 4 because there are so many evaluations that 5 have been conducted in the animal studies, 6 correct? 7 MS. GREENWALD: Objection to 8 form. 9 A. The problem of false positives 10 affects every study. But where you have, 11 for example, with glyphosate, hundreds of 12 analyses that can be conducted, you're 13 going to be expecting to have a number of 14 findings p less than .05 simply due to 15 chance, correct. 16 MS. GREENWALD: Objection to 17 form. 18 A. "Expectation" is the important 19 word there. You expect to see it. That 20 doesn't mean you necessarily saw it but you 21 do expect it. 22 Q. So you're making the point here 23 on page 50 is you have 329 total sites as 24 you set forth on table 15 that could be 25 examined or in the rat studies, and from</p>	<p style="text-align: right;">Page 185</p> <p>1 You are discussing the number of 2 trends that you see in the data or that you 3 report in the data as compared to the 4 number of trends that you would expect 5 simply by chance. Correct? 6 MS. GREENWALD: Objection, 7 form. 8 A. At the bottom of page 7, I 9 discussed the new modified table 15 which 10 discusses what we were discussing earlier. 11 Same table. 12 Q. And what you state with respect 13 to the rats -- and I want to focus on that 14 now -- is with the exception of male 15 Sprague Dawley rats, the observed number of 16 tumors are at or near the expected number 17 for the different sex strain groups in 18 mice, correct? 19 A. That's correct. 20 Q. For female Sprague Dawley rats, 21 you observed the number of trends that 22 would be expected due to chance, correct? 23 A. I believe so, yes. 24 Q. For male Wistar rats, you found 25 or observed the number of trends p less</p>

<p style="text-align: right;">Page 186</p> <p>1 than .05 that you expect to see due to 2 chance, correct? 3 A. That is correct. 4 Q. And for the male Wistar rats, 5 likewise, you observe the number of trends 6 of p less than .05 you would expect due to 7 chance, correct? 8 A. That is correct. 9 Q. But you nonetheless opine, based 10 upon your analysis, that the data shows 11 that glyphosate causes hepatocellular 12 adenomas and skin keratoacanthomas in male 13 Wistar rats and it causes mammary gland 14 adenomas and adenocarcinomas in female 15 Wistar rats, correct? 16 MS. GREENWALD: Objection to 17 form. 18 A. I don't know about opining, but I 19 certainly discuss those tumors and come to 20 a conclusion that they are probably caused 21 by glyphosate. 22 Q. So your conclusion is that the 23 tumors that you identified for Wistar rats 24 that have trends less than .05, which is 25 the same number you would expect due to</p>	<p style="text-align: right;">Page 188</p> <p>1 Q. Due to chance? 2 A. Due to chance. 3 Q. But your opinion is, in fact, 4 this is evidence that glyphosate caused 5 those tumors in those rats, correct? 6 MS. GREENWALD: Objection, 7 form. 8 A. What is "this"? What is "this is 9 evidence"? 10 Q. The trends that you observed of p 11 less than .05 for Wistar rats which are 12 the same trends you would expect to see due 13 to chance, in your opinion, is evidence 14 that glyphosate caused those tumors in 15 Wistar rats. Correct? 16 MS. GREENWALD: Objection, 17 form. 18 A. It's part of the evidence. Yes. 19 Q. You reached your rat causation 20 opinions through the application of a 21 pooling methodology, correct? 22 A. Yes, I did. 23 Q. And you agreed that methods for 24 combining analyses of multiple animal 25 cancer bioassays are not available in the</p>
<p style="text-align: right;">Page 187</p> <p>1 chance, is, in fact, evidence of causation, 2 correct? 3 MS. GREENWALD: Objection to 4 form. 5 A. In fact -- they are part of the 6 evaluation of causation. The skin 7 keratoacanthomas were also seen in the 8 Sprague Dawley rats which is the reason I 9 did not decide that they were just random 10 chance and the mammary gland carcinomas and 11 adenomas and carcinomas, because it's the 12 same progression of tumor, there is greater 13 evidence that it remains. 14 So a decision to argue for a 15 positive finding is not just statistical. 16 It's also tied to the actual biology. 17 Q. Well, Dr. Portier, that wasn't my 18 question. 19 You observed the number p less 20 than .05 trends for Wistar rats that would 21 be expected due solely to chance, correct? 22 MS. GREENWALD: Objection, 23 asked and answered. 24 A. I observed the same number as 25 expectation.</p>	<p style="text-align: right;">Page 189</p> <p>1 scientific literature, correct? 2 MS. GREENWALD: Objection, 3 form. 4 A. Say again. 5 Q. You agree that methods for the 6 combined analysis of multiple animal cancer 7 bioassays are not available to the 8 scientific literature? 9 MS. GREENWALD: Same 10 objection. 11 A. I believe I wrote that, but it is 12 now incorrect. 13 Q. At the time that you drafted your 14 revised expert report, it was your 15 understanding that methods for the combined 16 analysis of multiple animal cancer 17 bioassays are not available in the 18 scientific literature, correct? 19 A. That is correct. 20 Q. And because of that, you 21 developed the pooling methodology that you 22 used for the purposes of your glyphosate 23 analysis, correct? 24 A. Oh, I can't take credit for 25 developing it, no.</p>

<p style="text-align: right;">Page 190</p> <p>1 Q. Can you cite -- first of all, 2 have you ever published a paper in which 3 you used this pooling methodology that you 4 use in this case? 5 A. I'd have to go back and look. 6 The pooling methodology is simply taking 7 information from multiple laboratories or 8 multiple experiments and putting it 9 together and doing one analysis, and I 10 believe I have, using the same technology, 11 taken data from multiple experiments and 12 done the analysis. 13 So I can't take credit for it, 14 nor can I say I never did it. 15 Q. Let me ask you again. Can you 16 cite to my -- first of all, have you ever 17 published a paper in which you use this 18 pooling methodology? 19 MS. GREENWALD: Objection, 20 asked and answered. 21 A. I think I have. 22 Q. Can you cite to which paper that 23 is? 24 A. I would have to go look at the 25 papers.</p>	<p style="text-align: right;">Page 192</p> <p>1 Brammer study. 2 A. Yes. 3 Q. And then you have on the next 4 page, 28 is Brammer, 30 is Suresh, and 31 5 is -- I'm sorry, it bounces around a little 6 bit. 32 is Wood, correct? 7 A. Yes. 8 Q. Those are the three studies in 9 Wistar rats, correct? 10 A. Yes. 11 Q. So in the Brammer study reported 12 on page 28, there were more mammary tumors 13 found in the female Wistar rats that were 14 not treated with glyphosate than were found 15 in any of the three treated groups 16 individually, correct? 17 A. More mammary grand adenomas and 18 carcinomas in the control group than the 19 treated groups, yes. 20 Q. And then the second Wistar study 21 is Suresh. That's reported in page 30 of 22 your expert report, correct? 23 A. Yes. 24 Q. In that study, the data finds a 25 statistically significant inverse trend or</p>
<p style="text-align: right;">Page 191</p> <p>1 Q. Can you cite, sitting here today, 2 to any published paper by any scientist 3 using this pooling methodology in analyzing 4 animal cancer bioassay data? 5 A. Yes. 6 Q. Which article? 7 A. The someone asked me to look -- 8 so Mike Dourson is going to be the new 9 assistant administrator for EPA and I was 10 asked to look at some of his papers and he 11 does it in two of his papers. 12 Q. Can you say the name again? 13 A. Mike Dourson, D-O-U-R-S-O-N. 14 Q. Let's take a look at how you 15 applied the pooling methodology in this 16 case. 17 Now, we already talked about the 18 fact that you opine, based upon your 19 pooling analysis, that glyphosate causes 20 mammary gland tumors in female Wistar rats, 21 correct? 22 A. Wistar rats, I think so, yes. 23 Q. We can look at your expert report 24 at page 28. And this is 15-30. Starting 25 at page -- 15-30, you're talking about the</p>	<p style="text-align: right;">Page 193</p> <p>1 negative trend for mammary tumors with 2 increased doses of glyphosate, correct? 3 MS. GREENWALD: Objection, 4 form. 5 A. I don't actually know. I just 6 see the p trend. I don't know what the 7 slope was. 8 Q. But the p-value, if you have a 9 p-value of .970 for a positive trend, that 10 translates also to a trend of .03 for a 11 negative trend. That's the way the math 12 works, right? 13 A. Probably. I would want to look 14 at the statistic to be sure, but probably, 15 yes. 16 Q. So with that understanding, the 17 Suresh study found an inverse trend, a 18 negative trend for mammary glands that 19 would be significant to p equals .03, 20 correct? 21 MS. GREENWALD: Objection, 22 form. 23 A. I am not sure. 24 Q. The Suresh study found more 25 mammary gland tumors in the controls than</p>

<p style="text-align: right;">Page 194</p> <p>1 in the highest dose group, correct?</p> <p>2 A. That is correct.</p> <p>3 Q. And if the p trend for mammary</p> <p>4 gland adenomas and carcinomas in Suresh is</p> <p>5 an inverse trend, p equals .03, that would</p> <p>6 mean that the incidence of mammary gland</p> <p>7 tumors in female Wistar rats decreased as</p> <p>8 the dose increased by a statistical</p> <p>9 measure, correct?</p> <p>10 MS. GREENWALD: Objection,</p> <p>11 form.</p> <p>12 A. Because of the high response in</p> <p>13 the control, yes, that's probably the case.</p> <p>14 Q. The third study you have for</p> <p>15 Wistar rats is the Wood study and that is a</p> <p>16 study that found a -- you report a</p> <p>17 statistically positive trend increasing</p> <p>18 tumors for mammary gland tumors, correct?</p> <p>19 A. For mammary gland adenocarcinomas</p> <p>20 and mammary gland adenocarcinomas and</p> <p>21 adenomas combined. Yes.</p> <p>22 Q. So for the three Wistar rat</p> <p>23 studies for mammary tumors, we have one</p> <p>24 study, the first one study we looked at, by</p> <p>25 Brammer, where there were more tumors found</p>	<p style="text-align: right;">Page 196</p> <p>1 A. OK, say the question again.</p> <p>2 Q. When you pooled the three Wistar</p> <p>3 rat studies together, you did not find any</p> <p>4 increased risk of mammary tumors in female</p> <p>5 Wistar rats with treatment for glyphosate,</p> <p>6 correct?</p> <p>7 A. Yes, I got a p-value well above</p> <p>8 .05.</p> <p>9 Q. To reach your causation</p> <p>10 opinion -- and you did reach an opinion</p> <p>11 that glyphosate causes mammary tumors in</p> <p>12 Wistar female rats. We just talked about</p> <p>13 that. To reach that opinion, you removed</p> <p>14 Suresh from your pooling analysis, correct?</p> <p>15 MS. GREENWALD: Objection to</p> <p>16 form.</p> <p>17 A. First, I want to check the</p> <p>18 conclusion. So I'm very clear on what I</p> <p>19 said.</p> <p>20 Q. On page 52, you state that</p> <p>21 glyphosate causes mammary gland adenomas</p> <p>22 and adenocarcinomas in female Wistar rats,</p> <p>23 right? That's your opinion in your expert</p> <p>24 report, correct, Dr. Portier?</p> <p>25 A. Yes, yes. It should have said</p>
<p style="text-align: right;">Page 195</p> <p>1 in the controls than in any of the treated</p> <p>2 groups.</p> <p>3 We have a second study by Suresh</p> <p>4 that reported what appears to be a</p> <p>5 statistically significant negative trend,</p> <p>6 meaning less tumors, less mammary gland</p> <p>7 tumors as the dose increases. And we have</p> <p>8 a third study that shows an increased trend</p> <p>9 of more tumors with more dose. Correct?</p> <p>10 MS. GREENWALD: Object to the</p> <p>11 form.</p> <p>12 A. We have the Brammer study which</p> <p>13 is negative; the Suresh study which is</p> <p>14 negative; and the Wood study which is</p> <p>15 positive.</p> <p>16 Q. Just to be clear again, the</p> <p>17 Suresh study appears to be statistically</p> <p>18 significant negative, correct?</p> <p>19 A. Correct.</p> <p>20 Q. Now, when you pooled these</p> <p>21 studies together, and you report that -- I</p> <p>22 think on page 33 -- when you pooled the</p> <p>23 three studies together, you did not find</p> <p>24 any increased risk of mammary tumors in</p> <p>25 female Wistar rats, correct?</p>	<p style="text-align: right;">Page 197</p> <p>1 limited. I'm sorry, that was a -- that was</p> <p>2 a mistake. That's in this paragraph on</p> <p>3 page 33.</p> <p>4 Q. To reach your opinion to support</p> <p>5 the idea that there is a causation with</p> <p>6 mammary tumors in Wistar rats, you dropped</p> <p>7 the Suresh study from your pooling analysis</p> <p>8 completely, correct?</p> <p>9 A. I did a sensitivity analysis in</p> <p>10 which I removed the one study that might</p> <p>11 have not matched the other two. And I did</p> <p>12 a separate pooling. That is correct.</p> <p>13 Q. So by removing the statistically</p> <p>14 significant negative trend, decreasing</p> <p>15 tumors with increasing glyphosate use, in</p> <p>16 Suresh, you were able to pool the two other</p> <p>17 studies to opine that there was a positive</p> <p>18 trend for mammary tumors in Wistar rats</p> <p>19 with glyphosate, correct?</p> <p>20 MS. GREENWALD: Objection to</p> <p>21 form.</p> <p>22 A. When, with justification, I</p> <p>23 removed the Suresh study, I could see a</p> <p>24 significant finding; and, hence, I said</p> <p>25 there was limited support for that tumor.</p>

<p style="text-align: right;">Page 198</p> <p>1 Q. Well, you're stating that now.</p> <p>2 A. No, it's right there.</p> <p>3 Q. In your expert report?</p> <p>4 A. Page 33.</p> <p>5 Q. Page 52.</p> <p>6 A. Page 33, "Given the mixed results</p> <p>7 for the pooling from this tumor, I conclude</p> <p>8 there is limited support for the notion</p> <p>9 that glyphosate can cause mammary gland</p> <p>10 adenomas and adenocarcinomas in Wistar</p> <p>11 rats."</p> <p>12 I've already conceded that in the</p> <p>13 final conclusion I should have used the</p> <p>14 word "limited" for that tumor.</p> <p>15 Q. If you had instead removed the</p> <p>16 Wood study from your analysis and pooled</p> <p>17 instead the Suresh study and the Brammer</p> <p>18 study, you would have reported a</p> <p>19 statistically significant protective effect</p> <p>20 of glyphosate against mammary tumors,</p> <p>21 wouldn't you have?</p> <p>22 MS. GREENWALD: Objection,</p> <p>23 form.</p> <p>24 A. That, I do not know.</p> <p>25 Q. You didn't conduct that</p>	<p style="text-align: right;">Page 200</p> <p>1 the control population, substantially, than</p> <p>2 either of the other two studies. That</p> <p>3 raises a flag that suggests that those</p> <p>4 studies are not replicates of each other</p> <p>5 and one should be careful when combining</p> <p>6 them.</p> <p>7 Q. In the mammary gland tumors, you</p> <p>8 had, in the Wood study, eight out of 51</p> <p>9 with tumors in the high dose group and that</p> <p>10 is significantly different than what you</p> <p>11 found in the other two studies, in Suresh</p> <p>12 and Brammer, correct?</p> <p>13 MS. GREENWALD: Objection,</p> <p>14 form.</p> <p>15 A. There were different doses.</p> <p>16 That's -- they are not equivalent</p> <p>17 connections and I don't know if they were</p> <p>18 statistically significant or not. They</p> <p>19 were different. There is no doubt about</p> <p>20 it.</p> <p>21 Q. You used a similar pooling</p> <p>22 methodology to reach your opinion that</p> <p>23 glyphosate causes hepatocellular adenomas</p> <p>24 in male Wistar rats, correct?</p> <p>25 A. I believe I did.</p>
<p style="text-align: right;">Page 199</p> <p>1 sensitivity analysis?</p> <p>2 A. I had no reason to believe the</p> <p>3 Wood study was different from the Animoto</p> <p>4 study, or whatever we are talking about.</p> <p>5 Wood and -- Wood and Animoto was the two I</p> <p>6 pooled, correct? Wood and Brammer, Wood</p> <p>7 and Brammer.</p> <p>8 I had no reason to believe that</p> <p>9 Wood was different than Brammer. But I had</p> <p>10 reason to believe that Suresh was different</p> <p>11 than the other two.</p> <p>12 Q. With respect to mammary tumors,</p> <p>13 what was your basis for concluding that</p> <p>14 Suresh was different than Wood and Brammer?</p> <p>15 A. When a -- when a strain of</p> <p>16 animals shows any tumor, whether it's the</p> <p>17 adenocarcinomas or the liver tumors, at a</p> <p>18 rate which is incredibly different than the</p> <p>19 others, it suggests that the strains are</p> <p>20 not -- they are not exactly operating the</p> <p>21 same.</p> <p>22 The hepatocellular adenomas</p> <p>23 and carcinomas in the Suresh data set -- I</p> <p>24 believe it was the hepatocellular adenomas</p> <p>25 and carcinomas were substantially larger in</p>	<p style="text-align: right;">Page 201</p> <p>1 Q. Neither the Suresh study or Wood</p> <p>2 study found any increased incidence of</p> <p>3 hepatocellular adenomas in male Wistar</p> <p>4 rats, correct?</p> <p>5 A. OK, let's see here. I was</p> <p>6 looking at the wrong ones. The first</p> <p>7 paragraph under joint analysis.</p> <p>8 Q. It might be easier to look at the</p> <p>9 tables, 28, 30 and 32. Neither the Suresh</p> <p>10 study nor the Wood study found any</p> <p>11 increased incidence in hepatocellular</p> <p>12 adenomas in male Wistar rats, correct?</p> <p>13 A. No statistically significant</p> <p>14 increased incidence, that is correct.</p> <p>15 Q. And when you pooled the results</p> <p>16 of the three Wistar rat studies, you</p> <p>17 likewise did not find a positive trend for</p> <p>18 hepatocellular adenomas, correct?</p> <p>19 A. I'm trying to find where I did</p> <p>20 the pooling and talked about whether it is</p> <p>21 significant or not.</p> <p>22 I didn't pool all three studies.</p> <p>23 I'm sorry, I didn't pool them here. I</p> <p>24 don't see an analysis of the pooled three</p> <p>25 studies because the hepatocellular adenomas</p>

1 seen in the Suresh study were 48 percent in
2 controls; whereas the other two studies,
3 the hepatocellular adenomas were down in
4 the 0 to 1 percent to 2 percent range.
5 Hence, pooling all three of them would be a
6 mistake from the start. So I never even
7 bothered.

8 Q. You reach your causation opinion
9 based on a pooling that dropped the Suresh
10 study out of the analysis, correct?

11 MS. GREENWALD: Objection,
12 form and asked and answered.

13 A. I didn't drop the Suresh -- I
14 didn't drop the Suresh out of the analysis,
15 I never put it in.

16 Q. And in your discussion of that
17 analysis, or your reasoning there for not
18 including or -- in your evaluation, the
19 hepatocellular adenomas, you state that, to
20 reject a finding based upon only one in
21 three being positive is the same as
22 rejecting a coin being fair if, in three
23 flips of the coin, the result is one head
24 and two tails, correct?

25 MS. GREENWALD: Objection,

1 about is rejecting a coin being fair,
2 correct?

3 MS. GREENWALD: Objection to
4 the form.

5 A. No, the rejection of a coin being
6 fair here is that it's impossible to do it
7 with only three flips.

8 Q. Right.

9 A. It's not that I can't reject a
10 coin being fair. Of course I can if I do a
11 large enough sample size.

12 So it's the concept that you
13 can't do this that is being brought up
14 there.

15 Q. In scientific analyses, you start
16 off with a null hypothesis and then you try
17 to reject that hypothesis, correct? That's
18 the scientific methodology?

19 A. Correct. Well, you don't try to
20 reject the hypothesis. If the data pops
21 that way, it rejects the hypothesis.

22 Q. So for a coin toss, is the null
23 hypothesis that the coin is fair and you
24 are trying to reject that, correct?

25 MS. GREENWALD: Objection,

1 form.

2 A. I do write that in here.

3 Q. And you -- so you state that to
4 reject causation based upon the findings of
5 one positive trend and two null findings
6 for hepatocellular adenomas, then it is the
7 same as rejecting a coin as being fair if
8 in three flips of the coin, the result is
9 one head and two tails, correct?

10 A. Yes. The rest of it says you
11 can't -- it simply is not possible and
12 there is a better way to address these
13 findings.

14 Q. And your pooling methodology for
15 the glyphosate animal studies then seeks to
16 determine whether the data is sufficient to
17 reject a finding of causation for
18 glyphosate and cancer in rodents, correct?

19 A. No. The pooling is there to
20 evaluate whether, for this tumor, having
21 seen a positive in one or two studies, does
22 that positive stay when you group it with
23 all the rest of the studies that it should
24 be appropriately grouped with.

25 Q. And the analogy you are talking

1 form.

2 A. If that's your hypothesis, yes.

3 Q. For glyphosate and the animal
4 studies, the null hypothesis is that
5 glyphosate does not cause tumors, correct?

6 MS. GREENWALD: Some
7 objection, form.

8 A. The null hypothesis is that it
9 does not cause an increase in tumors, that
10 is correct.

11 Q. And your assessment, though, is
12 looking to see whether the data is
13 sufficient to reject the possibility that
14 glyphosate does cause tumors, correct?

15 MS. GREENWALD: Objection,
16 form.

17 A. No, the test is to see whether
18 the rejection of the null hypothesis from
19 the one study is -- remains or is -- goes
20 away when I pool the data.

