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SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF SAN FRANCISCO

DEWAYNE JOHNSON,

Plaintiff,

vs.

Case No. CGC-16-550128

MONSANTO COMPANY, et al.,

Defendants.

-----/

Proceedings held on Friday, July 13, 2018,
Volume 9, Afternoon Session, before the Honorable
Suzanne R. Bolanos, at 1:32 p.m.

REPORTED BY:

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Pages 2059 - 2171

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WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
CHRISTOPHER JUDE PORTIER		2063		

EXHIBITS ADMITTED

(None.)

1 Friday, July 13, 2018

2 1:32 p.m.

3 Volume 9

4 Afternoon Session

5 San Francisco, California

6 Department 504

7 Judge Suzanne Ramos Bolanos

8
9 PROCEEDINGS

10 13:30:35

11 THE COURT: Good afternoon. Welcome back,
12 Ladies and Gentlemen, Counsel, Dr. Portier.

13 Dr. Portier remains under oath, and Mr. Griffis,
14 you may proceed.

15 13:32:42

16 MR. GRIFFIS: Thank you, your Honor.

17 CROSS-EXAMINATION (Continued)

18 BY MR. GRIFFIS:

19 13:32:48

20 Q. Dr. Portier, at the break we were talking about
21 the line review article and the attached data tables from
22 the various regulatory studies that have been submitted
23 over the years to various agencies.

24 Now, the IARC Working Group 112 could have
25 looked at this data if they'd had the time to do so;
right?

1 A. If they'd had -- if they would have had the
2 time, yes.

3 Q. And when you dug into this data, it was after
4 IARC, right, after Working Group 112?

13:33:17 5 A. That's correct.

6 Q. And it took you somewhere around six months to
7 dig into the data the way you wanted to; right?

8 A. I'm not sure I'm totally finished looking at the
9 data.

13:33:31 10 Q. Okay.

11 A. It progresses. It's a lot of data.

12 Q. More than six months?

13 A. Yes.

14 Q. Now, yesterday you identified seven rat studies
13:33:42 15 that you considered of significant quality -- of
16 sufficient quality to evaluate in a carcinogenicity
17 review, and you showed the jury tumors that you
18 considered to be significant enough to bring to their
19 attention in six of those; right?

13:33:56 20 A. Those were all tumors that had a statistically
21 significant trend or a pairwise test.

22 Q. One or other; right?

23 A. One or the other.

24 Q. And sometimes those results were achieved by the
13:34:12 25 application of historical control data and sometimes not;

1 correct?

2 A. Correct.

3 Q. Okay. And there were also five mouse studies
4 that you considered to be of sufficient quality to
13:34:24 5 evaluate for carcinogenicity purposes; right?

6 A. That is correct.

7 Q. And between the two -- and in all five, there
8 were some tumors that you pointed out to the jury?

9 A. Correct.

13:34:34 10 Q. And the same things that we just said about the
11 rat studies are true, sometimes it was trend, sometimes
12 pairwise comparisons, and sometimes the results were
13 generated with the use of historical data and sometimes
14 not?

13:34:47 15 A. Correct. But my conclusions are drawn only on
16 the trend test.

17 Q. And there were about 30 tumors in all?

18 A. Give or take. I've never actually sat down and
19 counted them.

20 Q. All right.

21 A. Somewhere near 30.

22 Q. That's many, many more than IARC identified as
23 significant?

24 A. That's correct.

13:35:06 25 Q. We're kind of way out beyond IARC here when

1 talking about the animal carcinogenicity data?

2 A. Yes. But it's more than was seen by EPA or EFSA
3 either.

13:35:21

4 Q. You were an invited specialist on Working Group
5 112?

6 A. That is correct.

7 Q. And when you went off to France for Working
8 Group 112, you were a consultant in litigation unrelated
9 to glyphosate for a US law firm; right?

13:35:34

10 A. No.

11 Q. You had had conversations and were consulting in
12 cell phone litigation; correct?

13 A. I -- I don't know what you're asking. I had no
14 contract. I answer questions to people who call me.

13:35:51

15 Q. There were -- there was a law firm that called
16 you and asked you questions about phone litigation; is
17 that right?

18 A. There are many law firms that call me, yes.

13:36:02

19 Q. And you had spoken to them just a few months
20 before Working Group 112; right?

21 A. Well, that I don't know. I think it might
22 have -- I can certainly tell you it was two years before
23 Working Group 112, but it was very fragmented contact.

13:36:21

24 Q. The litigation -- you have a contract with them
25 now about that; right?

1 A. Yes, I do.

2 Q. You have a contract with that law firm about
3 phone litigation; is that right?

4 A. Yes, I do.

13:36:27

5 Q. And that litigation is about cell phones
6 allegedly causing cancer?

7 A. I assume so. I just advise them on the science.

13:36:44

8 Q. And the science on Plaintiff's side about which
9 you advise them is based partly on Working Group 102,
10 which you were part of, which was about radio frequency
11 and cell phones?

12 A. Not really. I mean, it's the same science.
13 Some of it's the same science. There has been new
14 science since then, but they're not asking me about 102.
15 They're asking me about specific studies and issues like
16 that.

13:37:00

17 Q. What was the conclusion of 102 about radio
18 frequency?

13:37:13

19 A. 102 was about radio frequency electric and
20 magnetic fields.

21 Q. And do they cause cancer?

22 A. They -- it was classified as a possible human
23 carcinogen.

13:37:25

24 Q. And you didn't consider your conversations with
25 that law firm to be a conflict when you went off to

1 Working Group 112; Group?

2 A. Why would it be?

3 Q. You didn't consider it to be one?

4 A. Correct. I did not consider it.

13:37:33

5 Q. Your contract that you have now about glyphosate
6 would have been a conflict had you signed it before;
7 correct?

8 A. It would have been a conflict in my mind if I'd
9 have even discussed it before.

13:37:43

10 Q. Yes, sir. You would -- it would have been
11 something you would have felt the need to disclose and
12 something that IARC would have required you to disclose;
13 right?

14 A. Correct.

13:37:50

15 Q. And you signed that contract that we've just
16 spoken about with this law firm for cell phone litigation
17 and glyphosate litigation nine days after the Working
18 Group 112 announcement was made; right?

19 A. I'd have to see the document to get the exact
20 date.

13:38:08

21 Q. Do you have -- I've given you a number of
22 binders. Would you please find the one that says that it
23 has deposition transcripts in it?

24 A. I have it.

13:38:28

25 Q. Okay. And there are tabs for the dates, and

1 find your September 5th deposition, please.

2 A. My tabs are not arranged like that. They're
3 exhibits. This is depositions and expert reports.

4 MR. WISNER: Exhibit 2212.

13:38:58

5 Q. BY MR. GRIFFIS: Exhibit 2212. Turn to page 71
6 and look at line 12, please.

7 A. Which line 12? There are four line 12s.

8 Q. Page 71 of the -- there are four pages on a
9 page.

13:39:18

10 A. Oh, you want page 71.

11 Q. Seventy-one of the deposition. Yeah.

12 Seventy-one of the deposition. It's not a tree-saving
13 document that we handed you.

14 A. Yes.

13:39:34

15 Q. Okay. So do you see that you testified that you
16 signed an engagement letter signing up as an expert
17 consultant with Plaintiff's counsel on glyphosate
18 litigation on March 29, 2015?

19 A. That's correct.

13:39:57

20 Q. And that's nine days after the Working Group 112
21 announcement was made; right?

22 A. The Working Group 112 announcement was made
23 publicly at the end of the Working Group meeting. You're
24 talking about the *Lancet* oncology publication, is that
25 correct?

1 Q. Yes.

2 A. Okay. So --

3 MR. WISNER: Objection, your Honor. Relevance.
4 This does not pertain to this case.

13:40:19 5 THE COURT: Overruled.

6 You may answer.

7 Q. BY MR. GRIFFIS: Sorry. You were in the middle
8 of an answer there.

9 A. That -- that -- they are two different things,
13:40:28 10 but this is after *The Lancet* oncology publication.

11 Q. Okay. So -- and you're right to orient me about
12 that, sir. There was -- Working Group 112 met for a
13 week, and I don't know -- how many days after that was
14 the announcement made of the results?

13:40:42 15 A. I believe they make it the same day.

16 Q. And it's a standard thing with Working Group --
17 with IARC Working Group's that they publish results in
18 *Lancet*, that's kind of a setup procedure; right?

19 A. Correct. About two weeks afterwards.

13:40:59 20 Q. Right. So about two weeks later it went out in
21 *Lancet*, and nine days after that, you signed this; right?

22 A. That's correct.

23 Q. And that's for consulting in cell phone and
24 glyphosate litigation?

13:41:09 25 A. That is correct.

1 Q. And it wasn't on Mr. Johnson in particular, it
2 was just glyphosate litigation; right?

3 A. Correct.

4 Q. And of course, it's a paid contract?

13:41:16 5 A. That is correct.

6 Q. When you signed it, you immediately got a \$5,000
7 retainer and are making \$450 an hour for your work;
8 right?

9 A. That was the agreement.

13:41:26 10 Q. Now, in 2015, you started lobbying agencies in
11 Europe, the agencies that you were talking about earlier
12 today, sir, and in the US, the EPA, in various ways
13 against their conclusions about glyphosate not being a
14 carcinogen; right?

13:41:45 15 A. That's wrong on two scales.

16 Q. Tell me what the two scales are.

17 A. First of all, I don't lobby agencies. That's --
18 that's a different thing than what I'm doing. I am
19 responding to public comments. I'm responding to
13:41:59 20 documents that they put forth.

21 The second point is: I'm not challenging the
22 glyphosate decision. I am challenging the way in which
23 they reached that decision, the science that they used
24 and the way they approached that science.

13:42:13 25 Q. So you don't mind the decisions you're

1 challenging the proceedings; is that right?

2 A. That's pretty much it, yes.

3 Q. Okay. And you -- so you were communicating with
4 government regulatory -- you don't want to say lobbying.

13:42:26 5 I understand. But you were communicating with government
6 regulatory agencies and trying to change what they were
7 doing; right?

8 A. Trying to get them to do what their guidelines
9 tell them they should do, yes.

13:42:40 10 Q. And you thought they weren't doing that, and
11 they should do it a different way? You were trying to
12 influence them?

13 A. Correct.

14 Q. Now, for a little bit of context, agencies like
13:42:50 15 EPA and ECHA and EFSA and everything -- and we're just
16 about to explain what all those are -- they don't approve
17 a product like glyphosate one time and then sit on them.
18 They do reregistration reviews; correct?

19 A. More or less.

13:43:04 20 Q. Every 10 years, every 15 years. It may vary a
21 little bit, but agencies regularly come back and
22 re-review the science and look at anything new; correct?

23 A. Correct.

24 Q. And one of the things that we saw during your
13:43:18 25 examination and in Mr. Wisner's opening statement was a

1 published version of an open letter from you and from a
2 number of other scientists; correct?

3 A. That's correct.

4 Q. That's Plaintiff's Exhibit 293.

13:43:32

5 MR. GRIFFIS: Would you put up Slide 275,
6 please? It's in evidence.

7 THE WITNESS: Let me correct that. That is not
8 the published version of the open letter.

9 Q. BY MR. GRIFFIS: Okay.

13:43:40

10 A. That's a separate document. It's a different
11 document. It's not the same.

12 Q. There was an open letter. There was a response
13 to the open letter. And then there was a published --
14 you initiated a publication. And you were the initiator
15 of that; right?

13:43:52

16 A. Correct.

17 Q. And it was continuing the dialogue?

18 A. Correct.

13:44:00

19 Q. It contained some of the contents of the open
20 letter and some responses to what you'd been told in the
21 response to the open letter; right?

22 A. Correct.

23 Q. And we'll get to all that.

24 MR. GRIFFIS: Could we have Slide 293, please?

13:44:10

25 MR. WISNER: Your Honor, I don't think I have

1 any objection to this. I don't know what's going on
2 here. But this is exactly my point: Before stuff just
3 gets thrown up to the jury, I need to see it to make sure
4 I don't have any objections. And he doesn't have to get
13:44:25 5 permission from you to do it. I just have with every
6 single document, so --

7 THE COURT: Okay. Is this the document that
8 Mr. Wisner examined Dr. Portier about?

9 MR. GRIFFIS: Yes. It's Plaintiff's
13:44:35 10 Exhibit 293, in evidence.

11 MR. WISNER: I don't think I'll object. I just
12 don't know what he's about to show them. He's just
13 throwing up slides. And so if I can get a copy of it and
14 say, "Yes, we're good," just to make sure.

13:44:49 15 THE COURT: Okay. All right. Why don't you --
16 All right. So the clerk is just reminding me it
17 was published earlier, during Mr. Wisner's examination.
18 Can you please refresh Mr. Wisner's recollection?

19 MR. GRIFFIS: Sure.

13:45:00 20 MR. WISNER: Your Honor, I don't object to
21 showing the document. That's not what I'm objecting to.
22 I don't even have an objection. These are not the
23 documents. These are created slides.

24 Sorry. Can I see the Judge?

13:45:09 25 These are created slides that I -- that I don't

1 know what they're saying. We just saw deposition
2 testimony --

3 MR. GRIFFIS: That was a mistake.

4 MR. WISNER: Okay.

13:45:18 5 MR. GRIFFIS: This is what we're putting up
6 (indicating).

7 MR. WISNER: Okay. That's fine. I don't object
8 to that. But before it gets shown, I just need to see
9 it, to make sure it's not misappropriately -- you know,
13:45:26 10 these aren't the actual documents. They're slides, and
11 there's, like, little cutouts and there's little things,
12 and there's stuff on it that's actually not in evidence.
13 So I just want to make sure -- you know, we're not doing
14 anything fast and loose here.

13:45:37 15 So I just -- that was my objection. So no
16 objection to this document.

17 THE COURT: Okay. Very good.

18 You may proceed.

19 MR. GRIFFIS: I may have been telling you the
13:45:45 20 exhibit number instead of the exhibit number. I'm sorry.
21 It's not your fault.

22 Let me -- Slide 275 is the correct slide.

23 Q. This is the article that we were shown in
24 opening and shown today during your examination, sir,
13:46:02 25 called "Differences in the carcinogenic evaluation of

1 glyphosate between the International Agency For Research
2 on Cancer, IARC, and the European Food Safety Authority,
3 EFSA"; right?

13:46:17 4 A. That is correct. It's the first page of it in a
5 blown-up dialogue.

6 Q. Yes, sir. And the -- and you talk about two
7 entities here, the European Food Safety Authority, which
8 you describe as the primary agency of the European Union
9 for risk assessments regarding food safety.

13:46:35 10 And you say that in October 2015, the European
11 Food Safety Authority, EFSA, reported on their evaluation
12 of the Renewal Assessment Report, RAR, for glyphosate
13 that was prepared by the rapporteur member states during
14 the Federal Institute For Risk Assessment, BfR; right?

13:46:56 15 A. Can I -- can I look at the document and make
16 sure this is from my document?

17 Q. Sure.

18 A. The statement's correct.

19 Q. Yes.

13:47:04 20 A. I'm just not going to own the actual -- or I
21 haven't written it unless I see it in my document.

22 Q. Well --

23 A. The statement's correct.

13:47:13 24 Q. -- it's not really important to me whether you
25 wrote those words. What I just read is a factual

1 description of European reality; right?

2 A. Correct.

3 Q. Okay.

4 A. Yes, it is.

13:47:20

5 Q. That's the important part.

6 MR. GRIFFIS: You can take the slide down.

7 Q. So let's set the stage for this, the open letter
8 and the follow-up publication that you had.

13:47:33

9 When Working Group 112 issued its report, Europe
10 was in the middle of one of these reregistration reviews
11 that we just talked about; right?

12 A. That's what I understand, yes.

13:47:50

13 Q. Okay. And the European Food Safety Authority is
14 one part of the European Union-wide regulatory authority
15 that is involved with pesticide and herbicide review.
16 The other part being ECHA; right?

17 A. Yes.

18 Q. Okay. And there's an entity over them both.
19 But those are the two primary regulatory bodies; right?

13:48:06

20 A. The European chemical agency maintains the
21 methods by which people should review chemicals -- any
22 chemical. And they have the authority to label those
23 chemicals and classify them. They give that authority to
24 EFSA for food and pesticides. And so EFSA then does
25 that.

13:48:27

1 Q. And they all work together in regulating
2 herbicides and pesticides in Europe; right?

13:48:43

3 A. They work together to evaluate the data and make
4 recommendations to the European Commission, who then does
5 their thing.

6 Q. Okay. European Commission -- we're getting
7 awfully -- more technical than strictly necessary for
8 this trial.

13:48:53

9 A. They classify themselves as science agencies,
10 not regulatory agencies.

11 Q. Yes.

12 A. So I'm trying to make that distinction.

13:49:02

13 Q. Okay. So they're science agencies, and they
14 worth on the European Commission, which follows their
15 advice or not, but makes the actual decision with legal
16 authority; right?

17 A. Correct.

13:49:12

18 Q. And then we've heard that the German regulators,
19 the BfR, were the rapporteur for this round of
20 reregistration reviews. Would you please explain what
21 that means?

13:49:29

22 A. I did earlier. They -- the industry submits a
23 document that covers new science and old science, if they
24 want to, related to the chemical they want reviewed. And
25 it's the job of the rapporteur member state to then turn

1 that information into a report.

2 In many cases, they write their own report. In
3 this case, they edited and modified the existing report.

4 Q. Okay. Each time there's a reregistration
13:49:46 5 review, someone is selected -- or it happens in rotation.
6 And this will be Germany, not England anymore, France,
7 Belgium, et cetera. Someone will be selected to do a lot
8 of the legwork and then report to the agencies.

9 The agencies have a confabulation about the data
13:50:07 10 and just make decisions and make scientific evaluations.
11 And both report up to the European Commission. That's
12 the process; right?

13 A. That's a lot of process you put onto that one
14 statement.

13:50:17 15 Q. Yes.

16 A. The rapporteur's job: Draw the draft, write up
17 the draft that is in -- considered by EFSA. And when you
18 say it's considered by EFSA, it's not the people at EFSA.
19 It's the committee that EFSA brings together from all the
13:50:36 20 member states that considers it. Then goes back and
21 forth until they're happy with it.

22 Q. So there's not some pan- -- European panel of
23 scientists making decisions for all of Europe. The
24 various regulatory agencies of the countries, which
13:50:50 25 continue to exist, creates this panel. And they -- they

1 review the data; right?

2 A. Correct.

3 Q. Okay.

4 A. They choose who goes to the meetings.

13:50:58 5 Q. Right.

6 Now, this published letter -- the differences
7 letter that we just looked at that was published -- that
8 started out as a couple of emails from you; right?

9 A. The open letter started out as a couple of
10 emails.

13:51:16

11 Q. Okay. The open letter morphed into this
12 published document; right?

13 A. Getting a response and turning into a published
14 document with less and more detail, depending on what you
15 look at.

13:51:27

16 Q. Okay. Anyway, the open letter started out as
17 two emails?

18 A. I -- I would have to look at the records.

19 Q. Sure. I'll show them to you in a moment.

13:51:38 20 A. They started out as a blitz of emails.

21 Q. You sent an email on November 9th. And you can
22 take a look in your Trial Cross Binder Number 2, Tab
23 2404, sir.

24 A. 240 what?

13:52:02 25 Q. Four.

1 It's an email from you on November 9th, 2015;
2 right?

3 A. There are emails before this.

4 Q. Okay.

13:52:34 5 A. But, yes, this is my email.

6 Q. Okay. And I'm just going to read the first
7 paragraph. And read along to make sure I get it right,
8 sir.

9 "Dear all" -- and this is addressed to a number
13:52:44 10 of your Working Group colleagues; right?

11 A. Yes.

12 Q. Okay. "Dear all, this week the European Food
13 Safety Agency, EFSA, will release their reassessment of
14 glyphosate. In this review, they will conclude that
15 glyphosate has no carcinogenic potential. This creates
16 two problems, as I see it. The first is that this
17 weakens the strength of the IARC Monograph program to
18 stimulate change in how some of these agents are reviewed
19 and addressed. The second is that it suggests that we
13:53:02 20 did not do our assessment adequately and that had we seen
21 all of the data they saw, we would have gotten a
22 different answer. I do not intend to let this happen."

23 That's what you wrote?

24 A. That's what I wrote.

13:53:34 25 Q. Okay. Now, sir, you viewed the European

1 regulators' eminent conclusion that glyphosate has no
2 carcinogenic potential to be a threat to the IARC
3 Monograph program; right?

4 A. I'm sorry, could you say that again?

13:53:50

5 Q. Yes, sir.

6 You viewed the European regulator, EFSA's,
7 eminent conclusion that glyphosate has no carcinogenic
8 potential to be a threat to the Monograph program -- the
9 IARC Monograph program?

13:54:06

10 A. I viewed their appendix that they did, which
11 compared the IARC review with their review, to be a
12 threat to good science, that IARC was leading on how to
13 evaluate agents for carcinogenicity.

13:54:28

14 Now, if that's not what it says here, then that
15 is what I meant for it to say. Because that was the
16 major concern. BfR had written an appendix and gone
17 through and said, "Here's what we did. Here's what they
18 did." And it was simply wrong.