21 Q. So you are pooling the data to
22 see if you can support -- strike that.

23 So you are pooling the data of
24 those two studies without the third study
25 to see if you can then reject the finding

<p style="text-align: right;">Page 206</p> <p>1 in the third study, is that correct?</p> <p>2 MS. GREENWALD: Objection,</p> <p>3 form, asked and answered.</p> <p>4 A. No.</p> <p>5 Q. You also exclude the Suresh study</p> <p>6 from your pooling analysis to support your</p> <p>7 opinion in your rebuttal report that there</p> <p>8 is a suggestion that glyphosate causes</p> <p>9 pituitary tumors in -- strike that.</p> <p>10 I want to get that right. Yes.</p> <p>11 At page 6 of your rebuttal report, you also</p> <p>12 exclude the Suresh study from your pooling</p> <p>13 analysis to support your opinion that there</p> <p>14 is a suggestion that glyphosate causes</p> <p>15 pituitary tumors in female Sprague Dawley</p> <p>16 rats, correct?</p> <p>17 MS. GREENWALD: Objection to</p> <p>18 form.</p> <p>19 A. I did not include -- I don't know</p> <p>20 if I did the three. I don't think I --</p> <p>21 I'm -- yes, that is -- I believe that's</p> <p>22 correct.</p> <p>23 Q. Now, you used that same pooling</p> <p>24 methodology to conclude that there was a</p> <p>25 statistically significant positive trend</p>	<p style="text-align: right;">Page 208</p> <p>1 just checking my -- yes. That must be what</p> <p>2 I used in my table 8.</p> <p>3 Q. So you dropped or did not include</p> <p>4 Suresh for your pooling methodology when it</p> <p>5 resulted in a finding of no increased trend</p> <p>6 for mammary gland or hepatocellular tumors,</p> <p>7 but then included Suresh in your pooling</p> <p>8 analysis to calculate a positive trend for</p> <p>9 skin keratoacanthomas, correct?</p> <p>10 MS. GREENWALD: Objection to</p> <p>11 form.</p> <p>12 A. No.</p> <p>13 Q. Did you not include Suresh in</p> <p>14 your analysis for skin keratoacanthomas?</p> <p>15 A. In all of them, maybe all of them</p> <p>16 except hepatocellular adenomas, I did</p> <p>17 analyses with Suresh included and without</p> <p>18 Suresh included. All of those analyses</p> <p>19 play a role in my decision about whether</p> <p>20 this is a real tumor finding or a chance</p> <p>21 tumor finding and how much support there</p> <p>22 is.</p> <p>23 Q. And in your finding of a positive</p> <p>24 trend, as you reported in your final</p> <p>25 opinion, to find a positive trend for</p>
<p style="text-align: right;">Page 207</p> <p>1 for skin keratoacanthomas in male Wistar</p> <p>2 rats, correct? And that's initially your</p> <p>3 revised report at page 32.</p> <p>4 A. Page 32?</p> <p>5 Q. I'm sorry. Page 31.</p> <p>6 A. That is correct.</p> <p>7 Q. So for skin keratoacanthomas,</p> <p>8 pooling the Wood and Brammer studies alone</p> <p>9 did not result in a statistically</p> <p>10 significant positive trend for male Wistar</p> <p>11 rats, correct?</p> <p>12 A. It resulted in a p-value for</p> <p>13 trend of 0.053 which was barely not</p> <p>14 statistically significant.</p> <p>15 Q. So for your skin keratoacanthoma</p> <p>16 causation opinion, you did pool, include</p> <p>17 the Suresh study in your pooling analysis</p> <p>18 to come up with a statistically significant</p> <p>19 finding, correct?</p> <p>20 MS. GREENWALD: Objection,</p> <p>21 form.</p> <p>22 A. I believe I wasn't that marginal.</p> <p>23 Let me look at my summary.</p> <p>24 Q. Page 35.</p> <p>25 A. I've got you. I'm sorry, I'm</p>	<p style="text-align: right;">Page 209</p> <p>1 mammary gland tumors and hepatocellular</p> <p>2 adenomas, you used a pooling only of the</p> <p>3 Wood and Brammer study, and to reach your</p> <p>4 opinion with respect to keratoacanthomas,</p> <p>5 you used a pooling of all three studies,</p> <p>6 correct?</p> <p>7 MS. GREENWALD: Objection,</p> <p>8 form.</p> <p>9 A. I used all of the analyses that</p> <p>10 it had done to that time.</p> <p>11 Q. For mammary gland tumors and the</p> <p>12 hepatocellular adenomas, to find a</p> <p>13 statistically significant positive trend,</p> <p>14 you found that only when you pooled just</p> <p>15 the two studies, Brammer and Wood, correct?</p> <p>16 A. As I mentioned before, I saw an</p> <p>17 almost statistically significant p equals</p> <p>18 p.053 in the combined analysis.</p> <p>19 I do not characterize it as</p> <p>20 negative. I characterize that as almost</p> <p>21 significant.</p> <p>22 Q. Just to be clear, we are talking</p> <p>23 about mammary gland tumors and</p> <p>24 hepatocellular adenomas. Is it your</p> <p>25 testimony now that you found an almost</p>

<p style="text-align: right;">Page 210</p> <p>1 significant trend with those two tumors 2 when you combined the three studies? I 3 think you are confusing it now for skin -- 4 A. I am sorry, for skin 5 keratoacanthomas. 6 Q. No, let me -- for mammary gland 7 adenomas and hepatocellular adenomas -- I 8 am sorry, for mammary gland tumors and for 9 hepatocellular adenomas, you opined to a 10 statistically significant increased trend 11 by pooling just Wood and Brammer, correct? 12 MS. GREENWALD: Objection, 13 form. 14 A. For mammary gland adenomas and 15 adenocarcinomas combined. 16 Q. And hepatocellular adenomas for 17 those two tumors, you reported a -- or you 18 opined to a statistically significant 19 increased trend by pooling Brammer and Wood 20 and not including Suresh, correct? 21 MS. GREENWALD: Objection, 22 form. 23 A. For those two tumors, I saw -- 24 not for -- for hepatocellular adenomas, I 25 did not pool the three. So I do not know</p>	<p style="text-align: right;">Page 212</p> <p>1 Q. All three of the studies were 2 pooled to get that statistically 3 significant trend, correct? 4 A. No. The statistically 5 significant -- you're confusing my decision 6 to say this is glyphosate-related with any 7 given one test or not. If you look through 8 here, you will see is that there are 9 subtleties involved in this. 10 In this case, when pooled with 11 the Suresh study, it was highly -- it was 12 highly -- no, it was statistically 13 significant for the keratoacanthomas, and 14 when it was not pooled, it was almost 15 statistically significant for the 16 keratoacanthomas. Therefore, I decided 17 that there is a -- there is fire here and 18 there is probably something going on. And 19 that's why I made the decision to say that 20 it was causal. 21 Q. And you reported that trend as 22 statistically significant in your tables, 23 correct? 24 A. In the table 8, I put three dots 25 for the triple. I should have put one.</p>
<p style="text-align: right;">Page 211</p> <p>1 what the result of that pooling would be. 2 When I pooled the two, yes, I saw 3 significant p-value. For that tumor. 4 Q. And for mammary gland tumors, 5 when you pooled the three, you didn't see a 6 statistically significant trend, but when 7 you pooled the two, you did? 8 A. That is correct. 9 Q. And that was the basis for your 10 opinion with respect to mammary gland 11 tumors, correct? 12 MS. GREENWALD: Objection, 13 form. 14 A. That's the basis for my opinion 15 that there is limited support for the 16 notion that glyphosate can cause mammary 17 gland adenomas and adenocarcinomas in 18 Wistar rats. 19 Q. And for skin keratoacanthomas, 20 where you report a statistically 21 significant trend on your table, that is 22 based upon the pooling all three of the 23 studies, correct, including Suresh? 24 A. As I said before, it's based upon 25 everything that went on in that evaluation.</p>	<p style="text-align: right;">Page 213</p> <p>1 Q. Let's look at your pooling 2 methodology for Sprague Dawley rats in your 3 rebuttal report and this is page 6. 4 You opine that the Sprague Dawley 5 rat study suggests a potential for 6 glyphosate to cause adrenal cortical tumors 7 in female rats, correct? That's page 6. 8 MS. GREENWALD: Objection, form. 9 Q. Second paragraph, first full 10 paragraph on page 6, returning to table 2. 11 A. So ask your question again, 12 please. 13 Q. Through -- in your rebuttal 14 report, you opine that the Sprague Dawley 15 rat studies suggest a potential for 16 glyphosate to cause adrenal cortical tumors 17 in female rats, correct? 18 MS. GREENWALD: Objection, 19 form. 20 A. That is correct. 21 Q. When you pooled the results for 22 the four Sprague Dawley studies, your 23 pooling methodology reported a 24 statistically significant negative trend 25 for glyphosate and adrenal cortical tumors,</p>

1 correct?

2 A. That is, I believe, correct.

3 Q. So in other words, you found, by
4 pooling the studies, that there was a
5 decrease in the incidence of adrenal
6 cortical tumors with an increased dose of
7 glyphosate and that was statistically
8 significant, correct?

9 A. No. What I found was that the --
10 because of the hypothesis rates of this
11 tumor in Lankas, et al., 1981 and the lower
12 rates in the others, you end up with a
13 negative trend because of that high rate of
14 tumors. And that's why you have the
15 negative trend. I would never have called
16 that pooled analysis a negative trend
17 because it was clear to me that that pooled
18 analysis was flawed.

19 Q. OK. But just to be clear, page
20 10 of your rebuttal expert report, you
21 present the data the -- your pooled
22 analyses for adrenal cortical carcinomas in
23 female Sprague Dawley rats -- correct?
24 Adrenal cortical carcinomas?

25 A. I'm sorry, I'm kind of slow, yes,

1 respect to kidney adenomas in male rats.
2 Correct?

3 MS. GREENWALD: Objection,
4 form.

5 A. Again, the Lankas study was 26
6 months and the rest were 24. That is
7 reason to exclude it.

8 Q. And, in fact, though, if you
9 looked at the four Sprague Dawley rat
10 studies and that would be on pages 26 to 27
11 of your expert report -- I am sorry.

12 A. Wistar rats. It starts on 24 --
13 anyway, OK.

14 Q. So for Lankas, we were going to
15 talk about the kidney adenomas, you did not
16 find increased instance of kidney adenomas
17 with increased dose of glyphosate, correct?

18 A. That is correct.

19 Q. And then if we look at the Stout
20 and Reucker study, the second Sprague
21 Dawley study, it's a 24-month study you do
22 not find an increased incidence of kidney
23 adenomas with increased dose of glyphosate,
24 correct?

25 A. That is correct.

1 I present that, yes.

2 Q. In your original pooled analysis,
3 you have a p of -- 0.997 which translates
4 to an inverse trend with a p of .003.
5 That's statistically significant, correct?

6 A. For negative, it has a negative
7 trend. That is correct.

8 Q. And despite the fact that your
9 pooling analysis finds this statistically
10 significant inverse trend with p equal to
11 .003, your ultimate opinion is that these
12 studies suggest a potential for glyphosate
13 to cause adrenal cortical tumors, correct?

14 MS. GREENWALD: Objection,
15 form.

16 A. I concluded that because the
17 Lankas study is 26 months instead of 24 and
18 because the tumor rates seen in that study
19 far exceed the others, that it doesn't
20 belong in that pooled analysis and I made
21 my conclusion based upon pooling the other
22 three studies.

23 Q. Well you talk about dropping the
24 Lankas Sprague Dawley study. You used that
25 same approach to reach an opinion with

1 Q. If you look at the Atkinson study
2 which is the third study for kidney
3 adenomas in male Sprague Dawley rats, you
4 did not find an increased incidence of
5 kidney adenomas with increased exposure to
6 glyphosate, correct?

7 A. That is correct.

8 Q. So three of the four. And in
9 fact, three of the four Sprague Dawley
10 studies did not find any kidney adenomas
11 whatsoever in either the middle or highest
12 glyphosate dose groups tested, correct?

13 A. I'm looking for the fourth study.
14 I'm sorry.

15 Q. The fourth study would be
16 table --

17 A. Table 6, and I wanted to look at
18 that.

19 That would be correct. Three of
20 the four did not have, by themselves, a
21 positive finding for this tumor.

22 Q. Well, my question was a little
23 bit different. Three of the four Sprague
24 Dawley studies did not find any kidney
25 adenomas whatsoever in either the high dose

1 or middle dose glyphosate group, correct?

2 A. I believe that is correct. This
3 is a very rare tumor.

4 Q. But using your methodology, you
5 opined that that data proves that
6 glyphosate caused kidney adenomas in male
7 Sprague Dawley rats, correct?

8 A. I believe that's what I said and
9 I believe that is the case, yes.

10 Q. So now you dropped Lankas from
11 your analysis for adrenal cortical tumors
12 and kidney adenomas, but you highlight the
13 findings of Lankas with respect to other
14 tumors that were seen in that study?

15 A. In the Lankas study. Other
16 tumors that were seen in the Lankas study.

17 Q. Yes.

18 A. That is correct.

19 Q. So for example, with thyroid
20 C-cell tumors in female rats and in testes
21 interstitial tumors in male rats, those
22 tumors were found in the Lankas study but
23 not found in the other three studies,
24 correct?

25 A. That is correct.

1 Q. And in your expert report, you
2 state that Lankas might be informative on
3 causation with respect to these tumor types
4 because there was a 26-month study while
5 the other three studies were for 24 months,
6 correct?

7 A. That is correct.

8 Q. You also opine, in your expert
9 report, that glyphosate causes thyroid
10 C-cell tumors in male Sprague Dawley rats,
11 correct? You can look at page 52 if you
12 want.

13 A. Thank you.

14 Thyroid C-cell adenomas and
15 carcinomas combined in male Sprague Dawley
16 rats.

17 Q. So the answer is yes, you do
18 opine that glyphosate causes thyroid C-cell
19 tumors in male Sprague Dawley rats,
20 correct?

21 MS. GREENWALD: Objection to
22 form.

23 A. That's what it says, correct.

24 Q. Now, let me mark for you your
25 initial expert report. We will make this

1 32.

2 (Exhibit 15-32, Original Expert
3 Report of Dr. Christopher J. Portier
4 marked for identification, as of this
5 date.)

6 Q. So Exhibit 32 is the expert
7 report you submitted in this case in May of
8 2017, correct?

9 I'll represent to you it was
10 May 1, unless there is some disagreement
11 there.

12 You revised this expert report in
13 your July report, correct?

14 A. That is correct.

15 Q. Now, at page 53 of your May --
16 your first expert report. I'm sorry, not
17 53. 34, of your May 2017 expert report,
18 you're talking about the findings for
19 thyroid C-cell tumors, correct?

20 A. That is correct.

21 Q. And at that point in time, you
22 didn't have data from the Lankas study,
23 correct?

24 A. That is correct.

25 Q. And you concluded, based upon

1 your analysis of the three other studies,
2 that there was -- the evidence is weak that
3 glyphosate causes thyroid C-cell tumors in
4 male Sprague Dawley rats. Correct?

5 A. That is correct.

6 Q. And if we go now to your revised
7 expert report, that same page on Exhibit --
8 page 34 on your revised expert report, here
9 you now have data from the Lankas study and
10 you note that pooling all four studies
11 yields a significant trend of p equals
12 .041. Correct?

13 A. I have to find it. I'm sorry.

14 That appears to be correct.

15 Q. So you're no longer saying that
16 the evidence is weak, correct?

17 A. That is correct. But --

18 Q. And that is because you're now
19 including the Lankas study --

20 MS. GREENWALD: He was
21 finishing a sentence.

22 A. That is correct. But you are
23 right, that is an error. This should
24 remain weak. This is -- this is not my
25 intention, I'm -- you have -- you're

1 correct.

2 Q. So you are now opining that you
3 should not have included the Lankas study
4 in this pooling analysis?

5 A. No, I should not have concluded
6 that this was evidence -- that it should
7 have been weak or limited evidence that
8 glyphosate causes thyroid C-cell tumors. I
9 should have put that in there.

10 Q. In your revised report, to reach
11 a statistically significant finding for
12 thyroid C-cell adenomas, you included the
13 Lankas study in your pooling methodology,
14 didn't you?

15 MS. GREENWALD: Objection to
16 form.

17 A. I had done both since I did it in
18 my previous one. But here, it seems I
19 pooled all four. That is correct.

20 Q. You had pooled all three in your
21 May report and, then to reach a
22 statistically significant finding in your
23 July report, you pool all four, correct?

24 MS. GREENWALD: Objection,
25 form.

1 bottom, pooling the remaining new findings
2 in Sprague Dawley rats. Do you see that?

3 A. It seems that's what I did,
4 that's correct.

5 Q. Which of the four Sprague Dawley
6 rat studies did you pool for your
7 positive -- reported positive reports in
8 skin keratoacanthomas?

9 MS. GREENWALD: Objection to
10 form.

11 A. It does not say.

12 Q. I know it does not say. That's
13 why I am asking you.

14 A. I would have to go back.

15 Q. Basal cell tumors, you also
16 report a pooled finding. Which of the four
17 Sprague Dawley rat studies did you include
18 in your pooling analysis for basal cell
19 tumors?

20 A. Again, I don't know. I would
21 have to go back and look.

22 Q. Basal cell tumors, those in mice
23 are the same basal cell tumors in humans?
24 Is that a similar tumor?

25 A. It's -- it arises from the same

1 A. No, no.

2 Q. You didn't pool all four studies
3 in your July expert report?

4 A. I did, but I didn't do it to
5 achieve statistical significance.

6 Q. In your rebuttal report, you also
7 discuss pooled analysis in Sprague Dawley
8 rats for skin keratoacanthomas and basal
9 cell tumors. I think this is based on page
10 6 of your report.

11 A. Which one are we looking at?

12 Q. I am sorry, your rebuttal expert
13 report. So this is 15-31.

14 A. Page 6?

15 Q. Yes.

16 A. I -- OK, what are we looking at
17 here.

18 Q. So you report that for skin
19 keratoacanthomas, you are reporting a
20 pooled finding of an increased trend for
21 increased skin keratoacanthomas for Sprague
22 Dawley rats, correct? On page 6 of your
23 rebuttal report, on the bottom, the second
24 paragraph from the end.

25 Page 6, second paragraph from the

1 place.

2 Q. And basal cell tumors, as I know
3 all too well, in humans are generally
4 caused by exposure to sunlight, correct?

5 MS. GREENWALD: Objection to
6 form.

7 A. Can I go back to your previous
8 question about what was pooled and correct
9 that?

10 Q. Sure.

11 A. Thank you. All four studies were
12 pooled for that evaluation.

13 Q. Is that for both the evaluations?

14 A. What was the skin
15 keratoacanthomas -- and what was the other
16 one?

17 Q. Basal cell.

18 A. Actually -- I did both poolings.
19 OK, like I did before, three and four.

20 Q. Where is your --

21 A. Table 2, page 10.

22 Q. OK. What is 3 and what's 4?

23 A. So Lankas, Ekemoto, Atkinson and
24 Stout and Reucker is Sprague Dawley rats,
25 the first big block that's pooling all

<p style="text-align: right;">Page 226</p> <p>1 four. Oh, no, I didn't show the pooled 2 three here, I'm sorry. 3 Q. You are looking Wistar rats I 4 think? 5 A. I was looking at Wistar rats. 6 Q. Just so the record is clear -- 7 A. I don't have anything here that 8 says when I pooled -- just one minute. 9 I don't say here when I pooled 10 only three instead of the four, so I can't 11 answer the question. 12 Q. At least as reported in table 2, 13 you are relying upon a pooling analysis of 14 all four of the Sprague Dawley rat studies 15 including Lankas for those two tumor types? 16 A. I can't answer the question. 17 Q. Fair enough. 18 A. I thought I could. Sorry. 19 Q. Basal cell tumors, those are 20 caused primarily by exposure to the sun, 21 correct? 22 MS. GREENWALD: Object to 23 form. 24 A. I don't know. Skin cancers 25 are -- certain skin cancers are caused</p>	<p style="text-align: right;">Page 228</p> <p>1 gavage. 2 Q. That would be a liquid ingestion 3 as opposed to a solid ingestion of the 4 chemical? 5 A. Yes, and forced into the stomach 6 of the animal so it would not be licking 7 itself and putting it on the skin. 8 Q. With respect to this potential 9 licking of the skin, you would not be able 10 to actually determine what the dose was for 11 any of the animals in these studies, 12 correct? 13 MS. GREENWALD: Objection, 14 form. 15 A. You could figure out with some 16 degree of accuracy an estimate of how much 17 was going on the skin from studies people 18 have done in looking at the issue. Nobody 19 has done that, but you probably could. 20 Q. But as of today, nobody has 21 conducted the study that would allow you to 22 determine what dose of glyphosate might 23 have been licked on to the skin of these 24 mice in the various treatment groups, 25 correct?</p>
<p style="text-align: right;">Page 227</p> <p>1 primarily by the sun, but I don't know if 2 that is a basal cell -- is the same thing. 3 Q. Do you know of any evidence or 4 can you cite to any publication that states 5 that an oral ingestion, eating study, of 6 any substance can result in a basal cell 7 tumor? Can cause a basal cell tumor? 8 A. Probably. It's well known that 9 rats and mice, after they eat, lick their 10 skin, and so it's well known that you get 11 some degree of absorption on the skin in 12 these types of studies. 13 Q. So your sense then would be to 14 the extent that there are skin tumors 15 reported in these studies that might be 16 attributed to the glyphosate, it would be 17 because of rats licking their skin? 18 A. You couldn't rule it out. It 19 could be either one and to give you an 20 example, we saw an increase in skin tumors 21 from oral ingestion of dioxin. 22 Q. And was that an oral gavage or a 23 feeding study? 24 A. It was an unusual study. I just 25 don't remember. It was probably an oral</p>	<p style="text-align: right;">Page 229</p> <p>1 A. That is correct. 2 Q. So you would not be able to come 3 up with any trend based upon dose of 4 glyphosate applied to the skin using these 5 studies, correct? 6 A. No, that's not true. Almost 7 certainly the dose to the skin is going to 8 be concentration dependent because the 9 animals will, on average, all do the same 10 amount of grooming. And so as you double 11 the dose, you're going to probably double 12 the amount that gets on the skin. So I 13 could do a trend test for that. 14 Q. Do you have any evidence of your 15 review of the studies that looked at the 16 grooming habits of these rats with respect 17 to whether the grooming habits were the 18 same across treatment groups? 19 A. There is no evidence either way 20 in almost any study about grooming habits, 21 it's not recorded. 22 Q. Let's turn to the mice, mouse 23 studies, mice studies, mouse studies. 24 You used the same pooling 25 methodology that you applied with the rat</p>

<p style="text-align: right;">Page 230</p> <p>1 studies in reaching your causation opinions 2 in mice, correct? 3 A. Yes. 4 Q. In your rebuttal report -- again, 5 if you look at page 7, you state that the 6 observed findings of p less than .05 in 7 Swiss Albino mice, both male and female, 8 and female CD-1 mice would be consistent 9 with what would be expected due solely to 10 chance, correct? 11 A. I'm not sure where you are 12 reading at. 13 Q. At the bottom of page 7 in your 14 rebuttal report. Yeah. 15 A. Now, what's the question? 16 Q. So you state in your rebuttal 17 expert report that the observed findings of 18 p less than 0.05 trends in Swiss Albino 19 mice, both male and female, and female CD-1 20 mice are consistent with what would be 21 expected due solely to chance, correct? 22 MS. GREENWALD: Objection to 23 form. 24 A. That's not what I said. 25 Q. You state that in female CD-1</p>	<p style="text-align: right;">Page 232</p> <p>1 Q. Is that correct? 2 MS. GREENWALD: Objection, 3 same two objections. 4 A. I answered the question already. 5 Q. I am going to ask it again 6 because I don't believe you did. 7 In female CD-1 mice and Swiss 8 Albino mice, the number of trends you would 9 expect to see due to chance and the number 10 of trends you, in fact, did see are 11 approximately equal, correct? 12 MS. GREENWALD: Objection, 13 form. 14 A. That is correct. 15 Q. Now, based upon your pooling 16 methodology, you opine that glyphosate 17 causes a number of tumors in CD-1 mice, 18 correct? 19 A. Due to the data I'm looking at, 20 which includes the pooling analysis and the 21 individual analysis and other things, I am 22 convinced that a number of tumors in the 23 CD-1 mouse are positive. 24 Q. So your causation opinion with 25 respect to CD-1 mice is looking at four</p>
<p style="text-align: right;">Page 231</p> <p>1 mice and Swiss Albino mice, the expected 2 and observed numbers are approximately 3 equal, correct? 4 A. That is for the expected and 5 observed number of p values less than 0.05, 6 that is correct. 7 Q. Right. Just to be clear then, 8 you state in your rebuttal expert report 9 that the observed findings of p less than 10 0.05 trends in Swiss Albino mice and female 11 CD-1 mice are consistent with what would be 12 expected due solely to chance, correct? 13 MS. GREENWALD: Objection to 14 form. 15 A. No, that's not what I wrote. I 16 wrote what I wrote. It says they are 17 approximately equal. That is all it says. 18 Q. So the number of observed trends 19 that you saw in female CD-1 mice and in 20 Swiss Albino mice are approximately equal 21 to what you would expect to see due to 22 chance, correct? 23 MS. GREENWALD: Objection, 24 form, asked and answered. 25 A. I answered it.</p>	<p style="text-align: right;">Page 233</p> <p>1 studies, correct? 2 MS. GREENWALD: Objection, 3 form. 4 Q. The four mouse studies? 5 MS. GREENWALD: Objection, 6 form. 7 A. There are four mouse studies that 8 were acceptable for use in the causation 9 evaluation, that is correct. 10 Q. And two of the studies were 18 11 months in duration and two of them were 24 12 months in duration, correct? 13 A. That is correct. 14 Q. In your pooling analysis, you 15 conduct pooling of the two 18-month studies 16 and then you conduct pooling of the two 17 24-month studies and you also conduct 18 pooling of all four studies combined? 19 MS. GREENWALD: Objection to 20 form. 21 A. I don't know that I did all four 22 studies combined all the time, but I 23 probably pooled them all the time in all 24 four as well. 25 Q. If your pooling methodology</p>