13:54:45

19 Q. And they did that because your findings made a
20 splash, and they were pointing out to whoever was paying
21 attention to them how, in their view, their analysis
22 differed from yours and justifying whatever conclusions
23 differed from yours; is that right?

13:54:58

24 A. Correct. And they were doing that without
25 having allowed the Working Group to comment on their

1 document. Hence, the only way for the Working Group to
2 respond was in a public forum since that was the only
3 forum available to them.

13:55:16 4 Q. You have nominated yourself to be a director of
5 IARC, the director of IARC?

6 A. For the recent consideration of a new director,
7 yes, I did.

8 Q. And when will that be decided?

9 A. It's been decided.

13:55:29 10 Q. Are you?

11 A. No.

12 Q. Okay. The next communication, the next email
13 I'd like to call your attention to, sir, is Defense
14 Exhibit 2403 in that same binder. And that's an email
13:55:58 15 from you to about 500 scientists asking them to join in
16 on your open letter; right?

17 A. I'm sorry, which one did you say?

18 Q. 2403.

19 A. And this is in the same binder?

13:56:22 20 Q. Apparently not. You sent such a letter, right,
21 sent such an email?

22 A. I have a 2404, but no 2403.

23 Q. That's okay, sir. I don't need to put it up.

24 You can recall sending a letter to about 500
13:56:38 25 scientists asking them to join in on your open letter;

1 right?

2 A. I don't know that it was 500, but it was way
3 more than a hundred.

4 Q. It was in that ballpark?

13:56:49 5 A. 500? I don't know, quite honestly.

6 Q. Okay. Fair enough.

7 And ultimately 96 people signed on to the open
8 letter; right?

9 A. That is correct.

13:56:59 10 Q. And those are the same -- well, including you,
11 although it was actually 94 when it was published, but
12 anyway, we're close.

13 It's the same people that were ultimately on the
14 publication, with maybe a couple people dropping off?

13:57:13 15 A. I think the 94 refers to the number of
16 organizations that these people belonged to, but I think
17 it was 96 people.

18 Q. Okay, 96 people, 94 organizations?

19 A. Yeah.

13:57:24 20 Q. All right. And in your email to the scientists,
21 you didn't tell them that you'd been hired by plaintiff's
22 lawyers in litigation; right?

23 A. That I was consulting with a law firm who was in
24 litigation. No, I did not tell them that in that letter.

13:57:43 25 Q. In that email?

1 A. In that email.

2 Q. Now, you don't consider the open letter or the
3 differences publications that we have seen up on the
4 screen to be a peer review by external scientists of
13:58:01 5 IARC's work; right?

6 A. That's a -- it's an interesting question. To
7 some degree, it is because it's comparing the IARC
8 Monograph to the -- to the EFSA report, but then some of
9 the authors were part of the writing group for the IARC
13:58:25 10 Monograph. So -- and you don't peer review your own
11 work.

12 So it's a mixture in that. They're -- they're
13 just documents.

14 Q. You certainly don't think they went through the
13:58:37 15 IARC review process and looked at all those documents and
16 did the sort of analysis and conversations that you did
17 at Working Group 112?

18 A. But that's not how peer review works in any
19 situation. If I submit a paper for publication, the peer
13:58:54 20 reviewers don't go and drag up every one of my references
21 and read the reference and compare it against my paper.

22 Q. The letter -- the email -- I keep saying
23 "letter," I'm sorry.

24 The email to the approximately 500 scientists
13:59:08 25 was November 11th and the open letter was November 27th?

1 A. Something along those lines. I thought it was
2 longer than that. It was a tremendous amount of effort.

3 Q. You don't know how much of any evidence the various
4 people who signed on looked at before agreeing to sign
13:59:25 5 on; right?

6 A. I can certainly vouch for some of them having
7 looked at a lot of the evidence because they kept
8 changing the document. Others didn't make any comments.

9 Q. A lot of people just signed on and some people
13:59:40 10 were more interested in making edits?

11 A. I -- it's -- I can't comment on how much each of
12 the individual scientists read on the background
13 documents that were sent.

14 Q. Now, your open letter describes all of you as
13:59:53 15 independent scientists in the first line, and you're the
16 first signatory and the person to get in touch with if
17 anyone has a question; right?

18 Look at 2735 in the binder if you need to take a
19 look, sir.

14:00:07 20 MR. WISNER: Objection. Compound. There's four
21 questions in there.

22 THE COURT: Can you please break that down,
23 Mr. Griffis, one question at a time.

24 MR. GRIFFIS: Go to 2735 first, sir.

14:00:29 25 THE WITNESS: Yes. That is the letter.

1 Q. BY MR. GRIFFIS: Okay. And the first line says,
2 "We are a group of independent academic and governmental
3 scientists"; right?

4 A. That's what it says.

14:00:43

5 Q. And if you turn to the signature page, page 8,
6 signed sincerely, Professor Christopher J. Portier,
7 corresponding author; right?

8 A. Yes.

14:01:10

9 Q. And corresponding author is the person you get
10 in touch with if you have a question?

11 A. That is correct.

12 Q. Okay. And that letter doesn't disclose that
13 you, the corresponding author, was a paid consultant in
14 litigation against glyphosate at the time; right?

14:01:22

15 A. No, it does not. But, of course, it does say
16 the views expressed in this letter are the opinions of
17 the scientists who are listed below and do not imply any
18 endorsement or support for these opinions by any
19 organization to which they are affiliated.

14:01:39

20 It is clearly describing it as our independent
21 opinions regardless of who pays our salary.

22 Q. Now, EFSA responded to your open letter with its
23 own open letter; correct?

24 A. Correct. That was appropriate.

14:01:52

25 Q. Okay. And this was the -- earlier you said you

1 were kind of forced into this public forum to engage with
2 them. But forced or not, that's the forum in which you
3 had this scientific exchange about your opinions about
4 how glyphosate should be evaluated; right?

14:02:13

5 A. And about some of the things that they did, yes.
6 But to be clear, the letter went to Mr. Andriukaitis, who
7 also -- who responded and asked EFSA to respond directly
8 to me.

14:02:25

9 Q. So you were writing down -- sorry, you were
10 writing to the European Commission?

11 A. Correct. Well, to Mr. Andriukaitis --

12 Q. The President of the European Commission?

13 A. No. The Commissioner for Health and Food
14 Safety.

14:02:34

15 Q. The responsible executive at the European
16 Commission who said please respond to Dr. Portier --

17 A. Correct.

18 Q. -- and EFSA did so?

14:02:45

19 So the communications were coming back to you
20 from EFSA; right?

21 A. Correct.

22 Q. Okay. And turn to 2747, please.

23 A. Okay.

14:03:21

24 Q. Are you there? 2747 is the letter that was sent
25 to you from EFSA; correct?

1 A. Correct.

2 MR. GRIFFIS: I move the admission of 2747, your
3 Honor.

4 MR. WISNER: Objection.

14:03:28 5 THE COURT: Any objection?

6 MR. WISNER: Yeah. Objection, hearsay.

7 THE COURT: Okay, approach.

8 (Sidebar.)

9 [REDACTED]

14:03:56 10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

14:04:12 15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

14:04:32 20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED]

14:04:50 25 [REDACTED]

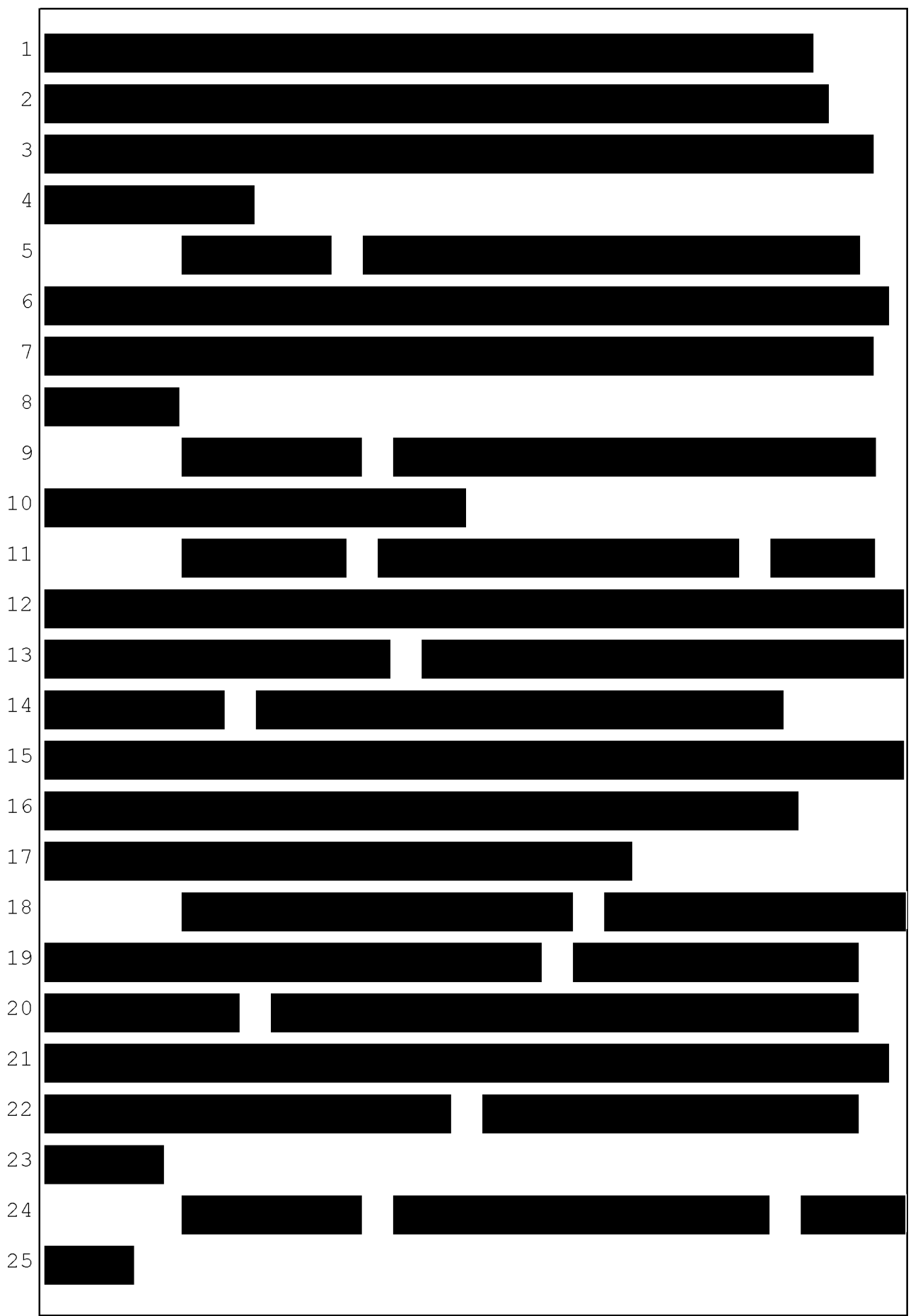
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[REDACTED]

(End sidebar.)
THE COURT: You may continue.

Q. BY MR. GRIFFIS: Okay. Sir, we are on 2747, sir, and this is the open -- this is the response to the open letter that you received from EFSA; correct?

A. Correct.

Q. Okay. And take a look at the bottom of the first page, please, where they're talking about the IARC assessment as a possible first step in a full assessment. You were told, sir, by EFSA that in their view, IARC violations can represent a first step in --

MR. WISNER: I don't see where you're reading.

Q. BY MR. GRIFFIS: Okay. I'm sorry. At the bottom of the first page.

1 A. Sorry, I've got the annex here. Okay. Here.

2 Q. The bottom of the first page under the header,
3 IARC assessment is a possible first step in a full
4 assessment.

14:08:13

5 Are you there?

6 A. I don't see those words exactly.

7 Q. There's a header that says that.

8 A. IARC assessment is a possible -- okay, you're
9 looking at the header.

14:08:25

10 Q. Yes, sir. Now I'm looking at the paragraph
11 under the header.

12 As the WHO, the World Health Organization states
13 on its website in the preamble to the IARC Monograph. So
14 they're talking about the preamble to the Monograph which
15 we discussed earlier; right?

14:08:39

16 A. Yes.

17 Q. Okay. As the WHO states in the preamble: "IARC
18 evaluations can represent a first step in carcinogen risk
19 assessments to be considered if available by national and
20 national authorities such as EFSA when carrying out their
21 own assessments. I agree that IARC carries out an
22 important role in the treating assessment of the
23 carcinogenic potential of agents. However, we should not
24 compare this first screening assessment with a more
25 comprehensive hazard assessment done by authorities such

14:08:55

14:09:12

1 as EFSA, which are designed to support the regulatory
2 process for pesticides in close cooperation with the
3 member states in the EU."

4 Did I get that right?

14:09:25

5 A. You read it right. I don't agree with it.

6 Q. On the next page, sir, the second paragraph
7 begins: "EFSA's assessment of glyphosate is an essential
8 part of the EU regulatory system in relation to
9 pesticides, widely regarded as one of the strictest in
10 the world."

14:09:48

11 Do you disagree with that?

12 A. I don't know if it's widely regarded as one of
13 the strictest in the world. I know from my evaluation of
14 what they did for glyphosate, I don't regard them as
15 strict, and that's certainly true of my 95 other
16 co-authors.

14:10:05

17 Q. You know what they think. You need that that's
18 what they think?

19 A. We wrote a letter after we got this response.

14:10:23

20 Q. Turn to page 6 the appendix, please, or the
21 annex.

22 And take a look at the headings first to get
23 oriented, sir. This is about evidence from animal
24 carcinogenicity studies and statistical assessments --

14:10:46

25 A. Uh-huh.

1 Q. -- of that; right?

2 A. Uh-huh.

3 Q. Which was a lot of your testimony with the mouse
4 studies and the rat studies and the tumors; right?

14:10:54

5 A. Well, other things as well, but that was some of
6 it.

7 Q. EFSA is of the opinion that the planning of a
8 study before the initiation of the experimentation as
9 established in the respective protocol, which includes
10 the planned statistical analysis, is a key element in
11 assessing the quality of the study. Therefore,
12 deviations from the statistical analysis used by the
13 study authors should be limited and properly justified;
14 correct?

14:11:09

15 A. That's what it says.

14:11:23

16 Q. And they say this is in line with OECD
17 recommendations.

18 Would you tell the jury in a sentence or two, if
19 you can, what OECD recommendations are.

14:11:35

20 A. OECD is the Organization of Economic and
21 Cooperative Development. It is an organization that many
22 nations join to try to make things like pesticide review
23 and pesticide evaluation kind of standard.

24 Q. So they're quoting OECD. The OECD has

14:12:05

25 recommendations for many, many, many things. That's just

1 one of them that you just told us; right?

2 A. Yes.

3 Q. Okay. And they're quoting OECD recommendations,
4 and I'm going to look at the second sentence there
14:12:17 5 starting "therefore."

6 "Therefore, the statistical methods most
7 appropriate for the analysis of the data collected should
8 be established at the time of designing the experiment
9 and before the study starts."

14:12:28 10 Right?

11 A. That's what it says.

12 Q. Now the original authors --

13 A. It goes on to say something else. Can I read a
14 little further?

14:12:37 15 Q. Yes.

16 A. Okay. It goes on to say -- where did you stop?
17 I'm sorry.

18 Q. I stopped with the italics.

19 A. You didn't take it all the way to the bottom;
20 right?

21 "Therefore, statistical methods most appropriate
22 for the analysis of the data collected should be
23 established at the time of designing the experiment and
24 before the study starts."

14:13:05 25 So the problem here is, the word says the -- the

1 most appropriate method of analysis. So they're assuming
2 that just because they got an analysis and it was the
3 planned analysis, it's the most appropriate analysis.

4 My argument with them and why they didn't answer
14:13:20 5 it is that the analysis that was done was not the most
6 appropriate analysis.

7 Q. Yes, sir. You disagree with the OECD guidelines
8 on that.

9 A. The OECD guidelines that are being quoted here I
14:13:32 10 do not disagree with, but they clearly say the most
11 appropriate must be established at the start of the
12 study. And if they don't use the most appropriate, then
13 that should be questioned, and that's my questioning
14 here.

14:13:44 15 Q. Okay. It's true that the original authors of
16 each of the seven rat and five mouse studies that you
17 told the jury about did not conclude applying the
18 statistical methods that they had decided on before the
19 study started, that any of those tumors were compound
14:14:02 20 related; correct?

21 A. I can't say that. I don't have the full study
22 reports. Their conclusions would be in the study
23 reports. All I have is their data and EFSA's reiteration
24 or EPA's reiteration of what they think. But I don't
14:14:17 25 know what the original authors thought.

1 Q. Okay. Let's go to the last paragraph of that
2 section, sir. We're still on the statistical assessment
3 section.

14:14:34 4 "As indicated in the open letter and some
5 studies, the same data are statistically significant or
6 not, depending on the selected statistical method."

7 And you agree with that, sir; right?

8 A. Yes, I agree with that.

14:14:51 9 Q. And they say: "It should also be noted that
10 there are no valid studies with statistically significant
11 effects confirmed by both statistical approaches."

12 Correct?

13 A. That is not correct.

14 Q. What is the exception?

14:15:05 15 A. I'd have to go to my notes, the thing we put up
16 yesterday. There are several that both have a fissure
17 exact test, pairwise wise test being significant and the
18 trend being significant.

14:15:18 19 Q. Okay. Are those -- you later in this process,
20 in your exchange of communications with the European
21 regulators, told them about eight additional tumors that
22 you believe you'd identified in some of these studies;
23 correct?

14:15:35 24 A. And in fact, they missed around 15, EFSA. Even
25 after I gave them the eight, I found out I was wrong and

1 there were more, through someone else's analysis.

2 Q. And they say that they -- based on these
3 results, the biological relevance of the results, see
4 below, was balanced against the inconsistency observed in
14:15:53 5 the statistical results; correct?

6 A. Yet their guidelines specifically say that if
7 you see a positive result in a trend or a pairwise
8 comparison positive result, it should be considered
9 positive.

14:16:05 10 So by arguing that they're inconsistent, they're
11 arguing that they have to have both, and that is in
12 direct violation of their own guidelines.

13 Q. You testified earlier today that EPA was so
14 amazingly wrong in its evaluation of glyphosate and the
14:16:23 15 conclusions that it came to.

16 A. The eventual conclusion that there's no -- I
17 forget their category -- no evidence supporting
18 carcinogenicity or something along those lines.

19 Q. Yes.

14:16:37 20 A. I find that conclusion astonishing.

21 Q. Do you also find EFSA's conclusion astonishing
22 and so amazingly wrong?

23 A. Yes, I do. By their own guideline, they --

24 Q. Sorry.

14:16:54 25 A. Let's -- we can take a simple example. Their

1 guidelines clearly state that if you see two positive
2 animal bioassays, it should be classified as 1B.
3 That's -- that's all that's required for their 1B
4 classification by their own guidelines.

14:17:12

5 And I've demonstrated over and over again that
6 there are much more than two positive findings in these
7 data. Hence, they have not followed their guidelines,
8 and so I do disagree with them.

9 Q. They do know what their guidelines are; right?

14:17:25

10 MR. WISNER: Objection. Speculation.

11 THE WITNESS: I know what their guidelines are.
12 So do they.

13 THE COURT: Overruled.

14:17:40

14 Q. BY MR. GRIFFIS: On page 9, sir. On page 9 --
15 are you there?

16 A. Yes, I am.

14:17:52

17 Q. On page 9 we're in the middle of them addressing
18 various specific tumors that you told them existed in
19 these studies. They talked about renal tumors reported
20 in mice on page 8, hemangiosarcomas reported in mice on
21 page 9, and then malignant lymphomas reported in mice on
22 page 9. And they go on, and I won't read them all.

23 That's what's happening on these pages; right?

14:18:14

24 A. These are not tumors I told them about; these
25 are tumors they told me about. And I was commenting on

1 each of their evaluations for each of these tumors.

2 Q. Okay. Let's go back to the header section.

3 Additional considerations of the tumors reported
4 in the IARC Monograph, and underneath they say for the
14:18:36 5 assessment of tumors in mice, IARC and EFSA considered
6 two and five studies respectively; right?

7 A. That is correct.

8 Q. IARC considered two. Are those the two studies
9 we looked at earlier, the Atkinson study, and they each
14:18:49 10 reported one statistically significant and it wasn't
11 lymphoma; right?

12 A. That's correct. Neither were malignant
13 lymphoma. But let's make this clear what actually
14 happened. IARC reviewed, and in the IARC review, they
14:19:07 15 used the trend test to find the significance they were
16 talking about. Regardless whether you like the P value
17 or not, that's what they used.

18 In response, BfR went back, and for some of the
19 tumors they had in mice, including the two observed by
14:19:26 20 IARC, they went and tested all the other studies of the
21 same animal type to see if they saw the same tumors. And
22 when they did that, they found multiple tumors which were
23 part of this discussion.

24 So they found things after the IARC review
14:19:44 25 because they didn't apply the most appropriate method,

1 but only to a select number of tumors.

2 Q. They found additional tumors and concluded,
3 based on their complete review, not just of that issue,
4 that glyphosate was not carcinogenic in humans; correct?