<p style="text-align: right;">Page 234</p> <p>1 reported a positive trend for tumor type in 2 any one of those three pooled analyses, you 3 ultimately opined that the glyphosate 4 causes that type of tumor in CD-1 mice, 5 correct? 6 MS. GREENWALD: Object to 7 form. 8 A. No. 9 Q. Are there any tumor types that 10 resulted in a positive trend in either the 11 18-month studies or 24-month study or the 12 four studies combined that you do not opine 13 was caused by glyphosate? 14 MS. GREENWALD: Objection, 15 form. 16 A. You've lost me a little bit 17 there. I would have to look. I'm sorry. 18 I'd have to look carefully. 19 My guess would be, looking at 20 it -- no, I'd have to look. I'm sorry, I 21 can't guess. 22 Q. Now, in connection with -- strike 23 that. 24 When you look at the 24-month 25 study through your pooling methodology, you</p>	<p style="text-align: right;">Page 236</p> <p>1 the two 24-month studies are pooled, 2 correct? 3 A. That is correct. 4 Q. And there is no positive trend 5 when all four studies are pooled, correct? 6 A. It's a marginal trend, but it's 7 not statistically significant at the .05 8 level. 9 Q. And you opine through this 10 analysis that the data establishes that 11 glyphosate causes malignant lymphoma in 12 male CD-1 mice, correct? 13 MS. GREENWALD: Objection to 14 form. 15 A. My opinion is glyphosate causes 16 malignant lymphoma in male CD-1 mice. 17 Q. When you applied your pooling 18 methodology so the data on hemangiosarcomas 19 in male CD-1 mice from the two 24-month 20 studies, you likewise do not find an 21 increased trend, correct? 22 A. It doesn't reach the level of 23 statistical significance, that is correct. 24 Q. Now, in your expert report -- and 25 this is at page, your initial expert</p>
<p style="text-align: right;">Page 235</p> <p>1 did not find an increased trend for any 2 type of tumor in CD-1 mice, correct? 3 A. I would have to look at it and 4 make sure of that. 5 Q. So why don't we look at page 11 6 of your revised expert report. 7 A. OK. 8 Q. I am sorry, not your revised. 9 Your rebuttal. 10 A. Rebuttal. 11 Q. We were on the same page 12 physically and mentally. 13 A. So looking at the mouse studies 14 here, none of them reached a level of 15 statistical significance. That is correct. 16 They -- one of them is marginally, two of 17 them are marginally -- no. One, one is 18 marginally significant. 19 Q. For example, for malignant 20 lymphoma in male CD-1 mice, your pooling 21 methodology reports a positive trend when 22 the two 18-month studies were pooled, 23 correct? 24 A. That is correct. 25 Q. There is no positive trend when</p>	<p style="text-align: right;">Page 237</p> <p>1 report, the revised one, 15-30, at page 48, 2 you suggest another approach in analyzing 3 those two studies for hemangiosarcomas and 4 first I want to make sure that you are on 5 page 48? 6 A. Yes, I am. 7 Q. The top for hemangiosarcomas in 8 male and pooling the two 18-month studies 9 and then pooling the two 24-month studies, 10 correct? 11 A. That's correct. 12 Q. And you note, again, pooling the 13 two 24-month studies did not result in a 14 statistically significant increased trend 15 for hemangiosarcomas, correct? 16 A. That is correct. 17 Q. Then you state if you were to 18 remove the findings in the high dose group 19 in one of the 24-month studies and then 20 pool the two 24-month studies without the 21 high dose group, then your pooling of the 22 24-month studies would be a statistically 23 significant increased trend, correct? 24 A. I note that there is an aberrant 25 result in the highest dose of the Knezevich</p>

<p style="text-align: right;">Page 238</p> <p>1 and Hogan study and I looked at the 2 sensitivity of the pooled analysis to 3 removal of that aberrant result. 4 Q. And now if you followed the same 5 methodology and ignored the findings of 6 hemangiosarcoma in the highest dose group 7 of the highest dose group of the Atkinson 8 study or the Wood study your pooling 9 methodology would not have resulted in any 10 trend for hemangiosarcomas in the 18-month 11 study, correct? 12 MS. GREENWALD: Objection to 13 form. 14 A. That's possibly true, yes. 15 Q. You also conducted -- you don't 16 present that data though in your expert 17 report? 18 A. This is a -- this is the pooling 19 evaluation here. There is reason -- that's 20 just simply an observation on my part. 21 That is all it is. This is not used as 22 part of my overall evaluation. 23 Q. It was important enough for you 24 to put it in your expert report? 25 A. Because I did it.</p>	<p style="text-align: right;">Page 240</p> <p>1 sensitive to that high dose point. 2 Q. You conducted a historical trend 3 analysis for hemangiosarcomas in male mice 4 in the Sugimoto study, correct? That's 5 page 42 of your initial or July 2017 6 report, 15-30. 7 A. Yes, it starts on page 41. OK. 8 Q. So you calculated that while the 9 concurrent control trend -- you calculated 10 that while the concurrent control trend 11 analysis for hemangiosarcomas in male mice 12 in Sugimoto is not statistically 13 significantly increased, you did find a 14 significant increase in your historical 15 trend analysis, correct? 16 A. For hemangiosarcomas, the trend 17 test was marginally significant and 18 historical control evaluation was 19 significant. 20 Q. That p trend, that p hist. trend 21 is listed as one of your statistically 22 significant trends in your table 15, 23 correct? 24 MS. GREENWALD: Objection, 25 form.</p>
<p style="text-align: right;">Page 239</p> <p>1 Q. But you didn't do the same 2 analysis removing the high dose group from 3 either Atkinson or Wood studies, correct? 4 A. I saw no reason to do it. 5 Q. That would not have resulted in a 6 positive trend, would it have? 7 MS. GREENWALD: Objection, 8 form, asked and answered. 9 A. I do not know, but I saw no 10 reason to do it. 11 Q. In fact, it would have removed a 12 trend that you wanted to rely upon, 13 wouldn't it? 14 MS. GREENWALD: Objection, 15 asked and answered, form. 16 Q. You don't know? 17 A. I -- first, I don't know if it 18 would remove the trend. Probably it would. 19 But that's not the point here. The reason 20 for pooling -- for looking at it here is 21 the classic things you do. It's a 22 sensitivity analysis to see how sensitive 23 the findings are to what appears to be an 24 aberrant result. That was all that was 25 done here. And it seemed to be very</p>	<p style="text-align: right;">Page 241</p> <p>1 A. Yes, that is correct. 2 Q. Now, hemangiosarcomas are one of 3 those types of tumors that you have stated 4 must be combined as systemic tumors, 5 correct? 6 A. Yes, that is correct. 7 Q. So whether hemangiosarcomas in 8 the liver or kidney or in the spleen, for 9 the purposes of the trend analysis, they 10 are all grouped together, correct? 11 A. No, they -- from what I 12 understand, they group it slightly 13 differently than that. I'm sorry. I have 14 to go and try to figure it out myself, but 15 I don't know exactly. 16 But they tend not to pool liver 17 and kidney hemangiosarcomas with the other 18 hemangiosarcomas, I think it has something 19 to do with the origin of the cells for the 20 hemangiosarcoma. 21 Q. So is it your understanding then, 22 in reporting hemangiosarcomas, you would 23 separately analyze, for trend analysis, 24 liver and kidney -- I am sorry, which one 25 did you say it was?</p>

<p style="text-align: right;">Page 242</p> <p>1 A. I think it is liver and kidney, 2 but I would ask my pathologist first. I 3 would trust him to tell me how to combine 4 these things. 5 Q. For the Sugimoto study then, is 6 it your understanding that the 7 hemangiosarcomas that you found were not in 8 the liver or kidney? 9 A. I don't honestly know. I -- I 10 can't be absolutely certain. You asked me 11 about systemic tumors and combining them. 12 But in this case, I have no clue. 13 Q. So for the purposes of the 14 historical trend analysis then for the 15 Sugimoto study for hemangiosarcomas to find 16 a historical incidence of hemangiosarcomas 17 then, you would look at all the 18 hemangiosarcomas in controlled animals in 19 the historical database? 20 A. That you -- yes, you look at all 21 the historical hemangiosarcomas in the 22 historical controlled database, that is 23 correct. 24 Q. Now, you note in your report that 25 the historical control rate for</p>	<p style="text-align: right;">Page 244</p> <p>1 MS. GREENWALD: Objection to 2 form. 3 A. This is the Giknis and Clifford 4 paper that I referenced, yes. 5 Q. Let's take a look at table 5 on 6 page 21 and 22. Actually, first of all, 7 just to set the stage, on page 5 of this 8 report they have a summary of the 9 individual studies and information, 10 correct? So this identifies the 18-month 11 study and 24-month studies, correct? 12 A. That is correct. 13 Q. So studies 1 through 26, those 14 are the 18-month studies, correct? 15 A. That -- yes, that is correct. 16 Q. And those are the -- that's the 17 data set we would be looking at for this 18 historical control? 19 A. I believe so, yes. 20 Q. If we looked at pages 21 and 22, 21 this has the instance of neoplasm by study 22 for selected organs in males, correct? So 23 these are the male historical database? 24 Historical controls? 25 A. That is correct.</p>
<p style="text-align: right;">Page 243</p> <p>1 hemangiosarcomas based on Giknis and 2 Clifford is zero out of 1424, correct? 3 Actually, you have two different 4 numbers. Zero, 1424 on your footnote, and 5 I think you have zero out of 1149 in your 6 text. One of those two, right? 7 A. Yeah, it's one of those two. I'm 8 sorry. 9 Q. The key point that you're making 10 here is the fact that hemangiosarcomas was 11 never seen in historical controls should 12 strongly support any positive finding as in 13 the Sugimoto study as being significant 14 correct? 15 A. Biologically significant, that is 16 correct. 17 Q. Let's take a look at the Giknis 18 and Clifford report. 19 (Exhibit 15-33, report entitled, 20 "Spontaneous Neoplastic Lesions in the 21 Crl:CD1 Mouse" marked for 22 identification, as of this date.) 23 Q. This is the source of your 24 information on historical control for 25 hemangiosarcomas, correct?</p>	<p style="text-align: right;">Page 245</p> <p>1 Q. And you, in coming up with your 2 statement that there were no 3 hemangiosarcomas in these historical 4 controls, you were looking at the whole 5 body, multiple organ line, third from the 6 bottom, correct? 7 A. That is correct. 8 Q. There is another line item for 9 hemangiosarcomas in the liver, correct? 10 A. That is correct. 11 Q. And there were, in fact, 12 12 historical control animals in the 18-month 13 studies with hemangiosarcomas in the liver, 14 correct? 15 A. That is correct. 16 Q. And again, you don't know with 17 Sugimoto whether the hemangiosarcomas were 18 in the liver or other organs, correct? 19 MS. GREENWALD: Objection, 20 form. 21 A. Typically it's whole body 22 hemangiosarcomas, but I can't be certain 23 exactly what they did. 24 Q. So for determining what the 25 historical control instances of</p>

<p style="text-align: right;">Page 246</p> <p>1 hemangiosarcomas, we should be looking --</p> <p>2 including these 12 hemangiosarcomas in the</p> <p>3 liver, correct?</p> <p>4 MS. GREENWALD: Objection,</p> <p>5 form.</p> <p>6 A. No. I would not recommend that.</p> <p>7 The typical pathological approach is whole</p> <p>8 body hemangiosarcomas, and from my</p> <p>9 understanding, that is what we were</p> <p>10 analyzing.</p> <p>11 Q. And you would not include liver</p> <p>12 hemangiosarcomas. Is that your</p> <p>13 understanding?</p> <p>14 MS. GREENWALD: Objection,</p> <p>15 asked and answered.</p> <p>16 A. That is my understanding, but the</p> <p>17 only way to verify that is if I have the</p> <p>18 individual animal pathology data.</p> <p>19 Q. You don't have that for Sugimoto?</p> <p>20 A. Is that a Monsanto study? No, I</p> <p>21 don't have it.</p> <p>22 Q. Are there any other organs where</p> <p>23 hemangiosarcomas would not be included in</p> <p>24 the historical control rate?</p> <p>25 A. You really have to ask that</p>	<p style="text-align: right;">Page 248</p> <p>1 were in the 12-month study -- I'm sorry,</p> <p>2 the 18-month study and how many were in the</p> <p>3 24-month study, correct?</p> <p>4 A. That is correct.</p> <p>5 Q. Is it your -- to the extent that</p> <p>6 there were spleen hemangiosarcomas in</p> <p>7 18-month historical controls, should</p> <p>8 that -- those hemangiosarcomas be included</p> <p>9 in your historical control incidence for</p> <p>10 Sugimoto?</p> <p>11 MS. GREENWALD: Objection to</p> <p>12 form.</p> <p>13 A. You would really have to ask a</p> <p>14 pathologist.</p> <p>15 Q. So you don't know one way or the</p> <p>16 other?</p> <p>17 A. I don't know one way or the other</p> <p>18 what Sugimoto did. All I know, he</p> <p>19 characterized it the way he characterized</p> <p>20 it.</p> <p>21 Q. In the Giknis paper, Giknis and</p> <p>22 Clifford paper also reports on</p> <p>23 hemangiosarcomas in other tissues. It</p> <p>24 reports hemangiosarcomas in the testes, in</p> <p>25 the skin, in the pancreas, and in the lymph</p>
<p style="text-align: right;">Page 247</p> <p>1 question of the pathologist.</p> <p>2 Q. Let's look at table 3 in the</p> <p>3 Giknis and Clifford report. And</p> <p>4 specifically at page 12.</p> <p>5 Now, this has data for all 46 of</p> <p>6 the studies, it doesn't break it out, but</p> <p>7 for the spleen, there are 28</p> <p>8 hemangiosarcomas in these studies, correct?</p> <p>9 A. That's what it says.</p> <p>10 Q. Just to put this in context, page</p> <p>11 9, they report the data for liver</p> <p>12 hemangiosarcomas, correct?</p> <p>13 A. Yes, they do.</p> <p>14 Q. So there were 29 hemangiosarcomas</p> <p>15 in the liver in the control animals in the</p> <p>16 46 studies, correct?</p> <p>17 A. That's what it says.</p> <p>18 Q. And we know from table 5 that 12</p> <p>19 of those were in the 18-month studies,</p> <p>20 correct?</p> <p>21 A. Twelve of the 29 were in the</p> <p>22 18-month studies, that is correct.</p> <p>23 Q. And with the spleen, we know we</p> <p>24 have 29 hemangiosarcomas among all 46</p> <p>25 studies, but we don't know how many of them</p>	<p style="text-align: right;">Page 249</p> <p>1 nodes. And if you want you can go through</p> <p>2 the page 11, 12, and 13, you will see</p> <p>3 listings of the other hemangiosarcomas.</p> <p>4 To the extent that those</p> <p>5 hemangiosarcomas appeared in the 18-month</p> <p>6 studies, do you know if those should be</p> <p>7 included in your historical control rate</p> <p>8 for Sugimoto?</p> <p>9 A. I can't know how many of those</p> <p>10 appeared in the 18-month studies from this</p> <p>11 document. So I can't -- I can't answer the</p> <p>12 question in reality.</p> <p>13 Q. And so then would it be fair to</p> <p>14 say that you, without additional</p> <p>15 information that you do not have, cannot</p> <p>16 state what the appropriate historical</p> <p>17 control rate for hemangiosarcomas should be</p> <p>18 for the Sugimoto study?</p> <p>19 MS. GREENWALD: Objection,</p> <p>20 form.</p> <p>21 A. No, I can tell you what is</p> <p>22 characterized -- we can look up what OECD</p> <p>23 requires for this tumor, for this</p> <p>24 combination, if they require something for</p> <p>25 this combination, and that could be looked</p>

<p style="text-align: right;">Page 250</p> <p>1 at here assuming that Sugimoto followed 2 OECD guidelines. 3 I don't -- I know he followed the 4 OECD guidelines. I just haven't looked at 5 the issue. 6 Q. Do you know if the 7 hemangiosarcomas in Sugimoto were in the 8 liver or spleen or testes or the pancreas 9 or any other tissues where hemangiosarcomas 10 were found in the control animals? 11 MS. GREENWALD: Objection, 12 asked and answered. 13 A. The hemangiosarcomas were 14 characterized as whole body 15 hemangiosarcomas which is the same 16 characterization in this document for a 17 specific class of tumors. 18 Q. I asked a different question. 19 Do you know if the 20 hemangiosarcomas in the Sugimoto study, the 21 two hemangiosarcomas, do you know in what 22 tissue of the animal they occurred? 23 MS. GREENWALD: Objection, 24 form, asked and answered. 25 A. Again, they were characterized as</p>	<p style="text-align: right;">Page 252</p> <p>1 page 38 of your report. 2 A. Page 38. Knezevich and Hogan. 3 Q. So now we are talking about 4 hemangiomas in female CD-1 mice and the 5 first question is for the Knezevich study, 6 there was no finding of an increased trend 7 in hemangiomas in female CD-1 mice, 8 correct? 9 A. That's correct. 10 Q. In fact, the trend is above .5 so 11 it actually leans in the negative 12 direction, correct? 13 MS. GREENWALD: Objection to 14 form. 15 A. Hard to say. 16 Q. The Atkinson study, and this is 17 reported on page 39, likewise does not find 18 evidence of an increased risk of hemangioma 19 in female CD-1 mice, correct? 20 A. That is correct. 21 Q. The Wood study on page 41, 22 likewise, does not find evidence of an 23 increased trend in hemangiomas in female 24 CD-1 mice, correct? 25 A. The Wood study, given the</p>
<p style="text-align: right;">Page 251</p> <p>1 whole body hemangiosarcomas. I do not know 2 what tissue they came in, but they fell in 3 that general category. 4 Q. If they were in the liver -- 5 A. They wouldn't be a whole body 6 hemangiosarcoma. 7 Q. That's your understanding? 8 A. That's my understanding. Since 9 Giknis and Clifford come from a contract 10 lab that does these types of things all the 11 time, I'm assuming that is a common 12 classification for a category of tumors, 13 multiorgan -- multiorgan hemangiosarcoma. 14 Q. You separately opine that 15 glyphosate causes these hemangiomas in 16 female CD-1 mice, correct? 17 MS. GREENWALD: Objection, form. 18 A. The data supports a finding of me 19 hemangiomas in female whatever it was. 20 Q. CD-1 mice? 21 A. CD-1 mice. I'm sorry there is so 22 many things here. 23 Q. Let's walk through the findings 24 for this tumor type for the four CD-1 mouse 25 studies. The first is Knezevich study,</p>	<p style="text-align: right;">Page 253</p> <p>1 historical controls, I would say it does 2 show -- 3 Q. On page 41? 4 A. I don't have -- you're right, 5 you're right, my mistake. There is no 6 significant trend here, positive trend. 7 That is correct. 8 Q. So the one study in CD-1 mice 9 that you find with an increased trend and 10 what forms the basis of your pooled 11 analysis finding is the Sugimoto study 12 which you report on page 42, correct? 13 A. The Fujimoto study when -- 14 Q. Sugimoto. 15 A. Sugimoto, when combined with the 16 Wood, et al., study has a significant 17 increase in hemangiomas combined. And then 18 the Wood study itself is also significant 19 for hemangiomas. 20 Q. You mean the Sugimoto? 21 A. Sugimoto, God. Sorry, long day. 22 Q. Three of the four CD-1 mice 23 studies do not find any evidence of an 24 increased risk of hemangiomas in CD-1 25 female mice, correct?</p>

1 A. The 24-month studies have to be
2 handled differently than the 18-month
3 studies. So in the 18-month studies, you
4 have one positive study and one study
5 without a positive trend.

6 The study without the positive
7 trend has a lower exposure and the highest
8 exposure group. The study with the
9 positive trend has higher doses.

10 When you combine them together
11 with the doses and the responses, you
12 maintain a significant response. That's
13 what the data tells you.

14 Q. Dr. Portier, that was not my
15 question.

16 There are four CD-1 mouse
17 studies, correct?

18 A. There are four CD-1 mouse
19 studies.

20 Q. The two 24-month studies do not
21 report any positive trend with hemangiomas
22 in female mice, correct?

23 A. That is correct.

24 Q. The Wood 18-month does not find
25 any increased trend in hemangiomas in

1 used for hemangiosarcomas, you could look
2 at the hemangiomas and conclude there was
3 no increased trend for hemangiomas,
4 correct?

5 MS. GREENWALD: Objection to
6 form.

7 A. That is not true.

8 Q. Did you do a sensitivity analysis
9 knocking off the high dose group in
10 Sugimoto the way that you knocked out the
11 high group in Knezevich for
12 hemangiosarcomas?

13 MS. GREENWALD: Objection to
14 form.

15 A. I have done that analysis. For
16 some of the presentations I had where the
17 regulatory agencies were saying that the
18 doses were too high. And I believe I have
19 an example in there where there is -- well,
20 this is hemangiomas, they didn't have them
21 at the time. I haven't done the analysis,
22 no.

23 Q. You opine that glyphosate causes
24 kidney tumors in male CD-1 mice, correct?

25 A. I believe, yes. That is correct.

1 female CD-1 mice, correct?

2 A. It -- it found some, but not an
3 increase, that is correct.

4 Q. So the only CD-1 mouse study that
5 found any increased trend of hemangiomas in
6 female CD-1 mice was the Sugimoto study,
7 right?

8 A. That is correct.

9 Q. And using -- if you had followed
10 that same methodology that you followed in
11 doing your sensitivity analysis for
12 hemangiosarcomas and you knocked off the
13 aberrant finding in that high dose group in
14 one of the studies, you would not have
15 found any increased trend for hemangiomas
16 in any of the CD-1 mice studies, correct?