14:20:02 5 A. That's correct.

6 Q. Okay. Under "Conclusion," and this is the
7 conclusion of the animal section, sir, on page 10.

8 Are you with me?

9 A. Yes, I am.

14:20:27 10 Q. End of that paragraph, the conclusion paragraph:
11 "In fact, the statistical trend without assessing the
12 biological relevance of the result seems to be the only
13 justification in the IARC Monograph for deviating from
14 the previous evaluation of the same animal studies by the
14:20:46 15 WHO/FAO JMPR expert group, which concluded that
16 glyphosate does not have carcinogenic potential."

17 Correct?

18 A. That's what it says. I still disagree with it.

19 They -- they wave a flag of biological evaluation, and
14:21:07 20 yet not once in this document or any of their documents
21 do they explain what they mean by a biologically credible
22 finding in anything.

23 Q. What is the WHO/FAO JMPR expert group, please?

24 A. That's the World Health Organization, Food and
14:21:30 25 Agriculture Organization. Both are UN organizations.

1 This is a committee that sits within WHO but is jointly
2 run by both that reviews pesticide residues in food and
3 makes recommendations for pesticide residue in food,
4 levels that are considered safe and to be used in
14:21:56 5 commerce really across nations.

6 Q. The JMPR is a World Health Organization UN
7 agency in the same sort of way that IARC is; right?

8 A. No. JMPR is a subcommittee. It's just a --
9 it's a small group of four people who run a committee
14:22:15 10 that brings people in from the outside to make decisions.

11 Q. That expert group that operates under the
12 auspices of the World Health Organization disagrees with
13 IARC?

14 A. No, they do not.

14:22:26 15 Q. They concluded that glyphosate does not have
16 carcinogenic potential; right?

17 A. You have to go further. You have to read their
18 entire statement. It goes beyond that. It says in --
19 from exposures in residues in food. So they're talking
14:22:48 20 about a very, very specific narrow bit of this.

21 Q. Okay. I have two questions for you, sir, about
22 that. First of all, they look at the epidemiology
23 evidence and the animal studies and the mechanistic
24 evidence, the three pillars that you talked about today,
14:23:07 25 right, and yesterday?

1 A. That is correct.

2 Q. Okay. And my second question is: Do you agree
3 with them about food?

14:23:25

4 A. You know, I haven't done a risk calculation for
5 the level of exposure that comes from food. So I
6 can't -- I don't disagree or agree with them. I haven't
7 done the calculation.

14:23:36

8 Q. Okay. It may well be that they're right that
9 glyphosate does not have carcinogenic potential as far as
10 food exposure risk?

11 A. I want you to read the exact conclusion they had
12 so that I'm not misstating it and you're not misstating
13 it. Do we have a copy of that?

14:23:50

14 Q. I'll try to get it for you a little later. I
15 don't have it right in front of me.

16 A. Then I won't agree or disagree until I hear the
17 exact statement so it's clear.

18 Q. Yes, sir.

14:23:59

19 Without seeing that, you don't know whether you
20 agree or disagree, based on the evidence that you've
21 reviewed, that glyphosate has carcinogenic potential for
22 humans through food exposure?

23 A. I haven't looked at all of the literature on how
24 much glyphosate is in food.

14:24:13

25 Q. Okay.

1 A. That was not the focus of what I was doing.

2 Q. Yes, sir. So you can't say. You would want to
3 do something than you have done so far?

14:24:25

4 A. I would have to do a lot of work to agree with
5 them. Let's put it that way.

6 Q. Based on what you've reviewed, you don't
7 disagree with me right now?

8 A. Again, I want to see the full statement.

9 Q. Okay. You're not agreeing or disagreeing?

14:24:38

10 A. Correct.

11 Q. Okay, let's look at the summary paragraph and
12 then we'll move on from this document, sir. Page 12.

13 Do you see where I am? Summary. I'm looking at
14 the second paragraph.

14:24:55

15 A. Okay.

16 Q. "As reported in the EFSA conclusion, EFSA
17 2015 A" -- and this is the one that you were upset about
18 in the first place when you wrote your open letter;
19 right?

14:25:07

20 A. The appendix mostly, but yes.

21 Q. "As reported in the EFSA conclusion, there is
22 very limited evidence for an association between
23 glyphosate-based formulation and non-Hodgkin's lymphoma
24 and overall evidence is inconclusive for a causal or
14:25:26 25 otherwise convincing associative relationship between

1 glyphosate and cancer in human studies. There is no
2 evidence of carcinogenicity in either rats or mice due to
3 a lack of statistical significant in pairwise comparison
4 tests. Lack of consistency in multiple animal studies
14:25:45 5 and slightly increased incidences only at dose levels at
6 or above the limit dose/MTD, maximum tolerated dose, lack
7 of pre-neoplastic lesions and/or being within historical
8 control range."

9 "The statistical significance found in trend
14:26:05 10 analysis in non pairwise comparison per se was balanced
11 against the former considerations. Considering a weight
12 of evidence approach, taking into account the quality and
13 reliability of all available data, it is concluded that
14 glyphosate is unlikely to be genotoxic *in vivo* and does
14:26:22 15 not require a hazard classification regarding
16 mutagenicity according to the CLP regulation."

17 Did I read that correctly?

18 A. You read that correctly.

19 Q. And is that so amazingly wrong?

14:26:37 20 A. Yes, it is on a number of different scales.

21 Shall I go through it with you?

22 First of all, there is no such category in the
23 CLP in their guidance document called "very limited
24 evidence in humans." So which is it? Is it limited
14:26:54 25 evidence or is it inadequate evidence?

1 They've -- they've twisted their guidelines so
2 that they've created a new category that nobody really
3 knows what it means.

4 And then as far as their five reasons, every
14:27:08 5 single one of them is pretty much not recommended, I mean
6 discouraged in their guidelines, and that's in my expert
7 report. I've walked through all of that.

8 I'm more than happy to go and look at it and
9 bring it up to you, but this is -- their five or six
14:27:29 10 reasons are exactly the reasons we're concerned about
11 what they're doing scientifically.

12 Q. You find EPA's assessment of glyphosate to be so
13 amazingly wrong and EFSA and BfR; is that right?

14 A. Well, there's no difference between EFSA and
14:27:56 15 BfR. It's the same document.

16 Q. BfR did a renewal assessment report?

17 A. Correct.

18 Q. We haven't looked at that yet; right?

19 A. Well, the comments we made to EFSA were on the
14:28:12 20 renewal assessment report and its addendums.

21 Q. And you told us earlier that when the rapporteur
22 issues a report like the renewal assessment report, EFSA
23 does its own independent evaluation of that; correct? It
24 doesn't just say, okay, this is our conclusion now and
14:28:31 25 cut and paste it?

1 A. EFSA characterizes the peer review. I
2 characterize it as an interagency, intergovernmental
3 committee of people appointed to make comments on the
4 document. But that's what they do.

14:28:51

5 Q. Okay.

6 A. They're not really independent people because
7 most of them are somehow associated with the governments
8 that they come from, and it's all one general network.

14:29:08

9 Q. Okay. In May 28th, 2017, you wrote another open
10 letter to the President of the European Commission, a new
11 president now, President Juncker?

12 A. Correct.

14:29:26

13 Q. About the review of carcinogenicity of
14 glyphosate. Now it was about EFSA and BfR and ECHA as
15 well; right?

16 A. Do you have the document?

17 Q. I do. It is tab 3172.

18 A. Yes.

14:29:46

19 Q. Yes, you're there, or yes, what I said is
20 correct?

21 A. Yes, I am there. And yes, what you said is
22 correct.

14:29:59

23 Q. And you critiqued their review of glyphosate and
24 told them they were getting it wrong as you had done
25 about previous reviews in previous letters; right?

1 A. I briefly summarized the contents from the
2 previous letter because I told the President I didn't
3 want to waste his time. And the purpose of this was
4 really to talk about the tumors that they had missed that
14:30:18 5 were known then that were not in their risk assessment
6 and yet should have at least been mentioned.

7 Q. You got a response from BfR and EFSA and ECHA;
8 correct?

9 A. It was a combined response from all three of
14:30:37 10 them in one letter.

11 Q. Yes, sir. One response from all three. That's
12 on 3173.

13 A. This is not all of it. I got a much more
14 detailed letter than this. Oh, 3178 is the letter I got
14:31:11 15 from EFSA, which was combined with BfR and ECHA, but the
16 letter itself came from EFSA.

17 Q. And there's an annex to that?

18 A. Yes. It's the letter, and then the annex -- the
19 annex gives the details.

14:31:35 20 Q. The annex gives detail about the scientific
21 analysis about which they're disputing with you?

22 A. It talks about the tumors I raised concerns
23 about.

24 Q. And the date here is 05 "lug" 2017, and I've
14:31:51 25 been informed that that stands for *lugio*, which is

1 Italian for July. Am I remotely right?

2 A. That's my understanding as well.

3 Q. Okay. So July 5th, 2017.

4 In the reply is it says that both ECHA and EFSA
14:32:12 5 processes were referred to in your letter. I'm in the
6 first paragraph. And in response to a request from the
7 European Commission, this reply has been jointly prepared
8 by the two agencies. And then they say that the German
9 authority, BfR, also has contributed to the response;
14:32:33 10 right?

11 A. It says the response was prepared jointly by
12 EFSA and ECHA and that BfR played an important role in
13 the glyphosate evaluation, and it has contributed to this
14 response.

14:32:56 15 Q. Okay. So it's kind of from all three of them?

16 A. It's from the two of them, I suspect. They
17 controlled it and they might have taken some of BFR's
18 comments.

19 Q. On page 1, the third paragraph: "In your letter
14:33:11 20 you express the view that both EFSA and ECHA, E-C-H-A,
21 failed to identify all statistically significant cancer
22 findings in the chronic rodent carcinogenicity studies
23 with glyphosate. To support this argument you refer to a
24 reanalysis of eight specific tumor incidences reported in
14:33:29 25 the original study reports from seven animal

1 carcinogenicity studies."

2 Am I right so far?

3 A. That's what it says.

4 Q. All right.

14:33:36

5 "Having carefully assessed the reasoning behind

6 the arguments you make, EFSA and ECHA confirm that the

7 original assessments considered all relevant findings.

8 Our detailed technical assessment you will find in the

9 annex to this letter. We consider that none of the

14:33:51

10 specific findings you bring forward are relevant for the

11 hazard and risk assessment of glyphosate. In our view,

12 the results of any statistical analysis and its related

13 uncertainties have to be weighted for their biological

14 relevance to arrive at a comprehensive toxicological

14:34:09

15 evaluation of the substance at hand."

16 Do you disagree with that?

17 A. That's what they wrote.

18 Q. Okay.

19 A. And I don't disagree with it, but they have yet

14:34:17

20 to show me what they mean by biological relevance that is

21 not there for the tumors that I've been arguing with them

22 about.

23 Q. You believe that ECHA, along with EFSA and BfR,

24 are completely wrong about this and not following their

14:34:38

25 own procedures; is that right?

1 A. Absolutely.

2 Q. And you've said earlier that you found the
3 EFSA's position to be astonishing or was it EFSA or was
4 it EPA that you said that about?

14:34:53

5 A. Both of their conclusions that there's no data
6 to support carcinogenicity I find astonishing, especially
7 EFSA, where they say the human evidence is limited. When
8 I've asked in public what very limited means, they said,
9 well, it's limited.

14:35:13

10 So I find it difficult to understand how when
11 they say the human evidence is limited, meaning there is
12 an association, their definition is in here. Can we read
13 their definition of what "limited" means?

14 Q. Yes, certainly.

14:35:27

15 A. That was in that first letter.

16 Q. When you find it, tell me where to look.

17 A. It's EFSA's response to my -- the open letter.
18 Does anyone know which tab it is? I think it's here.
19 Tab number 2747.

14:36:21

20 Yes, here it is. On page 2 at the bottom of
21 page 2. Their definition of limited evidence of
22 carcinogenicity in humans.

23 "A positive association has been observed
24 between exposure to the agent and cancer for which a
25 causal interpretation is considered to be credible, but

14:36:38

1 chance, bias, or confounding could not be ruled out with
2 reasonable confidence."

3 If that doesn't sound familiar to you, that is
4 the exact wording used by IARC. They are identically the
14:36:54 5 same.

6 So my concern, on simpler -- simplest grounds,
7 they found there is an association. Causality is
8 reasonable, but it's not quite there, and yet they
9 conclude that there's no evidence of carcinogenicity.

14:37:12 10 That to me is an astonishing finding. Totally
11 illogical.

12 Q. Yes, sir. You're telling the jury that they
13 have exactly the same standard, same definition of
14 limited evidence of carcinogenicity and the other
14:37:28 15 criteria as well; right?

16 A. Correct.

17 Q. As IARC, and when they looked at the evidence
18 that they reviewed with regard to glyphosate, they
19 reached a very different conclusion?

14:37:38 20 A. No. They called it very limited, and when asked
21 in public what that means, the answer I've gotten has
22 always been limited evidence.

23 Q. Let me try again. They have the same standards
24 with regard to -- as IARC to -- sufficient evidence of
14:37:55 25 carcinogenicity in limited evidence of carcinogenicity,

1 and their overall conclusion about whether glyphosate is
2 a human carcinogen is very different than IARC's?

3 A. No. But their conclusion about the human
4 epidemiology evidence is very limited. And so when
14:38:16 5 asked -- because that's not a category -- they call it
6 limited.

7 So they're saying the epidemiology evidence,
8 there is an association, but in their conclusion, they're
9 saying there is no evidence of carcinogenicity.

10 Those do not agree because if you have an
11 association, there is evidence. So if nothing else, they
12 should have put it into the inadequate category and not
13 in the no evidence category.

14 Q. Will you turn to regulatory binder 1. It's a
14:38:47 15 different binder than the one that's open in front of you
16 now, sir.

17 A. Certainly. Volume 1.

18 Q. Yes, sir. Go to 2323, please, and tell us what
19 that is?

14:39:40 20 A. This is -- I'm sorry, this is EFSA's formal
21 announcement of the conclusion of their peer review for
22 glyphosate. It was published in the EFSA journal in --
23 well, 2015. January 2015.

24 Q. And this is what you were upset about in the
14:40:01 25 open letter. It's what you referenced in the open

1 letter; correct?

2 A. No, the open letter was in November. It was --

3 Q. The first one, I meant.

4 A. Yeah, the first open letter was before this
14:40:15 5 final conclusion. This final conclusion came out after
6 the open letter, but I got them confused here. This
7 can't possibly be January -- this is not January 2015.
8 This is toward the end of 2015.

9 It's not this. This carries over a summary of
14:40:40 10 some of the information in the renewal assessment report.

11 Q. Take a look at 2320. See if that's it.

12 A. This is the EFSA committee opinion.

13 Q. Okay. And this is something that you critiqued
14 in the second open letter; right?

14:41:16 15 A. To some degree, yes, but mostly to the fact that
16 they also missed the same tumors.

17 Q. And in your correspondence with the European
18 authorities, you've been critiquing 2320, 2323, 2071, and
19 probably a bunch of other regulatory statements and
14:41:48 20 pronouncements that we don't have in this binder; right?

21 A. I did not critique 2071. That's their
22 classification and labeling guidelines. This is the one
23 for glyphosate specifically.

24 Q. Yes, sir.

14:42:03 25 A. Yeah, there are aspects of this that are again

1 scientifically unsupported.

2 Q. Okay. Let's take a look at 2320, sir. Would
3 you identify this for the jury?

4 A. The title is "The Opinion of the Committee For
14:42:35 5 Risk Assessment on a Dossier Proposing Harmonized
6 Classification and Labelling at EU Level," and then the
7 chemical name is glyphosate, iso, semicolon, then other
8 names for glyphosate. Chemicals have multiple names that
9 mean the same thing.

14:43:08 10 Q. And what is the RAC, the Risk Assessment
11 Committee?

12 A. It's a committee set up by ECHA. I don't quite
13 understand how it's set up and how the membership is
14 organized. It's multiple people in multiple disciplines
14:43:30 15 who review chemical listings and other things for the
16 European Commission.

17 They consist of, I think, maybe 25 people, but I
18 can't be certain, with expertise in a variety of
19 different areas. As far as I know, there's only one
14:43:53 20 epidemiologist or two on that committee.

21 So because they have to have engineers and they
22 have to have agricultural experts and exposure experts
23 and toxicologists and all kinds of people.

24 Q. Would you take a look at page 26 of
14:44:11 25 Exhibit 2320, sir, which is the European chemicals agency

1 RAC report you were just describing.

2 A. Page 26 of 2320. Okay.

3 Q. Yes, that's right.

14:44:31 4 And if you flip back for a moment to 25, do you
5 see that this is a section called "Comparison With the
6 IARC Evaluation."

7 Correct?

8 A. Correct.

14:44:43 9 Q. And let's stay there a moment. The first thing
10 that ECHA reports is: "The IARC report is based on
11 publicly available studies and does not consider data
12 from unpublished reports, whereas the CLH report and the
13 RAC opinion are based on both unpublished reports and
14 publicly available studies, resulting in a much broader
14:45:03 15 data set for *in vivo* genotoxicity studies."

16 "In contrast to the RAC opinion, the IARC report
17 includes studies in non-mammalian animal species."

18 First of all, did I read that right?

19 A. You did read that correctly.

14:45:17 20 Q. Is it correct that the Working Group 112 report
21 is based on publicly available studies and doesn't
22 consider data from unpublished reports?

23 A. That is kind of correct. The Working Group did
24 work with one of the review papers on the Ames test,
14:45:41 25 which is a genotoxicity -- a mutation test done in

1 salmonella, which is a microbe, and concluded that it was
2 completely negative based upon all of that. And that
3 summary was from the non-published data. But other than
4 that, no, they didn't do much.

14:46:04

5 Q. The Ames test -- you just mentioned the Ames
6 test, and would you explain to the jury in less than
7 three minutes --

8 A. I'm sorry.

9 Q. -- what that -- no, you've been doing fine.

14:46:20

10 Just is it possible to explain the Ames test at greater
11 length than that.

12 A. It's easy to explain.

13 Q. And why it has been so important historically in
14 cancer risk assessment?

14:46:29

15 A. I can tell you some of that.

16 Q. Okay.

17 A. The Ames test, you take salmonella and put it in
18 a plate. It's a special type of salmonella that doesn't
19 grow because it has a mutation that stops it from growing
20 out in colonies. Then if you hit it with a chemical, you
21 can -- if the chemical is genotoxic, it can reverse that
22 mutation, take it out.

14:46:44

23 And so the salmonella then grows into colonies,
24 and you can count the number of colonies that you get,
25 and that tells you how genotoxic that dose of the

14:47:01

1 chemical is. So that's the simple aspect.

2 The test came out in the 19 -- I'm forgetting
3 things -- was long time ago, 1980s, I believe. Early
4 1980s. And it's a very good test for a quick run of
5 genotoxicity.

14:47:25

6 In regulatory areas they've used it, and I'm
7 going to say incorrectly, but we have a long scientific
8 debate on that, to decide whether or not a chemical
9 should have a threshold, which means there's a dose
10 beyond which -- below which there's no risk whatsoever
11 versus not having a threshold. It goes all the way down.

14:47:42

12 Was that fast enough?

13 Q. Great. Thank you.

14 And the EPA and other regulators require the
15 submission of certain tests when you want an herbicide or
16 pesticide or a whole lot of other chemicals to be
17 approved for sale. We talked about animal
18 carcinogenicity testing. Ames tests are another category
19 of tests they require; right?

14:47:56

20 A. I'm not sure that's still true, but certainly in
21 the past, it would have been true that they required
22 Ames.

14:48:12

23 Q. Including the recent past?

24 A. I don't -- I don't really know.

14:48:21

25 Q. Okay. There are a number of other --

1 A. There's a lot of discussion about getting rid of
2 it because there were better assays.

3 Q. Okay. But if you want to market a herbicide and
4 you want to go to the EPA with it, you don't just say,
14:48:36 5 I've found some genotoxicity tests and I've decided to
6 test crocodile cells in this petri dish and --

7 A. To be fair to IARC, that -- those other species
8 were not used in the evaluation. I made that clear.

9 Q. I didn't mean to impugn anyone's integrity by
14:48:53 10 mentioning crocodiles. I'm just saying you can't just do
11 whatever tests you want. You have to submit a certain
12 battery of tests, and those tests are specified by the
13 regulators; right?

14 A. Although most regulatory agencies will also
14:49:08 15 negotiate with you. But basically that's true.

16 Q. I'm basically right. Okay.

17 So back to page 25, where we're doing the
18 comparison with the IARC evaluation. On page 26, they
19 talk about studies in exposed humans; right? Do you see
14:49:25 20 the bold header?

21 A. Yes.

22 Q. You talked today about three studies in exposed
23 humans, Paz-y-Miño 2007, Paz-y-Miño 2011, and Bolognesi
24 2009, and these three are also discussed here; right?

14:49:46 25 A. Well, they're -- there is a quick summary note

1 here, but yes. They're not discussed.