17 MS. GREENWALD: Objection,
18 form.

19 A. If, individually, one study at a
20 time, I had knocked this off, then this
21 significant finding might go away probably.
22 No, it would go away, it would not be
23 there.

24 Q. So if you followed the same
25 sensitivity analysis methodology that you

1 Q. Now, neither of the 24-month CD-1
2 mouse studies reports a statistically
3 significant increased trend for kidney
4 tumors in male CD-1 mice, correct?

5 A. OK, let's see. That would be
6 tables 9 and 10. Kidney hemangiomas,
7 kidney sarcomas, the 24-month studies?

8 Q. Yes, that would be Knezevich and
9 Atkinson.

10 A. Knezevich using historical
11 control test is significant.

12 Q. We are going to go to concurrent
13 control. We will get to historical control
14 in a second.

15 My question is with respect to
16 statistically significant trends which
17 would be p less than .05, neither of the
18 24-month CD-1 studies report a
19 statistically significant increased trend
20 for kidney tumors in male CD-1 mice,
21 correct?

22 A. If significance is defined as
23 0.05, that is correct.

24 Q. In its monograph for working
25 group 112, the IARC working group stated

1 that the finding for Knezevich was
2 statistically significant to the p equals
3 .05 level, correct?

4 A. I'd have to look. I'm sorry.

5 Q. Do you recall that there was a
6 calculation that was conducted using the
7 approximate trend test?

8 A. That, I do recall. The decision
9 was twofold, but yes.

10 Q. And the IARC monograph, the IARC
11 working group, using the approximate trend
12 test, reported that the findings for kidney
13 tumors in Knezevich was statistically
14 significant at p equals .05, correct?

15 A. For the trend test, yes, that is
16 correct.

17 Q. Your analysis now is that the
18 Knezevich study does not have a p less than
19 0.05 trend for kidney tumors, correct?

20 MS. GREENWALD: Objection,
21 form. That's not his testimony.

22 A. It -- could you say it again? I
23 don't know --

24 Q. Your expert analysis now is that
25 the Knezevich study for renal tumors does

1 A. That's not true.

2 Q. I'm sorry. Top of page 37, I am
3 reading, "I will use the study by Giknis
4 and Clifford 2000 since it best covers the
5 range of studies we have for CD-1 mice,
6 correct?"

7 A. It says that. But before that,
8 it says, "These studies have virtually
9 identical rates for the important tumor
10 seen in CD-1 mice," which refers to not one
11 historical control but three.

12 Q. OK, but for the purposes of your
13 historical trend analysis, for the
14 Knezevich and Hogan study, for kidney
15 adenomas and carcinomas, you used a
16 historical rate from Giknis and Clifford,
17 correct?

18 A. That is for kidneys?

19 Yes, that is correct.

20 Q. And you agree that in any
21 analysis using historical controls, the
22 data should be from studies in the same
23 time frame, for the same animal strain,
24 preferably from the same laboratory or same
25 supplier, and preferably reviewed by the

1 not report a p less than .05 finding,
2 correct?

3 MS. GREENWALD: Same
4 objection.

5 A. The p-value is reported in that
6 study from the exact test and that p-value
7 is not less than 0.05. But I do report the
8 p-value.

9 Q. Yes, I understand.

10 the -- you've been talking about
11 the historical trend analysis for
12 Knezevich, for renal tumors. Just
13 mentioned that, correct?

14 A. Correct.

15 Q. And in your p hist. analysis for
16 the Knezevich study, you again rely upon
17 the data from that 2000 report by Giknis
18 and Clifford, correct?

19 A. I would have to look.

20 Q. It's page 37 of your --

21 A. Give me a moment, please.
22 So 36 onward on to 37?

23 Q. Yes. We were talking about
24 historical control data and you use Giknis
25 and Clifford?

1 same pathologist, correct?

2 MS. GREENWALD: Objection,
3 form.

4 A. If possible. And when possible,
5 that would be assuming that the historical
6 control data set is a valid and useful data
7 set, that would probably be the best
8 approach.

9 Q. You also agree that historical
10 control data should be taken from studies
11 that are of the same duration as the study
12 in interest, correct?

13 A. Where possible, absolutely.

14 Q. And as a general matter, you
15 would expect a higher incidence of tumors
16 in historical controls as the duration of
17 the study increases, correct?

18 A. On average, yes.

19 Q. So all things being equal, you
20 would want to use 24-month study,
21 historical control data, to compare to a
22 24-month study, correct?

23 A. All things being equal, yes, if
24 you could get it.

25 MS. GREENWALD: When there is

1 a natural breaking point, I need a
2 comfort break.

3 MR. LASKER: This would be right
4 now is fine.

5 MS. GREENWALD: I don't want
6 to -- is now OK?

7 MR. LASKER: Now is perfectly
8 fine.

9 THE VIDEOGRAPHER: The time is
10 3:03 p.m.

11 (Recess)

12 THE VIDEOGRAPHER: The time is
13 3:18 p.m. We are on the record.

14 BY MR. LASKER:

15 Q. Dr. Portier, let's go back to
16 that Giknis and Clifford 2000 report. It's
17 right on the top of your pile there. Left
18 hand. There it is.

19 And this, again, is the source of
20 the historical control data that you used
21 for your p-hist. analysis of the Knezevich
22 kidney tumor findings, correct?

23 A. This is the source of the mean
24 historical control response that was
25 applied in the analysis that appears in the

1 1987 and December of 1996, correct?

2 That's by a common study
3 parameters on the top on page 1?

4 Page 1, common study parameters,
5 the 51 studies included?

6 A. Oh, yes, there it is. Thank you.

7 Q. Were initiated between January
8 1987 and December of 1996, correct?

9 A. That is correct.

10 Q. So this is -- the Knezevich study
11 was a two-year study, completed report in
12 1983, so these studies in this 2000 report
13 for the historical control data were all
14 initiated maybe 6 to 16 years after the
15 Knezevich study, correct?

16 MS. GREENWALD: Objection, form.

17 A. They were after the Knezevich and
18 Hogan study, that is correct.

19 Q. Between 6 and 16 years after,
20 correct?

21 A. Probably, yes.

22 Q. And if it was available, you
23 agree that it would be more reliable to use
24 historical control data for studies
25 conducted closer in time to Knezevich,

1 paper.

2 It's not the only historical
3 controls group I looked at.

4 Q. But just to be clear, this is the
5 source of the data that you used for your
6 p-hist. analysis of the kidney tumors in
7 Knezevich, correct?

8 A. That -- in the published
9 document, yes, that is correct.

10 Q. Where did you get, by the way --
11 strike that.

12 The Charles River posts its
13 historical trend data on its website,
14 correct? That's where you got this?

15 For example, this 2000 report is
16 right on their website, correct?

17 A. Whatever it says in my references
18 is where I got this from. It is a website.

19 Or does it even say? Let's see.
20 Giknis and Clifford, which one is that?

21 But anyway, I believe it is their
22 website, that is correct.

23 Q. So this report provides
24 historical control data, and it's on page 1
25 from 51 studies initiated between January

1 correct?

2 MS. GREENWALD: Objection, form.

3 A. Not necessarily correct.

4 Q. If you had a choice between
5 historical control data in CD-1 mice for
6 Charles River, for example, that was closer
7 in time to the Knezevich study, you would
8 like to look at that historical control
9 data, correct?

10 A. I would look at it, but I would
11 have to evaluate whether I thought it was
12 better or worse than this particular
13 dataset.

14 Q. Have you looked at any Charles
15 River data to determine whether they have
16 data on historical controls for a time
17 period closer to Knezevich?

18 A. I didn't find them.

19 If I had, I would have used them
20 probably.

21 Q. In fact, in your submission to
22 regulators --

23 A. I will point out that the
24 regulators use this as well, as well as
25 your expert.

1 Q. In your submission to regulators,
2 you have stated that attempting to compare
3 animals ranging over 16 years for
4 historical control data is inappropriate
5 because of the known drift in strains over
6 time, correct?

7 A. I probably said something like
8 that, that is correct.

9 Q. Now, the historical control data
10 that you use in your analysis, your p-hist.
11 analysis in your expert report is listed on
12 page 10 of the Giknis and Clifford paper,
13 1533, correct?

14 A. What are we looking at here?

15 Q. This is the kidney historical
16 control data. It's the third tumor typed
17 down on page 10, kidney.

18 A. I'm sorry, I have to make sure
19 that kidney is not one of the one where
20 they give the individual tumor incidence?
21 They do not.

22 Yes, that is it.

23 Q. And if you look at this data, you
24 have .37 for kidney adenomas and .16 for
25 adenocarcinomas, total is .43. And that

1 Q. Now, the Charles River website,
2 I've gone to that website and it does have
3 an earlier report.

4 MR. LASKER: So let's mark that
5 as the next in line.

6 (Exhibit 15-34, Charles River
7 report dated March of 1995, marked for
8 identification, as of this date.)
9 spontaneous neoplastic lesions in the
10 CD-1BR mouse marked for identification,
11 as of this date.)

12 Q. This is a report dated March 1995
13 prepared for Charles River Laboratory by
14 Dr. Lang, correct?

15 A. That seems to be what it says.

16 Q. If you look at page 4, it has a
17 listing of the different studies -- CD-1
18 mouse studies used to obtain historical
19 control data, correct?

20 A. That is correct.

21 Q. And there are ten 24-month
22 studies in CD-1 mice that were used in
23 generating historical control data,
24 correct?

25 A. That is correct.

1 is, I believe, the historical control data
2 that you used for your p-hist. analysis or
3 the number that you use for your historical
4 controls, correct?

5 A. I use .27 for the kidney
6 adenomas, .15 is what it says here for the
7 kidney carcinomas --

8 Q. We will give you that one.

9 A. -- and then the joint historical
10 rate is .44 percent.

11 Q. Now, for this historical control
12 data, that would be a mix of 24-month and
13 18-month studies --

14 A. That is correct.

15 Q. -- from the Giknis paper?

16 So to the extent it includes the
17 18-month study -- well, you would agree if
18 you had the data broken down, it would be
19 more reliable to use historical control
20 data drawn solely from 24-month studies,
21 correct?

22 MS. GREENWALD: Object to form.

23 A. If the -- this is a 24-month
24 study, I would prefer to have 24 month only
25 historical controls.

1 Q. The ten studies were initiated
2 between 1981 and 1990, correct?

3 A. No, 1983 --

4 Q. Look at --

5 A. I am sorry. Yes, 1981 and 1990,
6 correct.

7 Q. So these studies were initiated
8 between 1981 and 1990, correct?

9 A. That is correct.

10 Q. So this covers the time period of
11 Knezevich and then forward a period of
12 years, correct?

13 A. That is correct.

14 Q. And on page 23 of this report, we
15 have data broken down just for the 24-month
16 CD-1 mice studies, correct?

17 A. This might not cover Knezevich.
18 I'm sorry, I want to correct my previous
19 answer.

20 It partially covers Knezevich,
21 but because of the length of time it takes
22 to run a study, Knezevich probably started
23 in 1979 or so.

24 Q. These studies are closer in time
25 to Knezevich certainly than the studies in

<p style="text-align: right;">Page 270</p> <p>1 the Giknis and Clifford 2000 report, 2 correct?</p> <p>3 A. Correct.</p> <p>4 Q. And on page 23, the Lang report 5 sets forth historical control data 6 specifically for the 24-month CD-1 mouse 7 studies, correct?</p> <p>8 A. That's what table C1 says.</p> <p>9 Q. And on page 24, they report the 10 historical control data for kidney tumors, 11 correct?</p> <p>12 A. Renal adenomas and renal cell 13 carcinomas are reported, that is correct.</p> <p>14 Q. And the historical control data 15 reported in these studies, 24-month 16 studies, closer to time to the Knezevich 17 study, report a mean historical control 18 rate for kidney tumors, adenomas and 19 carcinomas combined, of 2.3 percent, 20 correct?</p> <p>21 MS. GREENWALD: Objection, form.</p> <p>22 A. Maybe. When you combine them, 23 you could have multiple adenomas and 24 carcinomas in the same animal, so you would 25 have -- the highest it would be would be</p>	<p style="text-align: right;">Page 272</p> <p>1 closer to time to Knezevich is more than 2 five times greater than the historical 3 control rate that you used for your p-hist. 4 trend analysis, correct?</p> <p>5 MS. GREENWALD: Objection, form.</p> <p>6 A. That were used by me and the EPA 7 and EFSA, and that is correct.</p> <p>8 Q. And to be fair, EPA and EFSA did 9 not conduct a p-hist. trend analysis, 10 correct?</p> <p>11 A. That is correct.</p> <p>12 Q. You are the only one who has 13 conducted a p-hist. trend analysis, 14 correct?</p> <p>15 MS. GREENWALD: Objection to 16 form.</p> <p>17 A. For these data, that is correct.</p> <p>18 Q. And the historical control rate 19 that you used to conduct that p-hist. 20 analysis is five times lower than the 21 historical control rate reported in this 22 Lang 1995 study that covers CD-1 mouse 23 studies of the same duration and closer in 24 time to the Knezevich study, correct?</p> <p>25 MS. GREENWALD: Objection, form.</p>
<p style="text-align: right;">Page 271</p> <p>1 2.3 percent. It could be as low as 1.34 2 percent for the combined.</p> <p>3 Q. The data that you used from the 4 2000 Giknis report to get your combined 5 data, you added the incidence from the 6 adenomas and the carcinomas in the 2000 7 Giknis and Clifford report.</p> <p>8 We just went through that, 9 correct?</p> <p>10 A. Yes, I did it -- correct.</p> <p>11 Q. For this data, using the same 12 methodology that you used to come up with a 13 historical control rate for your Knezevich 14 paper, the historical control rate is 15 actually about five times greater than the 16 control rate that you used for your p-hist. 17 trend analysis, correct?</p> <p>18 A. It is 2.3 percent.</p> <p>19 Q. Compared to .42 or .44 percent, 20 correct?</p> <p>21 A. Right. Yeah.</p> <p>22 Q. So the actual -- or I am sorry, 23 the historical control incidence of kidney 24 tumors -- the mean historical control 25 incidence from these 24-month studies</p>	<p style="text-align: right;">Page 273</p> <p>1 A. Yes, that's correct.</p> <p>2 Q. You also agree that the 3 historical control rates for kidney tumors 4 in CD-1 mice may not even apply to the 5 Knezevich study because additional sections 6 were taken of the kidney tumors in that 7 study, correct?</p> <p>8 A. I retract that statement 9 actually. I thought about that when I was 10 rereading it.</p> <p>11 The thing is the extra sections 12 produced nothing. There were no new 13 tumors. There were no new findings at all. 14 And so since it's still based upon the 15 original findings, I would say this 16 historical control set is applicable.</p> <p>17 Q. If there had been additional 18 sectioning of the -- first of all, when you 19 say you retract that statement, you are 20 retracting a statement that appears in your 21 expert report, correct?</p> <p>22 A. Whatever I'm doing, the statement 23 that says because of the taking of three 24 liver slices, these historical controls may 25 not be appropriate, I'm now saying I</p>

1 believe these historical controls are
2 appropriate because the three extra
3 sections did not change anything.

4 Q. So just so we are clear, in your
5 expert report, which is 1530 on page 37 --
6 so this is your expert report.

7 A. Um-hm.

8 Q. You state, with respect to your P
9 trend analysis for Knezevich for kidney
10 tumors, and it's about one-third down the
11 page:

12 "These historical control rates
13 may not apply to this analysis because a
14 reevaluation of the kidney tumors
15 considered additional sections and no
16 information is available on how additional
17 sections affect historical control rates in
18 this strain of mice. Differences have been
19 seen in other settings."

20 Correct?

21 A. That is correct.

22 Q. And that is a statement that you
23 are now retracting today, correct?

24 A. I'm certainly not retracting the
25 statement that says this has been seen in

1 Q. If it was the case that multiple
2 sections of historical control animals
3 found additional kidney tumors, is it your
4 testimony that those additional tumors
5 should not be considered as relevant
6 historical controls to the Knezevich study?

7 A. You have lost me a little bit.
8 I'm sorry.

9 Q. I'll say it again.

10 If the historical control
11 animals -- those studies where you got the
12 historical control data -- had undergone
13 additional sectioning and found additional
14 tumors -- you got that part?

15 A. Um-hm.

16 Q. In trying to identify what the
17 historical control rate was as compared to
18 the Knezevich study, would you have
19 considered those additional tumors found in
20 the historical control animals?

21 A. I certainly would have looked at
22 it.

23 Q. And that was the basis of your
24 original statement that you have in your
25 expert report as to why the historical

1 other settings. These historical -- what I
2 am retracting is "may not apply."

3 Q. And for -- just so I understand,
4 the point that you were making in your
5 expert report is that if the historical
6 control animals had been -- there had been
7 additional sections taken of those animals,
8 there might have been additional tumors
9 found in those animals, correct?

10 A. Correct.

11 Q. And if you were then doing an
12 apples-to-apples comparison of studies with
13 similar numbers of sectioning, you would
14 want to compare the findings in Knezevich
15 after those multiple sections with
16 control -- historical controls after the
17 multiple sections, correct?

18 MS. GREENWALD: Objection, form.

19 A. If the multiple sections had
20 altered the numbers, I would want to do
21 that. Failing to alter the numbers then
22 means that they are appropriate against the
23 original pathology, which is the final
24 pathology. Therefore, they are
25 appropriate.

1 control rates that you have from Charles
2 River might not apply, because you don't
3 know that there was additional sectioning
4 of those animals, correct?

5 MS. GREENWALD: Objection to
6 form.

7 A. I assume -- in fact, I'm certain
8 that under OECD guidelines, there is
9 guidance on how to section kidney tumors.
10 And the kidney tumors that were done in
11 Giknis and Clifford were certainly done
12 under OEC guidelines because of the nature
13 of that laboratory.

14 The previous ones I don't know
15 about because it was earlier. But they are
16 all done the same way.

17 Q. And they are just -- there
18 wouldn't be additional sectioning?

19 A. There wouldn't be additional
20 sectioning because they would be doing
21 whatever the guidelines say.

22 Q. The 24-month Atkinson study --
23 and this is in your report at page 39 -- it
24 reports -- and you report in your expert
25 report -- a statistically significant

<p style="text-align: right;">Page 278</p> <p>1 negative trend for kidney tumors in CD-1 2 mice with increased dose of glyphosate, 3 correct? 4 A. Yes, I would guess that's the 5 case. 6 Q. And the -- you recently told a 7 blogger by the name of Carey Gillam that 8 when the findings for renal tumors in these 9 two 24-month mouse studies, Knezevich and 10 Atkinson, are combined, there is a 11 statistically significant increased trend, 12 correct? 13 MS. GREENWALD: Objection, form. 14 A. I don't know. I would have to 15 see. 16 (Exhibit 15-35, e-mail chain 17 dated June 7, 2017, marked for 18 identification, as of this date.) 19 Q. For the record, Exhibit 15-35 is 20 an e-mail exchange that you provided to us 21 between you and Carey Gillam, correct? 22 A. What's the question again? I 23 finally got to read it. 24 Q. You told Ms. Gillam in June of 25 2017 that when the results of these two</p>	<p style="text-align: right;">Page 280</p> <p>1 A. Yeah, that seems to be the case, 2 yes. That's correct. 3 Q. But that was a mistake, correct? 4 A. That when they are combined, they 5 are marginally statistically significant, 6 not -- without the term "marginally," they 7 are just marginally statistically 8 significant. 9 Q. They are not statistically 10 significant, correct? 11 A. They are marginally statistically 12 significant. 13 Q. Your statement to Ms. Gillam was 14 incorrect? 15 A. It seems it's not as correct as I 16 would like it to be. 17 Q. Now, with respect to the 18-month 18 studies, neither of the two 18-month CD-1 19 mouse studies are reported a statistically 20 significant increased trend for kidney 21 tumors against concurrent controls, 22 correct? 23 A. That was a marginal statistical 24 increase in the Sugimoto study. 25 Q. Correct, not statistically</p>
<p style="text-align: right;">Page 279</p> <p>1 24-month mouse studies are combined, there 2 is a statistically significant increased 3 trend, correct? 4 A. Correct, but I think that is 5 wrong. I think I probably intended the two 6 18-month studies. 7 Q. OK. 8 A. Or she might have -- 9 Q. In looking at your revised 10 report -- and this is in connection -- just 11 to be clear, you're talking about the 1983 12 study, which is the Monsanto study, 13 correct? 14 A. The first sentence is definitely 15 talking about the 1983 Knezevich and Hogan 16 study. 17 Q. That is a 24-month study, 18 correct? 19 A. That is a 24-month study. 20 Q. That is the context in which you 21 are telling Carey Gillam that when the two 22 24-month studies are combined, meaning the 23 Monsanto study and the Atkinson study, the 24 kidney tumors are statistically 25 significant, correct?</p>	<p style="text-align: right;">Page 281</p> <p>1 significant at P equals .05, correct? 2 A. That is correct. 3 Q. The Wood study did not find 4 kidney tumors at any dose group, correct? 5 A. That is correct. 6 Q. And the Sugimoto study did not 7 find any kidney carcinomas at any dose 8 group, correct? 9 A. It found kidney adenomas, that is 10 correct. 11 Q. So just so we are clear, the 12 Sugimoto did not find any kidney carcinomas 13 at any dose group, correct? 14 A. That is correct -- well, I don't 15 have kidney carcinomas here. So I would 16 have to look back at the original study to 17 make sure there were none because I don't 18 have them here. 19 Q. In your methodology, your goal at 20 least was to list kidney carcinomas 21 findings in all these studies, correct? 22 MS. GREENWALD: Objection, form. 23 I missed that. Sorry. 24 A. Say the question again, please. 25 Q. When you had kidney carcinomas</p>

1 data for these studies -- these animal
2 studies, you reported that in these tables,
3 didn't you?

4 A. When I had them, yes.

5 Q. But now --

6 A. In some of them, I'm not
7 absolutely certain. The Atkinson, et al.,
8 study, I don't think they separated them at
9 all. I don't think I had a chance to see
10 the difference. So I can't answer the
11 question.

12 The intent for kidney tumors was
13 to talk about the combined -- if the
14 combined could be made.

15 Q. But you actually report on kidney
16 adenomas and then you separately report on
17 kidney carcinomas and then you separately
18 report on kidney adenomas and carcinomas
19 combined?

20 A. Because I had that from Knezevich
21 and Hogan.

22 Q. So for the four CD-1 mouse
23 studies that you have one study finding a
24 statistically significant negative trend
25 for kidney tumors and no studies finding a

1 with increased dosing of glyphosate.

2 That's the Atkinson study, correct?

3 A. Let me look at it again.

4 Yup, that is probably significant
5 at the 05 level.

6 Q. In your pooled analysis though,
7 you conclude that glyphosate causes kidney
8 tumors, correct?

9 MS. GREENWALD: Objection, form.

10 A. Kidney tumors?

11 So pooling the 18-month studies
12 is significant. Pooling the 24-month
13 studies is marginally significant. Pooling
14 all four is significant. That is what I --
15 that is what it says.

16 Q. What data did you use in this
17 pooled analysis? Did you use data for
18 kidney adenomas, kidney carcinomas or for
19 both kidney adenomas and carcinomas
20 combined?

21 A. It's for kidney tumors, which is
22 adenomas and/or carcinomas.

23 Q. So for the Sugimoto study then,
24 where you had only data for adenomas, what
25 data did you use for the carcinomas to pool

1 statistically significant positive trend,
2 correct?

3 A. Marginally significant positive
4 trend.

5 Q. I'll ask the question again.

6 From the four CD-1 mouse studies,
7 the P equals .05 is the statistical
8 significance. You had one study finding a
9 statistically significant negative trend,
10 meaning less tumors with more glyphosate
11 for kidney tumors, and no studies finding a
12 statistically significant positive trend,
13 correct?

14 MS. GREENWALD: Objection, form,
15 asked and answered.

16 A. The overall evaluation included
17 both the trend test and the historical
18 controls, but yes, when just looking at the
19 trend test and not using anything to do
20 with the historical controls, there are two
21 marginal statistically significant findings
22 that are not at the .05 level.

23 Q. And there is one finding at the
24 05 level, statistically significant,
25 showing a lower incidence of kidney tumors

1 for combined total?

2 MS. GREENWALD: Objection, form.

3 A. I'd have to go back to the
4 original Sugimoto study to be able to
5 address that, the Greim study.

6 Q. But am I correct for the pooling,
7 you would want to put in -- assuming that
8 there were no kidney carcinomas in that
9 Sugimoto, you would want to include 0000
10 for the kidney carcinomas in your pooled
11 analysis for Sugimoto, correct?

12 MS. GREENWALD: Objection, form.

13 A. I didn't do a pooled analysis of
14 kidney carcinomas alone. So I can't answer
15 the question because you -- I didn't do
16 such an analysis.

17 Q. No, I'm talking about for
18 combined, when you do a combined analysis,
19 would you include the data for the kidney
20 carcinomas in that pooled analysis?

21 A. Yes, I would.

22 Q. Now, your pooling methodology for
23 renal tumors did result in what you have
24 described here today as marginally
25 significant -- a marginally significant

<p style="text-align: right;">Page 286</p> <p>1 increased trend for renal tumors in the two 2 24-month studies, correct? 3 And if you look at page 11 of 4 your rebuttal report, where you have your 5 pooled analysis -- if you go in your 6 rebuttal report, you have the table. It is 7 just a little bit easier to find. 8 Table 3 on page 11 of your 9 rebuttal report has all your pooled 10 analysis. 11 A. OK. Got it. 12 Q. So for the two 24-month studies, 13 when you pooled them for kidney adenoma and 14 carcinoma, you report what you have been 15 describing as a marginally significant 16 increased trend, correct? 17 A. For the 18-month studies? 18 Q. No, the 24-month studies. 19 A. 24-month studies. 20 That is correct. 21 Q. So based upon your pooling 22 methodology then, your opinion that the 23 renal tumors and the combined data for 24 Knezevich and Atkinson show an increased 25 trend of tumors, that's almost significant,</p>	<p style="text-align: right;">Page 288</p> <p>1 Q. And for the Atkinson study, which 2 is the next page, on 39, you have 2 out of 3 50 kidney adenomas and carcinomas in the 4 control animals, correct? 5 A. That is correct. 6 Q. You have 2 out of 50 in the low 7 dose, correct? 8 A. That is correct. 9 Q. You have 0 out of 50 in the mid 10 dose and 0 out of 50 in the high dose, 11 correct? 12 A. That is correct. 13 Q. And so if you look at these two 14 studies combined, you have 3 renal tumors 15 out of 99 control mice in the control 16 animals, correct? 17 A. That's correct. 18 Q. You have 2 renal tumors out of 99 19 in the low-dose groups, correct? 20 A. Correct. 21 Q. You have 1 renal tumor out of 100 22 in the mid-dose group, correct? 23 A. These are terribly different 24 doses. You can't just combine them that 25 way. That's not how it's done. I'm sorry.</p>
<p style="text-align: right;">Page 287</p> <p>1 correct? 2 MS. GREENWALD: Objection, form. 3 A. The combined pooled analysis of 4 Atkinson and Knezevich, that shows a 5 marginally significant P value which is 6 almost significant, correct. 7 Q. For an increased trend in tumors 8 with increased -- 9 A. For an increased trend in tumors. 10 Q. If you can go to your report -- 11 your initial report at page 38, so we can 12 look at the data. 13 For the Knezevich study, you have 14 1 tumor in the control animal, 0 in the 15 low-dose group, 1 out of 50 in the 16 high-dose group, and 3 out of 50 in the -- 17 I'm sorry, let me state that again. 18 For Knezevich, for kidney adenoma 19 and carcinoma combined, you report 1 out of 20 49 tumors in the control animals, 0 out of 21 49 in the low-dose group, 1 out of 50 in 22 the mid-dose group, and 3 out of 50 in the 23 high-dose group, correct? 24 A. That's what EPA reported, that's 25 correct.</p>	<p style="text-align: right;">Page 289</p> <p>1 Each individual group and its dose is fed 2 into the pooled analysis exactly like it is 3 in the study. 4 So the pooled analysis would have 5 1 out of 49 in control and 2 out of 50 in 6 control. Then at a dose of 190 mgs per 7 kilo per day, it would be 0 out of 49. At 8 102, it would be 2 out of 50. At 298, it 9 would be 0 out of 50. At 955, it would be 10 1 out of 50. At 1,000, it would be 0 out 11 of 50. And at 5,874, it would be 3 out of 12 50. 13 Q. So the trend analysis then, if I 14 understand your testimony correctly, that 15 you conducted for the purposes of your 16 expert report here did a trend analysis 17 using each of the different dose levels as 18 a different point in the trend analysis 19 over the combined studies, is that correct? 20 MS. GREENWALD: Objection, form. 21 A. The individual doses are attached 22 to the chemical. You don't just 23 haphazardly pool high and low dose. 24 If that's what you just said, 25 then that's correct.</p>

1 Q. Let me just be clear, in your
2 earlier submissions to EPA and to the
3 European regulators, you did combine doses
4 into a control, a low dose, a mid dose and
5 high dose for your trend analysis, correct?

6 MS. GREENWALD: Objection, form.

7 A. No, I didn't. I combined them
8 into that form for an illustration of what
9 the dose response trend looked like,
10 because when you put the individual dose
11 response points up there, it's very
12 difficult to see a trend just simply
13 because of the nature of that type of data,
14 but by grouping doses that were close
15 together, you got a better chance.

16 The pictures also included a
17 confidence interval side to side and up and
18 down.

19 Q. Let me make sure I'm clear on
20 your methodology.

21 A. That's not what's here.

22 Q. I understand that.

23 In your methodology, when you
24 submitted a pooled analysis to the EPA, did
25 you conduct your P analysis based upon 4

1 significant trend.

2 The reason it's statistically
3 significant is because the three out of
4 control are at low doses, which also have
5 very low response as well, and remember,
6 it's not 3 out of 50, 49 in control, or 99,
7 it's 1 and 2. But they are matched with
8 other dose groups that are 0, 0, 2, 0, 0,
9 0, 0. That pushes that down in the low
10 exposure range and the upper exposure range
11 picks up the trend.

12 That is why you see a
13 statistically significant trend.

14 Q. And just so we are clear, if you
15 look at the different tumor levels in these
16 two studies, there were five renal tumors
17 found in the controls and the lowest dose
18 group studied, and that there were four
19 tumors found in the three highest dose
20 groups studies, correct?

21 A. Again, over a very broad range,
22 that is a statement of fact.

23 Q. So through your pooling
24 methodology with two studies where you have
25 5 tumors out of 200 in the lowest -- in the

1 different combined dose groups or did you
2 conduct your pooled analysis based upon 8
3 or 16 or 12 different dose levels as the
4 case may be?

5 MS. GREENWALD: Objection, form.

6 A. The analyses submitted to EPA
7 included both simply for completeness. The
8 individual dose group studies are the one
9 which are the clearest and correct way to
10 do this.

11 Q. And just so I understand then,
12 for your pooled methodology, while you have
13 three tumors -- real tumors in control mice
14 in Knezevich and Atkinson and three tumors
15 in the high-dose group in Knezevich and
16 Atkinson, that data under your pooled
17 methodology results in an almost
18 statistically significant increased trend
19 in tumors with increased dose, correct?

20 MS. GREENWALD: Objection, form.

21 A. There are other doses in that
22 dose response range which all play a role
23 in the statistical significance of that
24 trend. And all of those doses combined in
25 the pooled analysis gave a statistically

1 controls at the lowest dose studied and 4
2 tumors out of 200, if you will, in the
3 highest doses studied, you have an almost
4 statistically significant increased trend,
5 is that correct?

6 MS. GREENWALD: Objection, form.

7 A. I'm sorry, you have -- you have
8 lost me. What am I doing?

9 You're trying to make me pool
10 something new?

11 Q. I'm not making you pool anything.
12 You have done the pool.

13 In pooling these two studies, you
14 have -- the data shows that you have 5
15 kidney tumors in the 150 animals where you
16 have control animals and the lowest dose
17 studied, correct?

18 A. I have what appeared in the lower
19 dose groups, that is correct.

20 Q. And so you have -- and you have 4
21 tumors out of 150 in the highest doses
22 studied?

23 A. There are doses with 0, 0, 1 and
24 3.

25 Q. I understand that. But if you

1 look at the data combined and you're
2 pooling this data --

3 A. I'm not going to look at the data
4 combined. The data is what it is. The
5 data is 0, 0, 1, 3.

6 Q. It's actually 1, 0, 1, 3 --

7 A. 1, 0, 1, 3, whatever.

8 Q. -- and 2, 2, 0, 0, correct?

9 A. It is whatever it really is. So
10 it is 1, 2, 2, 0, 1, 0, and 3.

11 Q. And that distribution under your
12 pooling analysis results in an almost
13 statistically significant increased trend,
14 correct?

15 MS. GREENWALD: Objection, form.

16 A. That distribution under the use
17 of the scientifically verifiable and
18 methodologically sound Armitage linear
19 trend testing proportions shows a P value
20 which is statistically significant.

21 So does the analysis using the
22 logistic regression approach suggested by
23 your expert.

24 Q. We can talk about that later
25 because our expert wouldn't agree to that.

1 are three ways you can calculate P values
2 in the Armitage linear trend test.

3 So the choice of which datasets
4 to pool has not changed. So the pooling
5 has not changed. The analysis by the
6 Armitage linear trend test in proportions
7 has not changed. The only thing that has
8 changed has been the way in which I
9 calculate the P values for those tests.

10 Q. Understood.

11 The -- let's talk about the
12 modified table 15 in your rebuttal report.

13 A. OK.

14 Q. So your table 15 in your listing
15 of total sites, that is, as I understand
16 it, a calculation of the total sites for
17 which three or four tumors were found in
18 the glyphosate data, correct?

19 A. With exception. The rare tumors
20 in kidney and hemangiosarcomas are also
21 included in this table.

22 Q. That wasn't my question. My
23 question is the total sites column.

24 A. The hemangiosarcomas only have
25 two tumors.

1 Let's talk about -- I take it
2 that you have your code for your pooling
3 analysis -- various pooling analyses that
4 you conducted over time, correct?

5 A. Let me correct something here.
6 You keep calling it "my pooling analysis."
7 The pooling analysis I did is the more
8 accurate statement. Again, because I told
9 you Dourson has already done it, by all
10 technical reasons, I would have to
11 reference him now that I know it's there,
12 and so it should be his pooling algorithm,
13 not mine.

14 But the point is it is just the
15 pooling algorithm I used.

16 Q. The pooling algorithm you used,
17 you still maintain that?

18 A. Yes.

19 Q. And has that pooling algorithm
20 changed over time for glyphosate?

21 A. I'm going to try to break it down
22 to make it clear.

23 There is pooling of the data, and
24 then there is analysis of data by the
25 Armitage linear trend test, and then there

1 Q. I understand that.

2 A. I am sorry.

3 Q. My question is, if you look at
4 modified table 15, you have a calculation
5 of total sites.

6 Do you see that?

7 And it's a column -- the fourth
8 column on modified table 15.

9 A. Yes, I see it.

10 Q. It has a footnote, footnote 1,
11 correct?

12 A. Yes.

13 Q. And total sites is based upon the
14 sites with three or more tumors, correct?

15 MS. GREENWALD: Objection, form.

16 A. Actually, it's described directly
17 in the text of the document. On page 4
18 first full paragraph, this also includes
19 joint analyses and some room for joint
20 analyses and other things.

21 Q. I understand that.

22 I'm looking again just at the
23 total sites column.

24 A. Correct.

25 Q. And you have a footnote that

describes that the total sites are taken from an analysis done by a Dr. Haseman, correct?

MS. GREENWALD: Objection, form.

A. It's a suggestion from Dr. Joseph Haseman in his EPA testimony.

Q. And Dr. Haseman in his EPA testimony is quantifying the number of sites in the glyphosate data for which three or more tumors were found, correct?

A. He is quantifying the number of sites which he felt would be relevant in a statistical evaluation of how many sites were actually evaluated in the study.

Q. Well, for this column though he is actually just doing an addition. He's adding up the number of sites for which three or more tumors were found in this column?

A. No, in this column is me adding up three or more tumors --

Q. OK.

A. -- and adding, like Dr. Haseman did, some room for joint analyses of tumor findings.

And female rats, 26."

Correct?

A. That's what the footnote says.

Q. In Dr. Haseman's analysis, these numbers, at least 10.5, 15 and 21.5, are the numbers he calculated for tumors with -- for sites with three or more tumors, correct?

A. That's not what he says as far as I know. He was just looking for sites that would be likely.

But I'd have to see his EPA testimony again to make sure that that is the case.

Q. OK. So --

A. That is -- that is probably what he did. That's probably the case. I don't know if he said it.

Q. OK. But you now testify that you think it probably is the case that the numbers in this table for total sites are the number of sites for which three or more tumors were found?

MS. GREENWALD: Objection, form.

A. The numbers in this table --

Q. Is it your testimony that the total sites calculation that you use in your report includes sites where less than three tumors were found?

A. Yes.

Q. So that is your understanding of table 15 for the total sites column?

MS. GREENWALD: Objection to form.

A. Table 15 includes enough room to cover all of the analyses that were done.

Q. Well, that's -- I don't know what "enough room" means.

A. Enough numbers of tumors to incorporate all of the analyses that are relevant for these data.

Q. To get these numbers that you have listed here, you have a footnote that states:

"Numbers of sites is based upon suggestions by Dr. Haseman in his written testimony to the EPA with female rats modified for fewer sites with three or more tumors. Male mice, 10.5 sites. Female mice, 15 sites. Male rats, 21.5 sites.

Q. For total sites.

A. -- are consistent with what I found in evaluating the numbers of sites with three or more from the data in these studies.

Q. OK, fair enough.

The total sites then is used as your -- as one of the -- well, total sites is then used to calculate the expected number of sites you would see at P less than .05, correct?

If you take the total sites and multiply it by .05, correct?

A. Correct.

Q. That's your expected number of less than .05, which is the column on table 15 right next to the total sites column, correct?

A. That is correct.

Q. And you also use that total site column -- total site number to calculate the expected sites P less than .01, correct?

MS. GREENWALD: Objection, form.

A. I used the total sites,

multiplied it by .01 to get the expected less than .01 in that last column -- third column -- third-from-last column.

I should note just for the record while we are here, I have an addition error. I put 19 on both sexes for rats when it is really 18.

Q. And the --

A. The sum is the same.

Q. 30 should be 29?

A. No, the 30 is 30. That 19 is just wrong.

Q. That should be 18?

A. 18.

Q. So 11 and 6 equal 18?

A. Let's see here.

Q. If you have 11 male and 6 female, you add up to 18?

A. The 12 -- the first one is 12.

If I count the tumors themselves, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 1, 2, 3, 4, 5, 6, it should be 18.

I don't know why the counts in the tumors are incorrect for the rats.

Q. OK. So now for your observed

very rare tumors, which are the two mouse tumors we were talking about earlier, and those P values are put in here from the historical trend test, not from the typical trend test.

Q. So let me make sure I understand correctly.

In your table 15, for your expected, you have the number of tumors you would expect based upon total sites with three tumors or more, and then you have your expected and then you have your observed column, and your observed column also includes tumors that you observed -- or trends that you observed based upon your historical trend analysis, correct?

MS. GREENWALD: Objection, form.

A. I -- I'm -- I'm not understanding the question. It's --

Q. OK. Your -- through your historical trend analysis --

A. Let me try -- let me try something --

Q. Let me just ask the question this way: For your historical trend analysis,

tumors, which you have next to your expected, you also include trends that you calculate based upon your p-hist. analysis, correct?

A. I'm sorry, say that again.

Q. For your observed trends of less than .05, and for less than .01, you use -- you report the numbers that you find for a concurrent control trend test and also add to that the numbers of -- that you observed through your p-hist. analysis -- historical trend analysis?

A. No, of course not. That would be terribly methodologically flawed.

Q. So is it your testimony then that you do not include in your observed count in table 15 findings that are only significant based upon the historical trend analysis?

A. No, the -- this -- I should be clear in the text, but I'll make it clear now, what I'm putting in here is the P value observed for the trend test, because the correct control to use is the control for the trend test, except in the cases of

for example, you calculated statistically significant trends at two sites where there are only two tumors, correct?

A. Rare tumors at rare sites.

Q. Right. And those sites would not be part of the total sites that you have listed in your column on total sites because there is only two tumors there, correct?

A. No. This is not -- as I pointed out before, this is for the typical types of analyses that would be done. Enough extra counts were put in there to cover the counts for the two rare tumors that we looked at.

Q. OK, let me go back to that, because I'm misunderstanding. I thought we had established this.

In your total sites, footnote 1 shows how those total sites were calculated based upon what Dr. Haseman had calculated. Those were the sites for which three or more tumors were found, correct?

A. No --

MS. GREENWALD: Objection, form.

<p style="text-align: right;">Page 306</p> <p>1 A. -- I'm sorry, that's not the 2 case. 3 If you look at table 1 in the 4 report -- in my rebuttal report, table 1 5 tells you how many tumors of each type were 6 in each -- were in each of the studies. 7 Q. Right. And you have each 8 individual site, and then for you total 9 sites, you also include combined tumors, 10 correct, where you had three or more tumors 11 in the combined data, correct? 12 A. If they are even done or not 13 done. 14 But I have -- in this table, I 15 have more than -- I have somewhere around, 16 I believe, 100 more observe -- more -- I 17 have the possibility of 100 more 18 evaluations being done than the total 19 number of eval -- of sites with three or 20 more tumors. 21 So I've left 100 open spots for 22 analyses that might have been done rather 23 than just the three or more tumors. 24 Q. Dr. Portier, the numbers that you 25 have in your report for total sites are</p>	<p style="text-align: right;">Page 308</p> <p>1 with three or more tumors? 2 MS. GREENWALD: Objection, form, 3 asked and answered. 4 A. I would have to see Dr. Haseman's 5 comments to be able to answer that question 6 for you. 7 Q. Well, would you agree if those 8 numbers for total sites only include sites 9 with three or more tumors, for your 10 analysis, since you also looked at 11 historical trends and rare tumors, you 12 would have to provide some additional bump 13 up for the total sites to account for the 14 possibility of trends, the sites with fewer 15 than three tumors, correct? 16 MS. GREENWALD: Objection, form. 17 A. That bump up, as you put it, is 18 already incorporated in these sets of 19 numbers such that there are sufficient 20 numbers in each of the sex species groups 21 that I feel I've probably put a number in 22 here which is more than the number of 23 evaluations which were actually done. 24 Q. OK. And in your calculation of 25 your adjustment for p-hist. -- first of</p>
<p style="text-align: right;">Page 307</p> <p>1 numbers that Dr. Haseman reported, correct, 2 that's where you got those numbers? 3 MS. GREENWALD: Objection, form. 4 A. With a modification, and those 5 numbers are very conservative. 6 Q. The modification you made was to 7 reduce the number of sites for female rats 8 as -- from what Dr. Haseman had reported 9 and you made it lower, correct? 10 A. Yes. 11 Q. And Dr. Haseman -- 12 A. And I explained why I did that. 13 Q. And Dr. Haseman, in adding up 14 those sites that you use, he added the 15 number of sites, either with individual or 16 combined analyses, that had three or more 17 tumors, correct? 18 A. No, he was -- he was just roughly 19 looking at two of the -- three of the 20 studies, I believe -- I'd have to see his 21 writeup, if you have it. 22 Q. Sitting here today, you don't 23 recall one way or the other whether those 24 total site numbers from Dr. Haseman that 25 you use in your table 15 were for sites</p>	<p style="text-align: right;">Page 309</p> <p>1 all, in deciding which studies or tumor 2 sites to conduct historical analyses for, 3 you did not do historical analyses for all 4 rare tumors in these studies, correct? 5 MS. GREENWALD: Objection, form. 6 A. Yeah, I -- I don't -- I don't 7 understand the question. I am sorry. 8 Q. In deciding which tumor sites to 9 conduct a p-hist. analysis, you base that 10 on your review of where there were sites 11 that were -- where there had been one 12 finding of a statistically significant 13 trend in a concurrent control, correct? 14 MS. GREENWALD: Objection, form. 15 A. Yeah, I'm -- again, you have lost 16 me in the question. I am sorry. 17 Q. Let me ask this: Through your 18 p-hist. analysis, you can calculate 19 statistically significant trends at sites 20 with one or two tumors, correct, for rare 21 tumors? 22 A. An analysis using that approach 23 could potentially find a positive finding 24 for just two tumors, that is correct. 25 But the two I chose -- the</p>

<p style="text-align: right;">Page 310</p> <p>1 tumors -- let -- the tumors I chose to 2 evaluate were identified by regulatory 3 agencies as a concern because those tumors 4 were different than the historical 5 controls. 6 I didn't go back and look at 7 every single site and get historical 8 controls for every single site because I 9 didn't analyze every single site with two 10 tumors in it. So that just -- it would 11 never have occurred except that this was 12 flagged already by the regulatory 13 community. 14 Q. So in your -- 15 A. And I will add, because I still 16 don't understand -- I guess I don't have to 17 understand the relevance of your questions. 18 Q. So for your historical trend 19 analysis, you didn't conduct -- you only 20 did historical trend analysis for tumors 21 that had been flagged as potential issues, 22 correct? 23 MS. GREENWALD: Objection, form. 24 A. I did -- for every tumor where 25 EPA or some other authority flagged it as</p>	<p style="text-align: right;">Page 312</p> <p>1 historical trend analysis, where you could 2 calculate a p-hist., the rare tumor, and 3 you have two tumors, so there's enough with 4 rare tumors, two tumors with a historical 5 trend analysis is enough to find a 6 historical -- to find a trend, correct? 7 A. With the right historical control 8 dataset, yes. 9 Q. And if you were to look at 20 10 rare tumors where you have historical 11 control data and run a p-hist. analysis, 12 you would expect by chance that one of them 13 would report a P less than .05, correct? 14 MS. GREENWALD: Objection, form. 15 A. No, I can't say that. You're in 16 a realm of behavior of the statistical 17 methods that are dependent upon both the 18 historical control dataset and the 19 concurrent dataset, and to be quite honest, 20 I'd have to sit down and do some analyses 21 to figure out what this type of analysis 22 you are suggesting would be done. 23 But I don't understand why you're 24 suggesting the analysis because typically 25 you flag something as a rare tumor based</p>
<p style="text-align: right;">Page 311</p> <p>1 falling outside of the range of historical 2 controls, and arguing that it could go 3 away, I did the historical control analysis 4 to illustrate the importance of doing 5 something correct with historical controls. 6 However, as I say at the 7 beginning, the best control to use for any 8 of these studies is the concurrent control, 9 except in the case where there are rare 10 tumors. So in those cases, I used the P 11 value from historical control for this 12 table that you're looking at. 13 Q. If you were to determine the 14 number of P trends that you might find by 15 chance in a historical trend analysis of 16 rare tumors -- so you would have -- as you 17 have already testified, if you conduct 20 18 tests, you would find one by chance, 19 correct? 20 MS. GREENWALD: Objection, form. 21 A. You would not find any by trend 22 analysis. I'm sorry, two -- two tumors -- 23 I must have missed your question. 24 Q. I'll ask it again. 25 For tumors where you can do</p>	<p style="text-align: right;">Page 313</p> <p>1 upon the advice of the pathologist 2 involved. 3 Q. I understand. But in your 4 table 15, you're comparing what you observe 5 to what would be expected by chance. 6 And what I'm trying to understand 7 is what you -- what number of sites you 8 would expect to see by chance for rare 9 tumors or through historical trend analysis 10 versus the number of trends you found with 11 a historical trend analysis? 12 MS. GREENWALD: Objection, form. 13 A. But this table, 15, is only for 14 the number of analyses done. It's not -- 15 not a theoretical number of analyses. It 16 is for analyses done. 17 Q. That may be why I misunderstood. 18 So your table 15 is comparing 19 only the analyses you did as total sites, 20 and then calculating an expected number of 21 sites and an observed number of sites, is 22 that correct? 23 A. No. It's calculating the number 24 of potential sites. 25 I didn't calculate exactly how</p>