2 Q. Okay. That's what they're talking about, those
3 three studies. They're named and identified there;
4 right?

14:50:00

5 A. Correct.

14:50:14

6 Q. And then the next sentence where they have the
7 little evaluation, they say: "RAC, Risk Assessment
8 Committee, notes that the results from the human
9 genotoxicity studies are equivocal and that their overall
10 interpretation is challenging due to the time between
11 spraying and blood sampling from two weeks to two months,
12 uncertain exposure estimates, and the combined exposures
13 to glyphosate and co-formulas and other pesticides. RAC
14 concludes that the data available is not sufficient to
15 conclude glyphosate as the factor likely to explain to
16 association between glyphosate-based" --

14:50:36

17 "RAC concludes that the data available is not
18 sufficient to conclude that glyphosate is the factor
19 likely to explain the association between
20 glyphosate-based herbicides and higher incidences of
21 micro nuclei in the studies where this has been
22 observed."

14:50:55

23 Did I read that right?

24 A. That's what it says.

14:51:11

25 Q. Is that something that you vigorously disagree

1 with as well?

2 A. Well, they have a mistake. I mean, one of them
3 was five days, not two weeks. And to some degree what
4 they've said is true of some of the studies and not true
14:51:24 5 of others. Some of them are much clearer in terms of
6 what they tell you.

7 Q. Some of those three?

8 A. Some of the three. Some parts of those three.
9 Because there's lots of evaluations going on in those
14:51:36 10 three papers.

11 Q. Okay. Let's look at the overall RAC conclusion
12 and then we'll move on from this paper, sir. It's on
13 page 52. Tell me when you're there.

14 A. I am there.

14:51:53 15 Q. Okay. "RAC concludes that based on the
16 epidemiological data as well as the long-term studies in
17 rats and mice, taking a weight of evidence approach, no
18 classification for carcinogenicity is warranted."

19 A. That's what it says.

14:52:08 20 Q. Okay. And is that also astonishingly incorrect
21 and so amazingly wrong?

22 A. It's -- you've asked a simple question for a
23 complicated issue. They're welcome to have their
24 opinion. This is at least an opinion that says -- it
14:52:29 25 doesn't say there's evidence suggesting lack of

1 carcinogenicity, which is what EFSA said. This at least
2 says we don't see it fitting our criteria for listing.

14:52:46 3 Now, I disagree with that because I see other
4 things in the science that would put it into a different
5 listing.

6 So I don't disagree with their conclusion based
7 upon what they did to the data. I disagree with what
8 they did to the data, which should have put it in a
9 different category.

14:52:59 10 Q. Is what they did to the data astonishing and so
11 amazingly wrong or is it less outrageous --

12 A. Again, they did the same things EFSA did with
13 the exception of one thing: They didn't throw away
14 positive findings because they were in the range of
14:53:13 15 historical controls. They finally learned that lesson
16 and stopped doing that. But the other errors they
17 continued in the same way as EFSA.

18 MR. GRIFFIS: Move the admission of 2320, the
19 RAC report, from ECHA.

14:53:32 20 THE COURT: Any objection?

21 MR. WISNER: Yes, your Honor. Objection,
22 hearsay.

23 THE COURT: Okay. Why don't we take this up at
24 a break. And is this actually a good time to take the
14:53:41 25 afternoon recess?

1 MR. GRIFFIS: Yes, your Honor.

2 THE COURT: Okay. All right. So Ladies and
3 Gentlemen, we'll be in recess for 15 minutes until ten
4 after 3:00 on the wall clock. Please remember, do not
5 discuss the case.

14:53:53

6 (Sidebar.)

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

14:55:27

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

14:55:52

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

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14:57:00

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15:12:54

15:13:30

[REDACTED]

(End sidebar.)

(Recess.)

THE COURT: Welcome back, Ladies and Gentlemen.
Dr. Portier remains under oath. And, Mr. Griffis, you
may continue when you're ready.

MR. GRIFFIS: Thank you, your Honor.

Q. BY MR. GRIFFIS: Dr. Portier, I just want to
look at one more document. Then we'll move off of the
European regulators for a bit. That is Exhibit 3173.

Tell me when you're there.

A. I'm a bit clumsy. I'm sorry.

3173?

1 Q. 3173, yes.

2 A. Yes, I'm there.

15:13:46

3 Q. So this is a document from the BfR, the German
4 regulators, and the title is "Glyphosate: EFSA and ECHA
5 Response to Christopher Portier," and it's a three-page
6 description of their response to you; correct?

7 A. It's a web page they put up.

8 Q. And it's summarizing their July 2017 response to
9 one of your open letters; right?

15:14:03

10 A. Their summary of their response, yes.

15:14:23

11 Q. They say halfway through the first paragraph,
12 "Christopher Portier, a consultant to a non-governmental
13 organization, wrote an open letter to the commission
14 president in May 2017 in which he said the tumors found
15 in feeding studies with mice and rats had allegedly not
16 been taken into consideration in the drafting of the
17 European risk assessment."

18 Is that right?

19 A. That's what it says.

15:14:35

20 Q. And --

21 MR. WISNER: Your Honor, could we have a short
22 sidebar. I just have to clarify something with counsel.

23 THE COURT: Yes.

24 (Sidebar.)

15:15:02

25 [REDACTED]

15:15:16

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

15:15:28

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15:15:39

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

15:15:50

20 [REDACTED]

21 [REDACTED]

22

(End sidebar.)

23

THE COURT: All right. You may continue.

24

MR. GRIFFIS: Thank you, your Honor.

15:16:09

25

Q. BY MR. GRIFFIS: Okay. I asked you if their

1 characterization of what had happened was correct and I
2 think you answered me, but I don't remember what you
3 said.

4 A. I didn't answer you.

15:16:23 5 Q. Okay.

6 A. I was a government bureaucrat for many years, as
7 well as a scientist, but I was also a government
8 bureaucrat. And I love it when they're very clever in
9 their writing. They say all the original studies

15:16:38 10 mentioned have been taken into account. That is correct.

11 That is not what I was challenging them on. I was
12 challenging them on specific tumors in those studies that
13 they had not mentioned. So this is the case where if you
14 can't say what you got to say, you say something else
15 that sounds similar.

15:16:54

16 Q. Okay. I think, though, you jumped a little
17 ahead. Let me read that paragraph you're objecting to
18 first and then we'll talk about it. Okay?

19 "EFSA and ECHA, EFSA and ECHA, clearly state
15:17:07 20 that the claim that findings were overlooked is false
21 based on the transparent assessment procedure of European
22 hazard and risk assessment, as well as the available
23 scientific facts. All the original studies mentioned
24 have been taken into account in the evaluations of the
15:17:24 25 European authorities in accordance with their reliability

1 and relevance and have been assessed on the basis of
2 agreed scientific principles."

3 Did I read that right?

4 A. You did.

15:17:34

5 Q. And do you believe that that is a false
6 statement?

7 A. No. That's a correct statement. It just is not
8 a statement regarding what I actually challenged them on.

15:17:47

9 Q. Okay. Let's go down. There are several
10 paragraphs that are kind of in a shaded gray text box.
11 Let's move below that to the white text.

15:18:04

12 "All the original studies on the toxicity of
13 glyphosate cited by Christopher Portier in his letter to
14 the president of the EU commission have been taken into
15 account in the evaluation of the European authority in
16 accordance with their scientific reliability and
17 relevance and have been assessed on the basis of agreed
18 scientific principles. This means that individual data
19 on the specified tumor types and incidences that have now
20 been additionally analyze by Christopher Portier using
21 his own method were already known."

15:18:19

22 And I'm going to pause. They mentioned
23 individual data on the specified tumor types. And they
24 would have had animal level data from those studies that
25 you didn't in doing their evaluation; is that right, sir?

15:18:35

1 A. They had -- it was available to them.

2 Q. Okay. And animal level data means the data on
3 each individual animal, its feeding schedule --

4 A. I assume. I can't -- I can't say.

15:18:51 5 Q. That would be normal?

6 A. That would be normal.

7 Q. So I'll continue reading.

8 "Following" --

9 MR. WISNER: Objection. I believe we had a
10 hearing about this issue and I don't believe the next
11 sentence or the portions thereafter are admissible.

12 THE COURT: Can you approach, please.

13 (Sidebar.)

14 [REDACTED]

15:19:29 15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

15:19:48 20 [REDACTED]

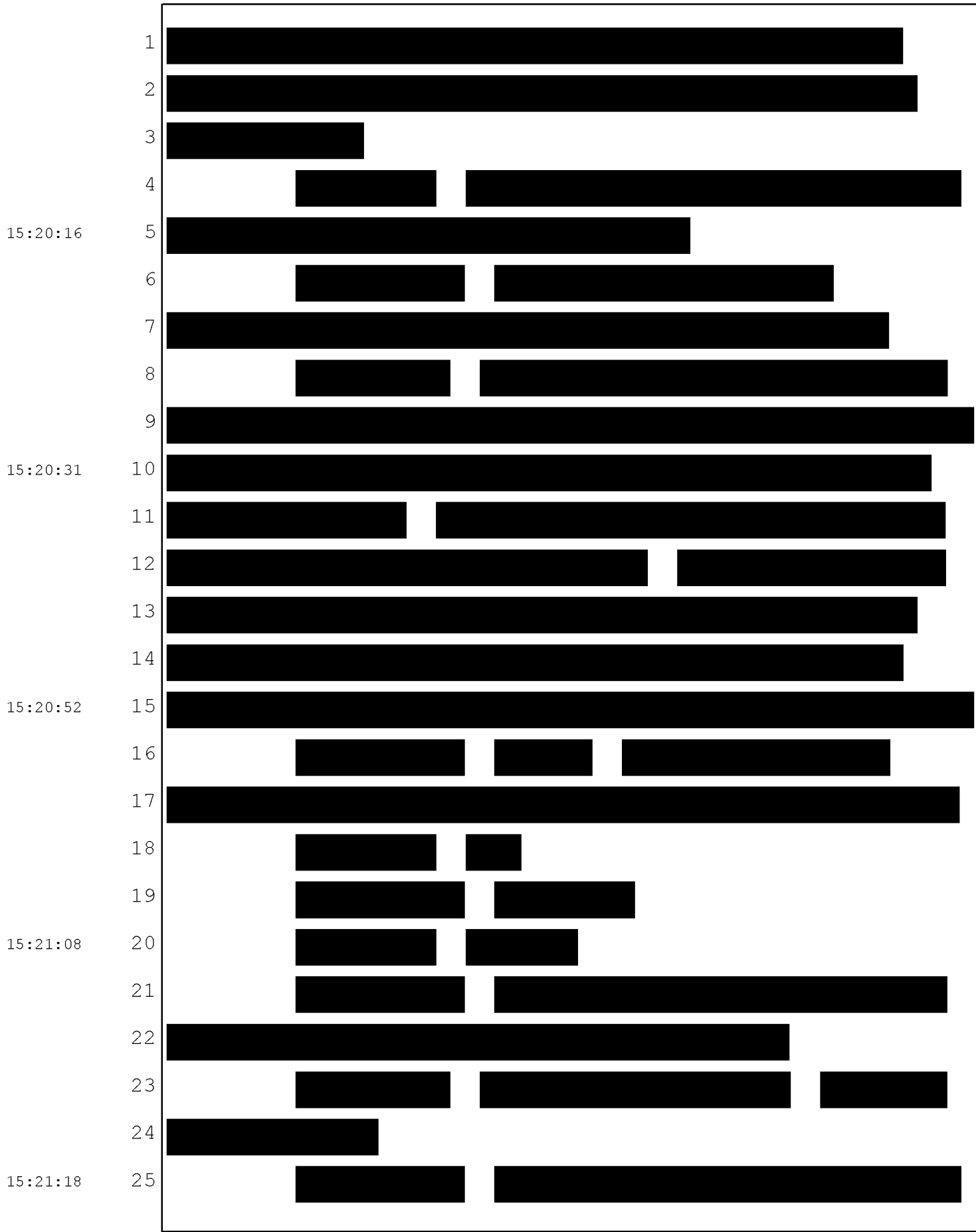
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11 [REDACTED]

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12 [REDACTED] [REDACTED]

13 [REDACTED] [REDACTED]

14 [REDACTED] [REDACTED]

15 [REDACTED] [REDACTED]

15:22:26

16 [REDACTED]

17 [REDACTED]

18 [REDACTED] [REDACTED]

19 (End sidebar.)