<p style="text-align: right;">Page 314</p> <p>1 many analyses I did. I guess I can go and 2 do that but I haven't, because what you're 3 looking at is -- I looked at all the EFSA 4 studies and EPAs. 5 So it wouldn't be correct for me 6 to put in here the total sites that I 7 personally evaluated, because those other 8 documents guided me to sites, and those 9 other documents had evaluated sites in a 10 standard statistical way. But they didn't 11 tell me how many they did. 12 So I technically can't give you 13 an exact number for the total sites. This 14 is the way it is sometimes with practical 15 science. What I can do is create a 16 logical, reasonable estimate for the total 17 sites that had been reviewed, had been 18 analyzed. And that's what this is. 19 Q. Just so I'm clear, if your total 20 sites number did not include the numbers 21 that would account for both individual 22 tumor types with three or more tumors for 23 adenomas and carcinomas and combined total 24 sites with three or more tumors and the 25 rare tumors for which you might find a</p>	<p style="text-align: right;">Page 316</p> <p>1 kidney carcinomas, kidney adenomas and 2 carcinomas combined? 3 MS. GREENWALD: Objection to the 4 form. 5 A. I've allowed sufficient numbers 6 in the total sites to cover those. 7 Q. Have you added up all the sites 8 in the studies with adenomas more than 9 three, carcinomas more than three, and 10 adenomas and carcinomas combined more than 11 three? 12 MS. GREENWALD: Objection to 13 form. 14 A. You wouldn't always do the 15 combined analysis. That's not standard 16 methodological practice in toxicology. You 17 do the combined analysis only sometimes. 18 So adding up that number, 19 creating that number that you just made 20 up -- you just suggested would not reflect 21 the number of sites that would actually be 22 done. 23 Q. Have you gone through the 24 exercise of adding up the sites that you 25 think should be combined so you actually</p>
<p style="text-align: right;">Page 315</p> <p>1 statistically significant finding -- 2 A. The two rare tumors. 3 Q. OK, so all of those 4 possibilities, for your modified table 15 5 to make sense, would have to add up to the 6 total sites that you have listed in your 7 total tumor sites? 8 MS. GREENWALD: Objection to 9 form. 10 A. Or in this case, I've been 11 conservative enough that I'm pretty certain 12 that total sites is larger than that number 13 of the sites that you have evaluated, which 14 makes it somewhat conservative. 15 Q. And you can, in fact, just add up 16 the number of sites in these studies with 17 three or more tumors, correct, you have got 18 all the data? 19 A. I've done that. 20 Q. Have you looked at all the sites 21 combined and separately? 22 Because you report both of those 23 in your table. 24 MS. GREENWALD: Objection, form. 25 Q. So you have kidney adenomas,</p>	<p style="text-align: right;">Page 317</p> <p>1 have the total number of sites with 2 adenomas, with carcinomas, and adenomas and 3 carcinomas combined where you believe 4 that's appropriate? 5 MS. GREENWALD: Objection to 6 form. 7 A. You can't do that evaluation sort 8 of in isolation. So no, I have not done 9 that. 10 Q. So sitting here today, do you 11 know the total sites -- total number of 12 sites for which you could have done a trend 13 analysis for -- I'm sorry, for adenomas, 14 for carcinomas, and as you think it 15 appropriate, adenomas and carcinomas 16 combined in this dataset? 17 MS. GREENWALD: Objection to 18 form. 19 A. You can't -- again, you can't 20 look at it that way. If carcinomas are 21 zero, for example, you would only do the 22 adenoma evaluation. If adenomas are zero 23 and you have carcinomas, you would only do 24 the carcinoma evaluation. There are other 25 similar situations where you do those site</p>

<p style="text-align: right;">Page 318</p> <p>1 types of evaluations.</p> <p>2 Unless I sat with EPA and they</p> <p>3 gave me every test they did, or I sat with</p> <p>4 EFSA and they told me every test they did,</p> <p>5 I cannot figure that number out. All I can</p> <p>6 do is give you an approximation.</p> <p>7 Q. OK, I'm not asking about the</p> <p>8 number of analyses that were done. I'm</p> <p>9 asking you about the number of analyses</p> <p>10 that could be done, because that's what</p> <p>11 your total sites column is, correct?</p> <p>12 MS. GREENWALD: Objection to</p> <p>13 form.</p> <p>14 A. No, the total sites column should</p> <p>15 be an estimate of the number of sites that</p> <p>16 were done. That is what it's attempting to</p> <p>17 give you.</p> <p>18 Q. I understand.</p> <p>19 MR. LASKER: Let's take a break.</p> <p>20 THE WITNESS: I'm happy to go on.</p> <p>21 Q. In your report for female CD-1</p> <p>22 mice, you have listed an observed trend</p> <p>23 that you identify as "SL."</p> <p>24 Do you see that?</p> <p>25 It's on mice tumors P less than</p>	<p style="text-align: right;">Page 320</p> <p>1 MS. GREENWALD: Objection to</p> <p>2 form.</p> <p>3 A. They're not -- they're not -- I'm</p> <p>4 sorry, give me a minute to look this up,</p> <p>5 please.</p> <p>6 Splenic lymphosarcomas. They are</p> <p>7 not lymphomas. They are lymphosarcomas.</p> <p>8 Q. So in your testimony,</p> <p>9 lymphosarcomas do not need to be listed</p> <p>10 with lymphomas?</p> <p>11 I'm trying to understand.</p> <p>12 A. That's correct, you wouldn't</p> <p>13 combine sarcomas with lymphomas.</p> <p>14 Q. Do you know how many</p> <p>15 lymphosarcomas were analyzed in Knezevich,</p> <p>16 given tissue types?</p> <p>17 A. By whom.</p> <p>18 Q. By the investigators in</p> <p>19 Knezevich?</p> <p>20 A. I'm not able to see the full</p> <p>21 report from them, so I wouldn't know that.</p> <p>22 Q. And you have the data table</p> <p>23 from --</p> <p>24 A. But I don't have the report of</p> <p>25 what analyses they did, therefore, I can't</p>
<p style="text-align: right;">Page 319</p> <p>1 05.</p> <p>2 A. Mice tumors P less than 05 SL.</p> <p>3 Yes.</p> <p>4 Q. And you have SL listed as skin</p> <p>5 lymphoma?</p> <p>6 A. Yes, it is.</p> <p>7 Q. Now, I don't find any skin</p> <p>8 lymphoma in any of the studies. There was</p> <p>9 a SL trend in the Knezevich study that you</p> <p>10 report for spleen lymphomas.</p> <p>11 A. Oh, that's correct, that's the</p> <p>12 splenic lymphomas. Thank you. Yes, that</p> <p>13 is the splenic lymphomas.</p> <p>14 Q. You include spleen lymphomas as</p> <p>15 one of your observed trends in your</p> <p>16 table 15?</p> <p>17 A. It is an observed trend, that is</p> <p>18 correct.</p> <p>19 Q. OK.</p> <p>20 A. That is correct.</p> <p>21 Q. Now, the spleen lymphomas, I</p> <p>22 think in your rebuttal report, you state</p> <p>23 should be combined with all the lymphomas</p> <p>24 for a combined lymphoma number in doing a</p> <p>25 statistical analysis?</p>	<p style="text-align: right;">Page 321</p> <p>1 answer the questions.</p> <p>2 Q. You have data presented for a</p> <p>3 number of different tissue type</p> <p>4 lymphosarcomas in the Knezevich study,</p> <p>5 correct?</p> <p>6 A. I have -- yes, I have data tables</p> <p>7 that show lymphosarcomas in several</p> <p>8 different tissues.</p> <p>9 Q. And in your response to</p> <p>10 Dr. Corcoran, you testify that Dr. Corcoran</p> <p>11 improperly calculated trend analyses</p> <p>12 reporting out all of those different</p> <p>13 lymphosarcoma sites and that they should be</p> <p>14 combined in your opinion, correct?</p> <p>15 MS. GREENWALD: Object to form.</p> <p>16 A. I noted that he had done multiple</p> <p>17 analyses about lymphosarcomas and there</p> <p>18 only should be one lymphosarcoma analysis.</p> <p>19 However, I can't do that myself but I did</p> <p>20 report the one.</p> <p>21 Q. But the multiple lymphosarcoma</p> <p>22 sites that are separately calculated, those</p> <p>23 would not be separately listed as total</p> <p>24 sites because the total sites in your</p> <p>25 table 15 combines systemic tumors, correct?</p>

<p style="text-align: right;">Page 322</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. They were listed in the total</p> <p>3 site that Dr. Corcoran had done --</p> <p>4 Q. Not Dr. Corcoran's, I'm talking</p> <p>5 about yours.</p> <p>6 A. Let me finish -- and the table 15</p> <p>7 has one site for lymphosarcomas. One, it</p> <p>8 takes up one site and it was evaluated, so</p> <p>9 it is put into this table. And it had a P</p> <p>10 value associated with it, which also goes</p> <p>11 into this table.</p> <p>12 This is a table of what</p> <p>13 evaluations were done.</p> <p>14 Q. So the total sites column then</p> <p>15 does not -- in table -- modified table 15</p> <p>16 does not include the other lymphosarcomas</p> <p>17 sites that were analyzed in the Knezevich</p> <p>18 study, just the splenic lymphosarcoma,</p> <p>19 correct?</p> <p>20 MS. GREENWALD: Objection, form.</p> <p>21 A. In my table 1 on page 9 of the</p> <p>22 rebuttal reports, the three-or-more-tumors</p> <p>23 column only allows one spot for</p> <p>24 lymphosarcomas. So when lymphosarcomas</p> <p>25 were found, whether it was five organs or</p>	<p style="text-align: right;">Page 324</p> <p>1 study is the Monsanto 1983 mouse study,</p> <p>2 correct?</p> <p>3 A. The splenic lymphosarcomas?</p> <p>4 The rows are the Knezevich and</p> <p>5 Hogan study, that is correct.</p> <p>6 Q. So you have that full report --</p> <p>7 study report, correct?</p> <p>8 A. I have that study report, but the</p> <p>9 study report is presented with groups of --</p> <p>10 the part I have is presented with groups of</p> <p>11 animals by organ. So I -- it gives me the</p> <p>12 numbers for spleen and gives me the numbers</p> <p>13 for wherever, say, kidney.</p> <p>14 But because this tumor can appear</p> <p>15 quite often in multiple organs in the same</p> <p>16 animal, and I'm interested in incidents, I</p> <p>17 cannot back those numbers out and make the</p> <p>18 correct -- what I would consider the</p> <p>19 correct classification.</p> <p>20 Q. In your modified table 15, you</p> <p>21 also include listing of four observed sites</p> <p>22 for -- and these are actually as opposed to</p> <p>23 the skin and bone.</p> <p>24 You have four sites for skin</p> <p>25 tumors. You have three, I think, skin</p>
<p style="text-align: right;">Page 323</p> <p>1 one organ, I collapsed it down into a</p> <p>2 single entry into this table.</p> <p>3 Q. So in the Knezevich study then,</p> <p>4 for the purposes of your analysis, you have</p> <p>5 one total site where there could be a</p> <p>6 calculation conducted and one tumor site</p> <p>7 being splenic lymphosarcoma where you</p> <p>8 observed a trend, is that correct?</p> <p>9 A. That is -- for each study, there</p> <p>10 is sufficient room for that type of</p> <p>11 evaluation to be done, and in this case,</p> <p>12 there was one evaluation of that type, and</p> <p>13 that is included.</p> <p>14 Q. And the other however many other</p> <p>15 sites that were evaluated are not included</p> <p>16 in the total sites column?</p> <p>17 MS. GREENWALD: Objection, form.</p> <p>18 Q. For lymphosarcoma. I'm sorry.</p> <p>19 MS. GREENWALD: Same objection.</p> <p>20 A. I can't know that. I don't know</p> <p>21 how many other sites were evaluated. As I</p> <p>22 pointed out before, that information is not</p> <p>23 available to me, so I can't answer the</p> <p>24 question.</p> <p>25 Q. Just to be clear, the Knezevich</p>	<p style="text-align: right;">Page 325</p> <p>1 keratoacanthomas and one basal cell</p> <p>2 carcinoma in your table for the rat</p> <p>3 studies, correct?</p> <p>4 A. I have skin keratoacanthoma for</p> <p>5 the rat studies, I have three, and one</p> <p>6 basal cell, that is correct.</p> <p>7 Q. Now, let me show you -- you</p> <p>8 talked about the NTP is sort of the gold</p> <p>9 standard for these cancer bioassays,</p> <p>10 correct?</p> <p>11 A. For the way they are done and the</p> <p>12 way they are presented and the way they are</p> <p>13 analyzed, that is correct.</p> <p>14 Q. And the NTP combines different</p> <p>15 skin tumors into one category, correct?</p> <p>16 A. That I don't know for certain.</p> <p>17 MR. LASKER: Let's mark this.</p> <p>18 A. Of course, NTP uses a different</p> <p>19 strain of animals.</p> <p>20 Q. They use many different strains</p> <p>21 of animals, but I'm talking about -- let me</p> <p>22 ask you this: When NTP combines tumor</p> <p>23 types, does it combine different tumor</p> <p>24 types for different strains of animals?</p> <p>25 So, for example, you --</p>

<p style="text-align: right;">Page 326</p> <p>1 A. Oh, they might, yes, they might.</p> <p>2 Q. For skin tumors, do you know one</p> <p>3 way or the other whether NTP combines tumor</p> <p>4 types for any different type of rodent?</p> <p>5 A. No, I don't.</p> <p>6 (Exhibit 15-36, report entitled</p> <p>7 "NTP historical controls, report all</p> <p>8 routes and vehicles, Wistar-Han rats,</p> <p>9 August 2016, marked for identification,</p> <p>10 as of this date.)</p> <p>11 Q. This is Wistar rats, and I'll</p> <p>12 refer you to page 32 of this report.</p> <p>13 MS. GREENWALD: I am sorry, what</p> <p>14 page?</p> <p>15 MR. LASKER: Page 32.</p> <p>16 Q. As reflected at least for this</p> <p>17 rodent, the NTP combines I think it is</p> <p>18 something like 12 different types of skin</p> <p>19 tumors to report an overall combined</p> <p>20 instance for skin tumors, correct?</p> <p>21 A. On the previous -- 12?</p> <p>22 On the previous page, it gives</p> <p>23 the individual historical control data for</p> <p>24 basal cell adenoma or basal squamous tumor</p> <p>25 benign, basal cell adenoma, basal squamous</p>	<p style="text-align: right;">Page 328</p> <p>1 different sites for the skin or was skin</p> <p>2 just one site for your total site</p> <p>3 calculation?</p> <p>4 A. I'm sorry, when I counted up all</p> <p>5 the numbers of tumors greater than three</p> <p>6 tumors, it could easily have two skin sites</p> <p>7 or three.</p> <p>8 Q. Do you recall right now whether</p> <p>9 you had more than one skin site for your</p> <p>10 total sites or not?</p> <p>11 A. I would have to go back to the</p> <p>12 original tables and read through and see</p> <p>13 how many of them were greater than three</p> <p>14 and/or skin.</p> <p>15 I don't have that recollection.</p> <p>16 I can't remember that much detail on --</p> <p>17 with so many numbers around.</p> <p>18 MR. LASKER: Now I would like to</p> <p>19 take a break. Thanks.</p> <p>20 THE VIDEOGRAPHER: The time is</p> <p>21 4:36. Off the record.</p> <p>22 (Recess.)</p> <p>23 THE VIDEOGRAPHER: The time is</p> <p>24 4:48 p.m. We are on the record.</p> <p>25</p>
<p style="text-align: right;">Page 327</p> <p>1 benign or trichoepithelioma, basal cell</p> <p>2 carcinoma, basal cell carcinoma with basal</p> <p>3 squamous tumor, malignant or not otherwise</p> <p>4 specified, and then it provides a category</p> <p>5 for all of these things combined in one</p> <p>6 table, yes --</p> <p>7 Q. For purposes of --</p> <p>8 A. -- and there is no skin</p> <p>9 keratoacanthoma in this listing.</p> <p>10 Q. Actually, page 32, just so we are</p> <p>11 clear, the listing -- the second listing</p> <p>12 includes keratoacanthoma, correct?</p> <p>13 A. Yes, there it is, correct.</p> <p>14 Q. And that is grouped together with</p> <p>15 basal cell or squamous cell carcinoma,</p> <p>16 carcinoma, basal squamous tumors M or B,</p> <p>17 basal cell adenomas, adenomas, papillomas,</p> <p>18 squamous papillomas, keratoacanthoma and</p> <p>19 trichoepithelioma, correct?</p> <p>20 A. That's correct. It doesn't mean</p> <p>21 they would analyze it that way, but that is</p> <p>22 what's on this paper.</p> <p>23 Q. For the purposes of your total</p> <p>24 site analysis -- or total site numbers in</p> <p>25 modified table 15, did you have counts for</p>	<p style="text-align: right;">Page 329</p> <p>1 BY MR. LASKER:</p> <p>2 Q. Dr. Portier --</p> <p>3 A. Before you ask me a question,</p> <p>4 during the break, I took the time to look</p> <p>5 over this Charles River Laboratory document</p> <p>6 you gave me. And I would like to correct</p> <p>7 my reaction to it a little bit on the</p> <p>8 record.</p> <p>9 Q. Which document is that?</p> <p>10 A. 15-34.</p> <p>11 MR. LASKER: Let's go off the</p> <p>12 record for a second, just because I</p> <p>13 want to find out if you are going to be</p> <p>14 asking questions, but if you will, we</p> <p>15 will save it.</p> <p>16 THE VIDEOGRAPHER: Did you say go</p> <p>17 off the record?</p> <p>18 MR. LASKER: Yes.</p> <p>19 THE VIDEOGRAPHER: The time is</p> <p>20 4:49 p.m. We are off the record.</p> <p>21 (Recess.)</p> <p>22 THE VIDEOGRAPHER: The time is</p> <p>23 4:50 p.m. We are on the record.</p> <p>24 MS. GREENWALD: I would like the</p> <p>25 record to reflect Dr. Portier asked</p>

1 Mr. Lasker if he could have a minute or
2 two to clarify his answer to the
3 document 15-34, which he admitted
4 during his testimony before he had
5 never seen before, and during the
6 ten-minute break, Dr. Portier used that
7 to familiarize himself very briefly
8 with it.

9 He did not use that time at all
10 during the time Mr. Lasker was asking
11 him questions. He asked for one or two
12 minutes to clarify and correct his
13 answer, and Mr. Lasker right now is not
14 letting him do that.

15 MR. LASKER: Just so the record
16 is clear, Dr. Portier will have the
17 opportunity to clarify that before the
18 end of the deposition here today.

19 MS. GREENWALD: I have made my
20 peace. He can do it on your time.

21 Q. Dr. Portier, let's turn to your
22 opinions regarding mechanism of
23 carcinogenicity in your report.

24 You mentioned ten key
25 characteristics of carcinogens, and I think

1 limited and not -- doesn't warrant a full
2 review.

3 Q. OK, that's fine.

4 Now, you have stated that we
5 don't know for sure if glyphosate is
6 genotoxic, correct?

7 MS. GREENWALD: Objection, form.

8 A. Where would you -- where is this
9 in here?

10 Q. First of all, that's a general
11 question and then I can do a follow-up.

12 But I want to know if you recall
13 having made the statement that we don't
14 know for sure if glyphosate is genotoxic?

15 MS. GREENWALD: Objection, form,
16 and the witness asked you to please
17 identify where you think he made that
18 statement.

19 A. I can't -- I -- my expert
20 statement is right here and I believe my
21 conclusions on genotoxicity are quite
22 clear. So if you want to ask me about
23 that, please ask me about it.

24 Q. Well, I'm asking you whether or
25 not you have made the statement "we don't

1 it is part of the Smith publication,
2 correct?

3 A. That is correct.

4 Q. And is it your opinion that there
5 is only sufficient evidence for glyphosate
6 with respect to two of those
7 characteristics, correct?

8 A. I do not believe that is what I
9 said.

10 Q. Let me look at your report on
11 page 53.

12 And on page 53 you're talking
13 about the ten characteristics of mechanisms
14 for carcinogenicity, correct?

15 And it's the top of the page
16 where you cite to Smith.

17 A. That is correct.

18 Q. And you say, "There is limited
19 evidence on glyphosate for most of the key
20 characteristics," but then you identify two
21 characteristics, genotoxicity and oxidative
22 stress, which you believe have sufficient
23 evidence, correct?

24 A. To warrant a full review. I
25 reviewed all of the other evidence but it's

1 know for sure if glyphosate is genotoxic."
2 If you don't recall, that is
3 fine.

4 MS. GREENWALD: Objection, asked
5 and answered. My objection stays the
6 same.

7 A. I seriously don't recall.

8 Q. OK. Can you state here today
9 that you have not made the statement that
10 we do not know for sure if glyphosate is
11 genotoxic?

12 MS. GREENWALD: Objection, asked
13 and answered, argumentative.

14 A. I don't recall. It's still the
15 answer.

16 Q. Let's mark as -- I will have to
17 make this as two documents. This is an
18 article that appeared in a German news
19 site, so we have had it translated.

20 So we will have the German
21 document as the next in line, and then the
22 English translation as 38?

23 MS. GREENWALD: Can you please
24 tell us who translated it?

25 MR. LASKER: It is set forth on

1 the document.

2 MS. GREENWALD: Was it a
3 certified translator?

4 MR. LASKER: It is. You will see
5 it in a second.

6 (Exhibit 15-37, German article,
7 marked for identification, as of this
8 date.)

9 (Exhibit 15-38, translation of
10 German article, marked for
11 identification, as of this date.)

12 Q. So, Dr. Portier, 15-38, which
13 will be more useful for us to look at since
14 it is the translation to English -- first
15 of all, the record can reflect that it is a
16 certified English translation as set forth
17 on the bottom of page 1.

18 MS. GREENWALD: So, Mr. Lasker,
19 if I can just ask for the record
20 whether this was a certified
21 translator. I'm not seeing that
22 reference here, that she is a certified
23 translator.

24 She is certifying that she
25 translated it. Is she a certified

1 page 4 on the English translation, this
2 is -- just so the record is clear, and you
3 can look through this -- this document sets
4 forth a series of questions to you and your
5 answers on various issues with regard to
6 the EFSA and ACA review of glyphosate,
7 correct?

8 MS. GREENWALD: You have to give
9 him a chance to look at this,
10 Mr. Lasker.

11 A. Now, what is your question.

12 Q. This -- in your interview with
13 Mr. Forter and Ms. Fuchs, they asked you a
14 series of questions, and you provided
15 answers. That's normal interview format,
16 correct?

17 MS. GREENWALD: Objection, form.

18 A. In this case, they asked
19 questions, we had a discussion, that is
20 correct.

21 Q. And one of the questions they
22 asked you, as reflected on page 4 of the
23 English translation, was is glyphosate
24 genotoxic, correct?

25 MS. GREENWALD: Objection, form.

1 translator?

2 MR. LASKER: We will get that
3 information for you if it is not on the
4 document. I apologize right now.

5 MS. GREENWALD: It's not.

6 Q. Dr. Portier, in -- do you recall
7 being interviewed in July, which would be
8 about a month and a half ago, about the
9 European Union assessment of glyphosate?

10 MS. GREENWALD: I just want to --
11 I'm objecting to all these questions.

12 You can answer them, but I'm
13 objecting to all the questions on the
14 grounds that we have no idea if this is
15 an accurate translation.

16 MR. LASKER: That's fine.

17 A. I was interviewed by Martin
18 Forter and Stephanie Fuchs.

19 I don't believe it was July 18.
20 I think it was before that.

21 Q. OK, but then it would appear in
22 an article after you were interviewed, that
23 makes sense?

24 A. Of course.

25 Q. OK. And if you can look at

1 A. That is what they give -- your
2 translator has said what they say, and that
3 is what they say.

4 I can't tell you if they asked me
5 that question in this frame in the
6 interview.

7 Q. And if you look at the -- well,
8 do you speak German?

9 A. That still wouldn't solve the
10 problem because I don't know if they asked
11 me that question verbatim as they put it
12 here.

13 Q. That's not my question. My
14 question is: Do you speak German?

15 A. I speak some.

16 (German phrase.)

17 Q. If you can also look at
18 Exhibit 15-37, the German article on the
19 bottom of page 3, there is a question that
20 I'm going to butcher in German, but it "Ist
21 Glyphosat genotoxisch?" is the question.

22 MS. GREENWALD: Hold on.

23 Don't guess. I said don't guess.

24 If he is not fluent in German, he
25 can't guess on what this means.

1 MR. LASKER: OK.

2 A. Again, the -- there is a
3 two-stage process here. The first is did
4 they ask me the question? And the second
5 is did your translator get it right from
6 what they wrote?

7 I can't tell you if they asked me
8 this question verbatim. But I can tell you
9 that "Ist Glyphosate toxisch" is the
10 question that they have -- you have
11 converted to English.

12 Q. And the conversion "Is glyphosate
13 genotoxic" is an accurate translation of
14 that question, correct?

15 A. That is correct.

16 Q. The answer that they have -- you
17 can read it in German as well as in English
18 from you -- is, "We don't know for sure.
19 The data of 50 percent of the studies
20 argues for genotoxicity, 50 percent against
21 it."

22 First of all, do you see that
23 statement in the article?

24 MS. GREENWALD: Object to form.

25 A. I see it in the translation,

1 in the expert report.

2 Q. I understand that.

3 Are you saying that you did not
4 say this in the interview or are you saying
5 you can't recall whether you said it?

6 MS. GREENWALD: Objection, asked
7 and answered.

8 A. It was answered. I'm sorry, yes.
9 She is right.

10 Q. Do you recall whether you said to
11 these reporters, we don't know for sure
12 whether glyphosate is genotoxic?

13 MS. GREENWALD: Objection, asked
14 and answered now several times.

15 A. I do not recall.

16 Q. Do you recall whether you said,
17 in the interest of public health, we should
18 therefore classify glyphosate as genotoxic,
19 in my opinion?

20 MS. GREENWALD: Objection, form.

21 A. I cannot possibly answer the
22 question. No.

23 Q. You don't recall?

24 A. Don't know.

25 Q. You don't recall one way or the

1 that's clear. I have --

2 Q. You have to turn the page for the
3 German.

4 A. No, it's right here. But I'm not
5 good enough in German to look at this.

6 Q. Can you state, sitting here
7 today, that you did not state to this
8 reporter, in answer to the question "Is
9 glyphosate genotoxic," "We do not know for
10 sure"?

11 MS. GREENWALD: Objection to
12 form.

13 A. I can't tell you. They could
14 have easily taken it out of context or
15 something along those lines. I have no
16 idea. What I -- I can't answer "yes" or
17 "no" to that question.

18 Q. OK, so sitting here today, you
19 can't state that you didn't make this
20 statement, and you can't say that you did,
21 you just don't recall, correct?

22 MS. GREENWALD: Objection, form.

23 A. My current opinion on the
24 genotoxic data for glyphosate is in the
25 expert report. This does not match what's

1 other?

2 A. No. It was a long interview. It
3 was over an hour.

4 Q. The -- you do -- you agree that
5 just because a chemical can damage DNA,
6 that does not mean it will cause mutations,
7 correct?

8 MS. GREENWALD: Objection, form.

9 A. Say it again, please.

10 Q. Just because a chemical can
11 damage DNA, that does not mean it will
12 cause mutations, you agree with that
13 statement, correct?

14 MS. GREENWALD: Same objection.

15 A. In general, that is correct. I
16 would state it slightly different, but as a
17 general, broad sweep, that's good enough.

18 Q. And just to be clear, if you can
19 look at your expert report on page 53, I
20 thought I quoted you, but maybe I did not.

21 Page 53 in your expert report on
22 genotoxicity, the second full paragraph
23 starting "Just because a chemical can
24 damage DNA does not mean it will cause
25 mutations," correct?

- 1 A. Yeah.
 2 Q. That's your statement?
 3 A. That's my statement.
 4 Q. You agree with that, correct?
 5 A. I would have liked to have
 6 written it slightly differently and more
 7 nuanced, but that's good enough.
 8 Q. You agree that not all chemicals
 9 are mutagens, correct?
 10 A. Who defines what the geno -- it's
 11 going to depend on a lot of different
 12 things. Who's making the call, who's doing
 13 the evaluations, et cetera.
 14 But in looking at NTP studies
 15 with NTP evaluations, not all genotoxic
 16 substances cause tumors in male and female
 17 rats and mice.
 18 Q. And just to be clear also, not
 19 all chemicals that are reported to be
 20 genotoxic are found to be mutagenic,
 21 correct?
 22 A. Not all chemicals that are
 23 reportedly genotoxic are found to be
 24 mutagenic?
 25 I can't answer that question.

- 1 It's too broad. I'm sorry.
 2 Q. OK. I am correct that if a
 3 genotoxic chemical does not cause
 4 mutations, then it cannot cause cancer
 5 through a genotoxic mechanism, correct?
 6 A. The assays -- this is all
 7 dependent upon what you look at.
 8 The assays that are done for
 9 mutations are very limited assays looking
 10 at a very small number of genes and a very
 11 small number of mutations.
 12 So to answer your question, I can
 13 answer it this way: There are some
 14 chemicals that are genotoxic that do not
 15 appear to be positive in the toxicological
 16 assays that have been done to evaluate
 17 them.
 18 Q. I appreciate that. I was trying
 19 to ask a different question. I didn't word
 20 it correctly.
 21 This is not in an individual
 22 study that tests one way or another. This
 23 is a broader, mechanistic question.
 24 If a substance is genotoxic but
 25 it does not cause mutations, just as a

- 1 matter of fact, then it cannot cause cancer
 2 through a genotoxic mechanism, correct?
 3 A. It can do it through a side -- to
 4 really think it through -- through side
 5 activities.
 6 Genotoxic compounds are very
 7 reactive. They can damage other parts that
 8 could lead to oxidative stress or other
 9 things that will cause the mutations and
 10 the cancers.
 11 So it's complicated.
 12 Q. OK. And again, I didn't word
 13 this correctly, so I apologize, but for a
 14 chemical to cause cancer through a
 15 genotoxic mechanism, cause of action, it
 16 would have to progress to a mutagen -- a
 17 mutation -- I'm sorry -- correct?
 18 A. The -- in a theoretical sense, if
 19 such a compound were not interacting with
 20 anything else, then in a theoretical sense,
 21 in a multi-stage model, you would expect a
 22 mutation to occur. If you could find it,
 23 that may not be possible. But you would
 24 expect a mutation to occur.
 25 Q. And all of us sitting in this

- 1 room, we constantly have DNA damage to our
 2 cells in the ordinary course, correct?
 3 MS. GREENWALD: Objection, form.
 4 A. All living organisms have repair
 5 capacity and -- because they always have
 6 problems with their DNA during replication.
 7 Q. And in the ordinary course, we
 8 are having DNA damage in our cells probably
 9 millions of times each day, correct?
 10 MS. GREENWALD: Objection, form.
 11 A. I couldn't give you an exact
 12 number.
 13 Certainly not millions of times
 14 each day in each cell, because the DNA
 15 damage only really has any value during the
 16 time the cell replicates, and many of the
 17 cells in humans simply don't replicate that
 18 often.
 19 Q. Every time there is a replication
 20 though, in the ordinary course, it is not
 21 uncommon for there to be DNA damage,
 22 correct?
 23 A. That is correct.
 24 Q. As you said, the human body has
 25 repair mechanisms that respond to DNA

<p style="text-align: right;">Page 346</p> <p>1 damage so that it doesn't cause further 2 damage, correct? 3 MS. GREENWALD: Objection, form. 4 A. The body has DNA repair capacity 5 through several processes for different 6 types of DNA damage, yes. 7 Q. And you would also agree that not 8 all chemicals that test positive for 9 mutagenicity cause cancer in humans, 10 correct? 11 A. Not all chemicals that have been 12 tested for genotoxicity -- 13 Q. For mutagenicity. 14 A. -- for mutagenicity, and the 15 evaluation is done by reputable groups, 16 like the NTP, then I wouldn't be surprised 17 if some of those that were mutagenic were 18 not also carcinogenic, but I couldn't give 19 you one right now. 20 Q. Now, in your expert report, you 21 opine that the evidence is sufficient to 22 classify glyphosate as genotoxic, correct? 23 A. Yes. 24 Q. In your expert report, you do not 25 opine that the evidence is sufficient to</p>	<p style="text-align: right;">Page 348</p> <p>1 tests looking at effects of chemical on the 2 gene, yes. 3 Q. And you state in your report, 4 "Genotoxicity is a complicated area from 5 which to draw a conclusion due to the 6 diversity of studies available," correct? 7 A. It is, yes. 8 Q. And that is the case certainly 9 with glyphosate in your opinion, correct? 10 MS. GREENWALD: Objection to 11 form. 12 A. If I said it in here, you would 13 have to tell me where it is again. 14 Q. I'm just asking you, would you 15 agree that for glyphosate, genotoxicity is 16 a complicated area from which to draw a 17 conclusion due to the diversity of studies 18 available? 19 MS. GREENWALD: Objection to 20 form. 21 A. In general, genotoxicity is 22 complicated to make decisions because there 23 are so many different possibilities of how 24 people do it. They use different animals. 25 They use different cell lines. They use</p>
<p style="text-align: right;">Page 347</p> <p>1 classify glyphosate as a mutagen, correct? 2 MS. GREENWALD: Objection, form. 3 A. The -- there is -- the evidence 4 is insufficient to classify the mutagen 5 because of the reasons I gave earlier. 6 There aren't that many tests, and 7 they are very specific to very genes -- 8 very few genes, not the entire human 9 genome. 10 Q. And you do agree though that both 11 glyphosate and glyphosate formulations have 12 consistently tested negative in the Ames 13 mutagenistic test, correct? 14 A. They have consistently with the 15 exception, I believe, of four studies -- 16 but there were a lot of studies -- 17 consistently tested negative for the 18 reverse mutation assay of a specific gene 19 in salmonella typhimurium. So yes, the 20 Ames test. 21 Q. And as you note in your expert 22 report, there is a wide diversity of 23 different types of genotoxicity tests, 24 correct? 25 A. There are a wide diversity of</p>	<p style="text-align: right;">Page 349</p> <p>1 different links of time for the exposure, 2 et cetera. 3 So that is a usual case. I think 4 I said that here but I'm not certain so I 5 can't own up to that for this compound. 6 Q. But whether or not you said it in 7 your expert report, you agree that that 8 applies to glyphosate, correct? 9 A. Yes, when compared to something 10 like the animal cancer studies where you 11 have pretty much standardized designs on 12 everything. 13 Q. Let me ask you about your 14 opinions with regard to oxidative stress. 15 A. OK. 16 Q. You agree that oxidative stress 17 is not unique to cancer induction, correct? 18 MS. GREENWALD: Objection, form. 19 A. Not unique to cancer induction. 20 I'm not sure what you mean. 21 MR. LASKER: Let's mark the Smith 22 publication. 23 (Exhibit 15-39, article entitled, 24 "Key Characteristics of Carcinogens as 25 a Basis for Organizing Data on</p>

<p style="text-align: right;">Page 350</p> <p>1 Mechanisms of Carcinogenesis," marked 2 for identification, as of this date.) 3 A. Yes. 4 Q. And that paper -- this is a paper 5 you were coauthor on, correct? 6 A. Correct. 7 Q. And page 715, talking about 8 characteristic five induces oxidative 9 stress, correct? 10 A. Characteristic five induces 11 oxidative stress, that is correct. 12 Q. And you and your coauthor state, 13 about halfway through that first paragraph, 14 "Oxidative stress is not unique to cancer 15 induction," correct? 16 A. "And is associated with a number 17 of chronic diseases and pathological 18 conditions." 19 Yes. That is correct. 20 Q. And so -- and you agree with 21 that, correct? 22 A. That is correct. 23 Q. And the fact that a substance 24 causes oxidative stressor is bound to cause 25 oxidative stress in human cells in vitro,</p>	<p style="text-align: right;">Page 352</p> <p>1 noncarcinogens and look to see whether they 2 are reported to cause oxidative stress? 3 A. Noncarcinogens. 4 Q. Noncarcinogens. 5 A. This was known human carcinogens. 6 The entire analysis was known human 7 carcinogens. 8 And I'm not certain because it is 9 a separate analysis from the one I was 10 thinking of. I can't be certain it's only 11 the known human carcinogens. 12 Q. Are you aware of the fact that 13 there are medicines that are used to treat 14 cancer that cause oxidative stress? 15 A. Yes, I am. 16 Q. And oxidative stress has also 17 been recognized as potentially acting to 18 block carcinogenicity by inducing a -- I 19 say this apoptosis or cell death, correct? 20 MS. GREENWALD: Objection to 21 form. 22 A. At high enough levels, oxidative 23 stress in some cells will kill them through 24 an apoptotic or necrotic mechanism, but 25 different cells get different exposures so</p>
<p style="text-align: right;">Page 351</p> <p>1 or mammals in vitro, does not establish 2 that that substance can cause cancer, 3 correct? 4 MS. GREENWALD: Objection, form. 5 A. For any of the key 6 characteristics, seeing a key 7 characteristic does not establish that 8 that -- by itself does not establish that 9 that compound can cause cancer. 10 Q. So that would apply to oxidative 11 stress and to genotoxicity, correct? 12 A. That is correct. 13 Q. Can you cite to any scientific 14 publication or analysis that looks at the 15 percentage of substances that have been 16 shown to cause oxidative stress to see what 17 percentage of them have been shown to cause 18 cancer? 19 MS. GREENWALD: Objection, form. 20 A. Yes. We looked at it in the 21 paper that we just did on monograph 100, 22 but I have no idea if it is published yet 23 or not. 24 Q. In that same paper did you look 25 at scientific data that sets forth</p>	<p style="text-align: right;">Page 353</p> <p>1 it depends on the level of exposure as to 2 whether they get to that point. 3 Q. Oxidative stress is happening in 4 our body all the time, correct? 5 A. It's part of the energy system 6 that drives our ability to move. 7 Q. So exercise causes oxidative 8 stress, correct? 9 A. Of course. 10 Q. And having a cold would cause 11 oxidative stress, correct? 12 A. That's correct. 13 Q. Oxidative stress is happening all 14 the time in every cell in the human body 15 just through normal cell operations, 16 correct? 17 A. What you're measuring in these 18 studies is increased oxidative stress. 19 It's not yes, no. It's increased oxidative 20 stress. 21 Q. Well, just to be clear, exercise 22 causes an increase in oxidative stress, 23 correct? 24 A. Very marginally. 25 Q. And being sick can cause an</p>

<p style="text-align: right;">Page 354</p> <p>1 increase in oxidative stress, correct?</p> <p>2 A. Very marginal for a very short</p> <p>3 period of time.</p> <p>4 Q. And sunlight can cause an</p> <p>5 increase in oxidative stress, correct?</p> <p>6 A. That I'm not so certain of but it</p> <p>7 wouldn't surprise me.</p> <p>8 Q. What other non-exposure type</p> <p>9 activities have caused an increase in</p> <p>10 oxidative stress?</p> <p>11 A. I ---I don't quite recall. I'd</p> <p>12 have to consult a couple of good textbooks</p> <p>13 or articles.</p> <p>14 Q. And the body has repair</p> <p>15 mechanisms that are constantly responding</p> <p>16 to cellular damage caused by oxidative</p> <p>17 stress, correct?</p> <p>18 MS. GREENWALD: Objection, form.</p> <p>19 A. Not correct. They are responding</p> <p>20 to cellular damage regardless of the</p> <p>21 source.</p> <p>22 Q. OK. But they would -- in</p> <p>23 responding to cellular damage, they would</p> <p>24 respond to cellular damage caused by</p> <p>25 oxidative stress, correct?</p>	<p style="text-align: right;">Page 356</p> <p>1 studies that you cite to have compared the</p> <p>2 doses they use with the dose levels that</p> <p>3 would occur in human cells from the use of</p> <p>4 glyphosate-based herbicides?</p> <p>5 MS. GREENWALD: Objection, form.</p> <p>6 A. As I said, some of them I believe</p> <p>7 might have done that.</p> <p>8 The -- these are in vitro studies</p> <p>9 we are talking about, right?</p> <p>10 Q. These are the studies you relied</p> <p>11 upon.</p> <p>12 A. But you're asking me questions</p> <p>13 about in vitro studies or are you asking me</p> <p>14 questions about in vivo studies?</p> <p>15 Because it actually makes a</p> <p>16 difference. They are both -- they are both</p> <p>17 in there.</p> <p>18 Q. In your expert report -- let me</p> <p>19 ask you this: Whether in vitro or in vivo,</p> <p>20 is it your recollection any of those</p> <p>21 studies conducted an analysis to determine</p> <p>22 whether the dose that they use is at a</p> <p>23 level that is possible for the human cell</p> <p>24 to have as a result of the use of a</p> <p>25 glyphosate-based herbicide?</p>
<p style="text-align: right;">Page 355</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. If that damage was aimed at DNA,</p> <p>3 that is correct.</p> <p>4 Q. And you cite a number of studies</p> <p>5 in your expert report that you cite as</p> <p>6 support for your opinion that glyphosate</p> <p>7 can cause oxidative stress, correct?</p> <p>8 A. I'm sorry.</p> <p>9 Q. You cite to a number of studies</p> <p>10 in your expert report that you believe</p> <p>11 support your opinion that glyphosate can</p> <p>12 cause oxidative stress, correct?</p> <p>13 A. That's correct.</p> <p>14 Q. Have you conducted any analysis</p> <p>15 to determine whether the concentrations of</p> <p>16 glyphosate in those studies could ever</p> <p>17 occur in human cells from the use of a</p> <p>18 glyphosate-based herbicide?</p> <p>19 MS. GREENWALD: Objection, form.</p> <p>20 A. Me personally? No.</p> <p>21 Some of the studies did that.</p> <p>22 But not me personally.</p> <p>23 Q. And is it your opinion that you</p> <p>24 rely upon studies -- strike that.</p> <p>25 Do you believe that some of the</p>	<p style="text-align: right;">Page 357</p> <p>1 MS. GREENWALD: Objection, form.</p> <p>2 A. I already answered that. I said</p> <p>3 I thought some of them might have done that</p> <p>4 and talked about how large it was compared</p> <p>5 to humans.</p> <p>6 But I can't be absolutely</p> <p>7 certain.</p> <p>8 Q. In your assessment of</p> <p>9 genotoxicity, you state in your expert</p> <p>10 report that you give the heaviest weight to</p> <p>11 the in vivo studies in humans, correct?</p> <p>12 So there's three studies you talk</p> <p>13 about, two by Paz-y-Mino and one by</p> <p>14 Bolognesi, correct?</p> <p>15 MS. GREENWALD: Objection, form.</p> <p>16 A. The evaluation has different</p> <p>17 language than that. Because in the context</p> <p>18 of just talking about the human studies,</p> <p>19 the Bolognesi is the strongest, I think is</p> <p>20 what I said, but I don't know if I said I</p> <p>21 give the most weight.</p> <p>22 I am sorry, you would have to</p> <p>23 point it out in here.</p> <p>24 Q. In your revised report on</p> <p>25 page 54, you state that seeing genotoxicity</p>

<p style="text-align: right;">Page 358</p> <p>1 in humans is more important than seeing 2 genotoxicity in other mammals, which is 3 more important than seeing genotoxicity in 4 non-mammalian systems, correct? 5 A. All else being equal, that is 6 correct. 7 Q. As you said, the study in humans 8 that you believed to be the strongest study 9 is the Bolognesi study, correct? 10 A. Correct, but that does not make 11 it the major weight of my determination. 12 Q. I understand. 13 A. OK. 14 Q. And let's take a look at the 15 Bolognesi study. 16 MR. LASKER: We will mark that 17 as... 18 (Exhibit 15-40, article entitled, 19 "Biomonitoring of genotoxic risk in 20 agricultural workers from five 21 Colombian regions," marked for 22 identification, as of this date.) 23 Q. And just for the record, this is 24 the study you were talking about -- we were 25 just talking about just previously,</p>	<p style="text-align: right;">Page 360</p> <p>1 Q. The Bolognesi study on page 995, 2 the first column, about half the way down 3 that first paragraph, there is a sentence 4 that starts "Evidence indicates that the 5 genotoxic risk." 6 Do you see that? 7 A. Um-hm. 8 Q. The Bolognesi investigators 9 conclude from their study that evidence 10 indicates that the genotoxic risk 11 potentially associated with exposure to 12 glyphosate in the area where the herbicide 13 is applied for eradication of cocoa and 14 poppy is of low biological relevance. 15 Do you see that? 16 A. I see it. 17 Q. Do you agree with the Bolognesi 18 investigators' assessment, this assessment 19 of their study findings? 20 A. I don't know how they could 21 possibly come to that conclusion. So I 22 don't disagree or agree. I can't imagine 23 where they got that from this data. 24 Q. The Bolognesi investigators found 25 that there was no association between</p>
<p style="text-align: right;">Page 359</p> <p>1 correct? 2 A. Yes, I believe it was. 3 Q. The investigators in Bolognesi at 4 page 994, at the bottom of the second 5 column, state that, overall, these data 6 suggest that genotoxic damage associated 7 with glyphosate spraying as evidenced by 8 the NM test is small and appears to be 9 transient, correct? 10 MS. GREENWALD: Objection, form. 11 That wasn't read right. 12 A. Overall, these results suggest 13 that genotoxic -- I am sorry. 14 "Overall, these results suggest 15 that genotoxic damage associated with 16 glyphosate spraying as evidenced by the 17 micronucleus test is small and appears to 18 be transient" is what it says. 19 Q. Do you agree with the Bolognesi 20 investigators' assessment of their study 21 and findings? 22 A. I have to look to see the context 23 in which they're making the statement. 24 I'm not sure I agree with the 25 "small."</p>	<p style="text-align: right;">Page 361</p> <p>1 self-reported exposure to glyphosate and 2 in-transit genotoxic impacts, correct? 3 A. Not correct. 4 Q. Let's look at page 994. 5 A. They -- they ask specific 6 questions about where you were when the 7 spraying occurred. And so that's not 8 self-chosen exposure. That's self-chosen 9 where were you. 10 Q. Well, let's look actually at page 11 994 again. The second column on the right, 12 the second paragraph from the bottom, the 13 sentence starts, "There was no significant 14 association between self-reported direct 15 contact with eradication sprays" -- 16 A. Which page are we on? 17 Q. I'm sorry. Page 994. 18 A. Right hand -- 19 Q. Second column, second paragraph 20 from the bottom, it starts, "There was"? 21 A. Yes, now I see it. Sorry. I was 22 second from the top. 23 Q. The Bolognesi investigators 24 report that there was no significant 25 association between self-reported direct</p>

<p style="text-align: right;">Page 362</p> <p>1 contact with eradication sprays and 2 frequency of BNMN, correct? 3 A. That's what they write, but 4 self-reported is an incorrect description 5 of what that was. 6 Q. There was a -- on the preceding 7 page, 993, there is a table that -- table 4 8 presents their analysis for self-reported 9 exposure to the glyphosate sprays. 10 Do you see that? 11 A. That's what it says in the title, 12 but what it is is a report of where you 13 sort of -- whether you had it in the air, 14 on your skin, or you entered the spraying 15 field. 16 That's not asking someone did you 17 think you were exposed to this, which would 18 be a self-reported exposure. So not 19 exactly that. 20 Q. In your understanding, 21 Bolognesi -- the Bolognesi study did not 22 conduct an analysis that asked individuals 23 if they were exposed to the glyphosate 24 spray? 25 A. It's not here. That's clear to</p>	<p style="text-align: right;">Page 364</p> <p>1 A. That would not be correct. 2 Q. In the Narino Province, where 3 there was the highest spraying of 4 glyphosate, the findings four months after 5 the spraying was unchanged from before the 6 spraying, correct? 7 A. In the Narino Province, that is 8 correct. 9 Q. If a genotoxic effect does not 10 persist or is not present four months after 11 exposure, it's fair to say that cannot be a 12 cause of cancer, correct? 13 MS. GREENWALD: Objection, form. 14 A. Not correct. 15 Q. So is it your testimony that if 16 there is a genotoxic impact that does not 17 result in genotoxic damage four months 18 after exposure, they can still lead to that 19 can cause cancer? 20 MS. GREENWALD: Objection, form. 21 MR. LASKER: I agree with that. 22 Actually, I'm going to state that 23 again. 24 Q. If a chemical exposure does not 25 cause a genotoxic effect that persists for</p>
<p style="text-align: right;">Page 363</p> <p>1 me. 2 And my understanding of this 3 study is these are the three things they 4 used, but had they asked the question, do 5 you think you were exposed? People who ate 6 things from the field might have answered 7 yes. 8 So it's hard from this to jump to 9 self-exposure arguments. But they -- they 10 do point out that it does not seem to be 11 correlated with these things. 12 Q. And with respect to the analysis 13 of where they were located -- where the 14 individuals in this study were located, the 15 Bolognesi investigators looked at impacts 16 five days later after the alleged 17 spraying -- glyphosate spraying, and then 18 again four months later, correct? 19 A. That is correct. In certain 20 cities, not in all of them. 21 Q. And the findings with respect to 22 genotoxic impacts do not continue or are 23 not present four months after the exposure, 24 correct? 25 MS. GREENWALD: Objection, form.</p>	<p style="text-align: right;">Page 365</p> <p>1 four months, can that effect be a cause of 2 cancer? 3 A. Yes. 4 And there is a chemical that's a 5 classic example of that in humans, but I 6 don't know it off the top of my tongue. 7 It's banned. It was a drug. 8 MR. LASKER: I am maybe done. I 9 may have a chance to have him answer 10 that one question and a few more 11 things, but let's take a break and talk 12 to this guy. 13 THE VIDEOGRAPHER: The time is 14 5:29 p.m. We are off the record. 15 (Recess.) 16 THE VIDEOGRAPHER: The time is 17 5:33 p.m. We are on the record. 18 MR. LASKER: I am going to mark 19 as 15-41 the notice of deposition for 20 Dr. Portier's deposition in this case. 21 (Exhibit 15-41, notice of 22 deposition, marked for identification, 23 as of this date.) 24 BY MR. LASKER: 25 Q. And, Dr. Portier, there is</p>

1 attached to this notice a list of document
2 requests, request for production of
3 documents, and you have produced some
4 documents here today.

5 MR. LASKER: I'm going to mark
6 that. That's what this is, 15-42, as
7 the documents that we received from
8 your counsel, Robin Greenwald, in
9 response to the notice of deposition.

10 (Exhibit 15-42, letter dated
11 August 29, 2017, with attachment,
12 marked for identification, as of this
13 date.)

14 MS. GREENWALD: You didn't give
15 me a copy of that, did you?

16 No, I don't want them. That
17 would kill too many trees. No, no, no.

18 Q. First question, and you can take
19 a moment to leaf through them if you need
20 to, but am I correct in my understanding
21 what we marked as Exhibit 15-42 are the
22 documents that you have that you believe
23 were responsive to the document requests
24 which have been marked as 15-41?

25 A. If these are documents, they

1 Q. Do you have those spreadsheets in
2 your computer?

3 A. Yes, I do.

4 Q. And do you have the calculations
5 that you conducted on the data in your
6 computer?

7 A. Probably some of them. The
8 programs I use spit out an answer, I'd
9 write it down, but they weren't always
10 kept.

11 Q. So you have some data and some
12 you have and others you don't have and you
13 don't know sitting here today?

14 MS. GREENWALD: Objection, form.

15 A. I have all of the data. I can't
16 guarantee I have all the results of the
17 runs on the computer.

18 Q. OK.

19 And which programs did you use in
20 conducting your analysis?

21 A. MATLAB.

22 Q. That was for all of your
23 analyses?

24 A. No. I used a program by the
25 German Cancer Research Center on animal

1 are -- that were passed on to you, then
2 they are responsive.

3 Q. And am I correct in my
4 understanding that, at least as far as you
5 believe, you do not have any other
6 documents that are responsive to our
7 document requests?

8 MS. GREENWALD: Objection, form.

9 A. As -- I don't know what's in
10 here, what they gave you. So I can't
11 answer that question.

12 Q. We have not received any
13 electronic data reflecting any of your work
14 product in preparing your various analyses
15 of glyphosate.

16 I take it you do have that data
17 somewhere, correct?

18 MS. GREENWALD: Objection, form.

19 A. By -- I'm not sure what you
20 mean --

21 Q. You have files on your
22 computer --

23 A. The data that I used is in this
24 expert report and the data was in
25 spreadsheets.

1 bioassays, the exact test, to check it
2 against the MATLAB program for the exact
3 test. I wanted to make sure they were both
4 working right.

5 And did I use any other programs?

6 I -- I might have programmed one
7 or two things in the spreadsheet itself.

8 Q. In your invoices -- or on your
9 invoices to plaintiffs' counsel, you have
10 listed an address 4224 Midvale Avenue -- or
11 North Midvale Avenue in Seattle,
12 Washington?

13 A. Yes.

14 Q. Is that a residence that you
15 maintain in the United States?

16 A. Yes, it is.

17 Q. Dr. Portier, you had wanted to
18 make a comment about the 1995 Charles River
19 report.

20 A. That's correct.

21 Q. Just for the record, what is the
22 exhibit number? Because I don't remember
23 it.

24 A. 15-34.

25 So I have some concerns with this

<p style="text-align: right;">Page 370</p> <p>1 one being the correct historical controls. 2 First, I don't know what a CRL CD-1 13R 3 mouse is and I can't find it. So I'd have 4 to find out if that strain is relevant. 5 The 13R could indicate some sort 6 of genetic transformation or something, I 7 just don't know what it is. 8 The other problem in looking at 9 these, I realize these are fairly small 10 numbers of studies groups, and when you go 11 back to the beginning, it turns out this is 12 a companion paper to go with a different 13 paper that provides the historical control 14 database. 15 So I wouldn't use just this, I'd 16 need the companion paper that goes with it. 17 MR. LASKER: I pass the witness 18 and reserve the remaining time. 19 MS. GREENWALD: We are going to 20 go to your room. And just we need one 21 minute. 22 THE VIDEOGRAPHER: Off the record 23 at 5:38 p.m. We are off the record. 24 (Recess.) 25 THE VIDEOGRAPHER: The time is</p>	<p style="text-align: right;">Page 372</p> <p>1 tumors seen in these studies listed in his 2 report. 3 And what I mean by seen in these 4 studies is they had a positive Armitage 5 linear trend testing proportions, which is 6 the standard for how people analyze these 7 data. 8 Q. OK. Thank you. 9 In biomedical research, is it 10 generally accepted to perform sensitivity 11 analyses? 12 A. Oh, definitely. It's a -- it's a 13 common tool. The tool is used to judge how 14 sensitive your finding is to slight 15 modifications. 16 We saw a good example of that 17 with the meta analysis -- meta analyses 18 that were done for this where certain 19 studies were added in, certain studies were 20 taken out, and you look at the overall 21 effect on that and then it gives you a 22 better chance for making the correct 23 judgment about whether you believe the 24 finding you're looking at is positive or 25 negative.</p>
<p style="text-align: right;">Page 371</p> <p>1 5:53 p.m. We are on the record. 2 EXAMINATION BY 3 MS. GREENWALD: 4 Q. Good afternoon, Dr. Portier. It 5 is now my turn to ask you a couple of 6 questions and we will call it a day. 7 I want to ask you one question -- 8 just a couple of questions, the first one 9 being: IARC does not use expert summary 10 articles, is that correct? 11 A. That is correct. 12 Q. Can you tell us why? 13 A. Yes. Expert summary reports 14 sometimes cannot cover the topic 15 completely. It is always much better to go 16 to the source material and work with the 17 source material or the source report. 18 A good example of that is the 19 Greim study. If all we had used was to 20 read the Greim study to talk about the 21 carcinogenicity of the 12 studies that were 22 included in the appendix of the Greim 23 report, we would have missed a lot of 24 tumors because Greim only had roughly half 25 or even maybe less than half of the total</p>	<p style="text-align: right;">Page 373</p> <p>1 Sometimes it can make you more 2 confused but sometimes it can clarify 3 things for you. 4 In addition, any time you have 5 got something that you feel not only 6 doesn't -- not that it drives the result, 7 but that maybe shouldn't be included in the 8 evaluation, then you would do a sensitivity 9 analysis to exclude and -- you do both to 10 look and see how important that concept is, 11 and then if you find it's very important, 12 you have to decide which way was the most 13 important way to go. 14 So that's a normal technique in 15 biomedical research. 16 MS. GREENWALD: Can I have an 17 exhibit, I think we are on. 18 (Exhibit 15-43, screen shot from 19 LobbyFacts.eu, marked for 20 identification, as of this date.) 21 Q. I'm going to show you, 22 Dr. Portier, what I am marking as 23 Exhibit 15-43. 24 This is a two-page document that 25 we took off the internet today called</p>

1 "LobbyFacts.eu."

2 And if you recall earlier today,
3 Mr. Lasker asked you questions about C.
4 Portier Consultation being a registered
5 lobbyist in the European Union.

6 Do you remember those questions?

7 A. Yes, I do.

8 Q. And I believe you testified --
9 and I'm going to ask you to explain it
10 again -- why you ever -- why you ever
11 registered in the first place with the EU?

12 A. Because the staffer for the
13 commissioner of health at first thought in
14 order for us to talk to the commissioner of
15 health, we had to register as lobbyists,
16 but then after I think two days -- it
17 wasn't very long, a couple of days -- came
18 back and said, no, I got that wrong, you're
19 not representing anybody, you're
20 representing your academic background and
21 standards, and as such, it would be
22 inappropriate for you to do this. So you
23 don't have to do it.

24 Q. And what does 15-43 show?

25 A. Under the little red triangle in

1 the EDF website, marked for
2 identification, as of this date.)

3 Q. And this is a from a blog that
4 was taken off of -- actually, Reuters. Oh,
5 yeah, I'm so sorry, my eyesight is so bad,
6 forgive me. It says, "Off the EDF
7 website." It is a three-page printout from
8 the EDF website, and it is titled, "Growing
9 returns, a coalition of uncommon bedfellows
10 is bringing sustainable agriculture to
11 scale."

12 Do you see that?

13 A. Yes, I do.

14 Q. What is this article about?

15 A. I'll have to take a look at it
16 real quick here. Sorry.

17 Q. Is this a description -- let me
18 ask a different question: Is this a
19 description of work that Monsanto is
20 currently doing with the Environmental
21 Defense Fund?

22 A. Yes, it appears to be. It says,
23 "Founding members of the MRCC include
24 cargo, environmental potential, and General
25 Mills, Kellogg Company, Monsanto, PepsiCo,

1 the top half of the page, it says,
2 organization not currently on the
3 register -- registration as it was on 21
4 December 2015.

5 Q. And what do you understand that
6 to mean?

7 A. They have taken the registration
8 off the register, which they told me they
9 would do.

10 Q. That was as of the 21st of
11 December 2015, right?

12 A. That's what it looks like, yes.

13 Q. Now, Mr. Lasker also asked you
14 questions earlier about your consultation
15 with the Environmental Defense Fund,
16 correct?

17 A. That's correct.

18 Q. In fact, that was quite a bit of
19 the questions this morning, wasn't it?

20 A. The --

21 Q. Early in the morning.

22 A. A lot of them, yes.

23 MS. GREENWALD: I'm going to mark
24 15-44.

25 (Exhibit 15-44, screen shot from

1 and others.

2 Q. And it actually talks about
3 partnership between Monsanto and the
4 Environmental Defense Fund, correct, on
5 page 2?

6 A. Yes.

7 Q. And the date of this article is
8 August 31, 2016, is that correct?

9 A. Yes, it is.

10 Q. And I'm going to show you one
11 more document.

12 MS. GREENWALD: I'm marking it
13 15-45.

14 (Exhibit 15-45, document
15 entitled, "Monsanto joins Environmental
16 Defense Fund, others, in Sustainable
17 Agriculture Coalition," marked for
18 identification, as of this date.)

19 Q. It is a one page document, and it
20 is taken from the Genetic Literacy Project.
21 And it is entitled, "Monsanto joins
22 Environmental Defense Fund, others, in
23 sustainable agriculture coalition."

24 Do you see that?

25 A. Yes, I do.

<p style="text-align: right;">Page 378</p> <p>1 Q. Dated September 1, 2016?</p> <p>2 A. Yes, I do -- yes, it does.</p> <p>3 Q. What is this?</p> <p>4 A. It looks like a news article</p> <p>5 about the same Midwest Row Crop</p> <p>6 Collaborative that the other one was on but</p> <p>7 this is a news item on it.</p> <p>8 Q. It is also, again, talking about</p> <p>9 Monsanto --</p> <p>10 A. Whatever Genetic Literacy Project</p> <p>11 does.</p> <p>12 Q. Again, it's talking about</p> <p>13 Monsanto's work with the Environmental</p> <p>14 Defense Fund, is that correct?</p> <p>15 A. Yes, it is.</p> <p>16 MS. GREENWALD: OK, thank you.</p> <p>17 Q. Dr. Portier, can you pull out</p> <p>18 15-32?</p> <p>19 MR. LASKER: That's the original</p> <p>20 expert report with attachments?</p> <p>21 MS. GREENWALD: Yes.</p> <p>22 Q. If you can look at the</p> <p>23 appendices, the first appendices, it is</p> <p>24 entitled "Document 1." It is sort of</p> <p>25 towards the back?</p>	<p style="text-align: right;">Page 380</p> <p>1 information that you were providing advice</p> <p>2 to a U.S. law firm involved in glyphosate</p> <p>3 litigation?</p> <p>4 "CJP also works part time for the</p> <p>5 Environmental Defense Fund on issues not</p> <p>6 related to pesticides."</p> <p>7 Do you see that?</p> <p>8 A. Yes, that is correct.</p> <p>9 Q. Who is "CJP"?</p> <p>10 A. That is me, Christopher Jude</p> <p>11 Portier.</p> <p>12 And it refers to the initials</p> <p>13 used in the author's list at the beginning</p> <p>14 of the document, wherever that is.</p> <p>15 But if you look at the authors</p> <p>16 list in the beginning of the document, I'm</p> <p>17 listed as Christopher J. Portier and I'm</p> <p>18 the only CJP.</p> <p>19 MS. GREENWALD: Thank you,</p> <p>20 Dr. Portier. I don't have any other</p> <p>21 questions. I appreciate your patience</p> <p>22 today.</p> <p>23 MR. LASKER: I have a couple of</p> <p>24 follow-ups, but just a couple.</p> <p>25 - - - -</p>
<p style="text-align: right;">Page 379</p> <p>1 A. Yes, I see it.</p> <p>2 Q. It says, "Difference in the</p> <p>3 carcinogenic evaluation is glyphosate</p> <p>4 between the international agency for</p> <p>5 research on cancer (IARC) and the European</p> <p>6 Food Safety Authority (EFSA.)" Do you see</p> <p>7 that?</p> <p>8 A. Yes, I do.</p> <p>9 Q. What is the date of this article?</p> <p>10 A. August 2016, Volume 7, No. 8 in</p> <p>11 the Journal of Epidemiology and Community</p> <p>12 Health.</p> <p>13 Q. If you go to page 744 of that</p> <p>14 article, please.</p> <p>15 And if you look at -- there is a</p> <p>16 loke a lock with an open key, and it says,</p> <p>17 "Open access."</p> <p>18 Do you see that?</p> <p>19 A. Yes, I do.</p> <p>20 Q. If you go right above that, it</p> <p>21 says, "Competing interest."</p> <p>22 Do you see that box?</p> <p>23 A. Yes, I do.</p> <p>24 Q. Isn't it the case in this</p> <p>25 article, you and others provided</p>	<p style="text-align: right;">Page 381</p> <p>1 EXAMINATION BY</p> <p>2 MR. LASKER:</p> <p>3 Q. The Greim publication included</p> <p>4 supplemental tables with the data for all</p> <p>5 of the tumors that were analyzed in each of</p> <p>6 the animal studies -- or glyphosate cancer</p> <p>7 bioassays, correct?</p> <p>8 A. No, not correct. It contained</p> <p>9 summarized data.</p> <p>10 Q. The supplemental materials</p> <p>11 provided the data on tumor types and tumor</p> <p>12 counts that you have used in your analyses</p> <p>13 in this case, correct?</p> <p>14 A. For most of the analyses, that is</p> <p>15 correct.</p> <p>16 Q. And every finding that you report</p> <p>17 as showing significance can be obtained</p> <p>18 from the supplemental data tables that were</p> <p>19 provided with the Greim publication,</p> <p>20 correct?</p> <p>21 MS. GREENWALD: Objection, form.</p> <p>22 A. The question I was asked by</p> <p>23 counsel had to do with the use of expert</p> <p>24 summary -- expert summaries, and so while</p> <p>25 the data is there, the expert summary is</p>

1 the written words of Greim.

2 Q. That's not my question.

3 The data tables that were
4 provided with the Greim publication in the
5 supplemental materials that were publicly
6 available contains all the data that you
7 would need to generate every one of the
8 calculations in your report --

9 MS. GREENWALD: Objection, form.

10 Q. -- except for historical
11 controls?

12 MS. GREENWALD: Objection, form.

13 A. Given six months -- and I'm going
14 to have to take some minor reservations,
15 because I can't be absolutely certain, but
16 given six months and that data, I could
17 have done what I wanted -- what I did here.

18 Q. And that data became publicly
19 available because an author, a scientist at
20 Monsanto, who is a coauthor on the Greim
21 publication, and the other coauthors
22 published the Greim publication and made
23 those data tables available on the
24 internet, correct?

25 MS. GREENWALD: Objection, form.

1 A. 30 days before the IARC meeting,
2 that is correct.

3 MR. LASKER: I have no further
4 questions.

5 THE VIDEOGRAPHER: This concludes
6 today's deposition. The time is 6:06
7 p.m. We are off the record.

8
9
10 CHRISTOPHER JUDE PORTIER, Ph.D.

11
12 Subscribed and sworn to
13 before me this day
14 of MO , 2017.

1
2 CERTIFICATE
STATE OF NEW JERSEY)

3)ss:

4 COUNTY OF UNION)

5 I, MARY F. BOWMAN, a Registered
6 Professional Reporter, Certified
7 Realtime Reporter, and Notary Public
8 within and for the State of New Jersey,
do hereby certify:

9 That CHRISTOPHER JUDE PORTIER,
10 Ph.D., the witness whose deposition is
11 hereinbefore set forth, was duly sworn
12 by me and that such deposition is a
13 true record of the testimony given by
14 such witness.

15 I further certify that I am not
16 related to any of the parties to this
17 action by blood or marriage and that I
18 am in no way interested in the outcome
19 of this matter.

20 In witness whereof, I have
21 hereunto set my hand this 6th day of
22 September, 2017.

23
24 MARY F. BOWMAN, RPR, CRR

1 NAME OF CASE:

2 DATE OF DEPOSITION:

3 NAME OF WITNESS:

4 Reason Codes:

- 5 1. To clarify the record.
6 2. To conform to the facts.
7 3. To correct transcription errors.

8 Page _____ Line _____ Reason _____

9 From _____ to _____

10 Page _____ Line _____ Reason _____

11 From _____ to _____

12 Page _____ Line _____ Reason _____

13 From _____ to _____

14 Page _____ Line _____ Reason _____

15 From _____ to _____

16 Page _____ Line _____ Reason _____

17 From _____ to _____

18 Page _____ Line _____ Reason _____

19 From _____ to _____

20 Page _____ Line _____ Reason _____

21 From _____ to _____

22 Page _____ Line _____ Reason _____

23 From _____ to _____

24

A				
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