20 THE COURT: All right. You may proceed.

21 Q. BY MR. GRIFFIS: On the page 2 of 3, sir, at the

22 top -- are you there?

23 A. Yes, I am.

15:22:45

24 Q. Okay. All of the tumor incidences described by

25 Christopher Portier as new -- new in quotes -- can also

1 be found in the original studies of the manufacturers;
2 right?

3 A. I don't exactly know what they mean by that
4 statement. That's, of course, where I got the tumor
15:22:57 5 counts from. So of course those tumor counts are in the
6 -- in the appendices of those reports, but I don't have
7 access to those reports themselves. So I don't know if
8 they were in the actual report.

9 Q. Okay. I'm about to transition here, but let's
15:23:20 10 wrap that up. Yes?

11 A. I want to say -- so they make a statement here,
12 all of the tumor incidences described by myself as new
13 can also be found in the original studies of the
14 manufacturers. If you look at the report -- the response
15:23:47 15 that BfR sent me, which is 3178, the next tab, I'd like
16 to read just one of their responses to give you an idea
17 of what they mean when they say that.

18 Q. Okay.

19 A. So on page 6, his response B, and it has to do
15:24:06 20 with my identifying hemangiomas in females only in
21 Sugimoto FML, which is a CD-1 mice study. I will first
22 note that EPA used this tumor, they evaluated it,
23 discussed it in their risk assessment. So it wasn't new
24 if EFSA had read what EPA did. So here's their response.

15:24:34 25 "The study author did not report the sum of

1 hemangiomas total for all tissues, but the incidents in
2 individual tissues."

3 Now, hemangioma is a tissue of the circulatory
4 system, the lining of blood vessels, effectively. And so
15:24:54 5 it can occur anywhere. Typically when you have those,
6 you combine them from all over the animal and just go,
7 did this animal have a hemangioma or not? That's the
8 usual way of analyzing that type of systemic tumor.

9 "This benign vascular neoplasm" -- this is going
15:25:11 10 back to them -- "was found in females at different sites.
11 For example, in the spleen, one in the mid dose, in the
12 uterus, one at the mid dose, two at the high dose, et
13 cetera."

14 They give several others. I'm not going to go
15:25:27 15 through them all.

16 "No statistical significance was observed for
17 any of these to cite. Even if these findings are summed
18 up, an increased incidence in relation to controls was
19 observed only at the high dose levels of 4,116 milligrams
15:25:44 20 per kilogram body weight per day."

21 So what that says is we didn't see this tumor,
22 we didn't analyze this. Then they go on:

23 "As explained in the weight of evidence
24 assessment, an increased incidence of benign tumors
15:26:02 25 observed only at the extremely high dose exceeding 4,000

1 milligrams per kilogram body weight per day, well above
2 the MTD, is less relevant for classification even if they
3 are not automatically excluded from any consideration."

4 Now, mind you, if we were to take the time to go
15:26:24 5 back and read EFSA's review of this paper, they would not
6 say the MTD was exceeded. But now in their response
7 they're hinting at maybe the MTD is exceeded.

8 Finally, in the next sentence: "It is important
9 to note that no progression to malignant hemangiosarcoma
15:26:44 10 was observed."

11 Now, to my understanding, hemangioma does not
12 progress to a hemangiosarcoma. Hemangiosarcoma is a
13 separate type of tumor arising independently. So now
14 they're using their biological relevance, but they're
15:27:01 15 connecting the wrong tumors. And it goes on and on like
16 this in every one of their responses.

17 So that is where my frustration lies in the
18 sense that I'm getting a disconnect between what they
19 write in the summary and what they actually write to me.

15:27:17 20 Q. Do you see, sir, on page 9 under the heading
21 "Were the findings missed in the CLH process?"

22 A. I do see that.

23 Q. And we're in Exhibit 3178.

24 A. Yes, I see it.

15:27:33 25 Q. Four paragraphs down.

1 To save a little bit of time, I'm going to start
2 in the middle of the paragraph.

3 "Although the data referred to by Dr.
4 Portier" -- do you see that?

15:27:49

5 A. Yes.

15:28:02

6 Q. Fourth paragraph, halfway: "Although the data
7 referred to by Dr. Portier in Table 1 of this document
8 were not included in the CLH report, hence explained in
9 detail under the heading biological relevance of the
10 claimed additional tumor studies and significant
11 increases due to glyphosate exposure above, this does not
12 mean that they were not considered by the DS in their
13 assessment. Only the tumor types which the dossier
14 submitter considered to have required further assessment
15 were included in the CLH report. These comprised the
16 four tumor types in rats and three tumor types in mice
17 listed above."

15:28:26

18 Did I read that right?

15:28:42

19 A. You read that right. What it says is that, gee,
20 we might have seen this tumor increase, but we didn't
21 include it in our report because we didn't think it was
22 important to tell you about it.

15:28:59

23 And that -- that's an interesting approach to
24 transparency. But more importantly they state, and I'll
25 repeat it: "Only those tumor types which the dossier

1 submitter considered to have required further assessment
2 were included in the CLH report."

3 That basically says since the dossier was
4 submitted by the glyphosate task force, they only
15:29:17 5 considered the tumors that the glyphosate task force
6 considered to be important. That's the way I interpret
7 that sentence.

8 Q. Would you do this for me, sir. Why don't you
9 list for me, to the best of your memory, all of those
15:29:34 10 regulatory findings after IARC, because you weren't very
11 focused on glyphosate or possibly at all focused on
12 glyphosate before that, after Working Group 112, you
13 read, reviewed and had disagreement with -- we've talked
14 about a number of them, but could you just list them --

15:29:56 15 A. We -- I'm sorry.

16 Q. Sorry.

17 A. Go ahead. I interrupted you.

18 Q. You said we've discussed everything?

19 A. We discussed EFSA, BfR, ECHA and EPA. I did
15:30:12 20 look at the California EPA one and that's it.

21 Q. And in your expert report you listed JMPR as
22 something that you relied on?

23 A. Yes, I did look at JMPR as well.

24 Q. I'm going to ask for you to talk about specific
15:30:30 25 documents, but we need to have a sidebar, your Honor.

1 THE COURT: Yes.

2 (Sidebar.)

3 [REDACTED]

4 [REDACTED]

15:30:52

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

15:31:02

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 (End sidebar.)

15:31:19

15 Q. BY MR. GRIFFIS: The JMPR is what?

16 A. Joint Meeting on Pesticide Residues of the World
17 Health Organization and the Food and Agricultural
18 Organization.

15:31:45

19 Q. And which findings by the JMPR did you review
20 and dispute?

21 A. I did not write to them and dispute any.

22 Q. Okay. Did you -- which did you review and, in
23 your mind, disagree with?

24 A. I would have to see the document to remind me.

15:31:58

25 Q. Okay. Can you tell me for EFSA or BfR or ECHA

1 or EPA?

2 A. What parts, like --

3 Q. Which documents, which -- which findings by
4 those agencies you reviewed and disputed.

15:32:18

5 A. I reviewed every single finding by the agencies
6 relating to carcinogenesis.

7 Q. So from March 2015 to now, for EFSA and BfR and
8 ECHA and EPA and JMPR, you reviewed all findings that
9 they've made on the subject of carcinogenesis?

15:32:40

10 A. Not as much JPR as the others.

11 Q. So you were somewhat less focused on them?

12 A. Somewhat less focused on them.

13 Q. And as to all of those agencies and their
14 findings on cancer, do you find them to be astonishing
15 and beyond the pale and you can't believe it and those
16 other things that you've been saying today?

15:32:58

17 A. I find the science by which they reached their
18 decision to be in error, and I would be happy to walk you
19 through each and every one of those if you'd like.

15:33:15

20 Q. Those in the room would not be so happy, sir.

21 A. Probably not, but I can list them simply for you
22 and quickly.

23 Q. Have you not done so yet?

24 A. It's in the letters.

15:33:28

25 Q. It's in the letters; right?

1 A. Yeah, in so many of the letters.

2 Q. All right. I want to talk about the animal
3 study analyses that you did, sir.

4 A. Okay.

15:33:40

5 Q. And first I want to try to, if we can, get some
6 statistical principles straight so that the jury can
7 follow. And so I'm going to try to talk and see if we
8 can reach agreement about this.

15:34:00

9 First of all, an animal carcinogenicity study
10 involves dosing a large number of animals, 50 males, 50
11 females in each dosing group, and we discussed how the
12 doses are set elsewhere in your testimony, and then
13 analyzing them for just about every tumor that can be
14 found in a mouse or rat; right?

15:34:25

15 A. No. So you have an animal cancer study.

16 Q. Yes.

15:34:42

17 A. And they look at, in general, body tissues and
18 they take slices of those body tissues, and they look for
19 tumors in each of those tissues. And some tissues can
20 have multiple types of tumors. But to analyze, they only
21 analyze things that are either, one, an observation of a
22 tumor, which is very rare, or, two, things that can
23 conceivably be statistically positive. And so that means
24 it has to have at least three tumors occurring in any
15:35:06 25 groups in the animal study.

1 Q. Okay. And because I've read your expert
2 reports, I know why you're saying all that. I think
3 you're getting slightly more advanced than I am at the
4 moment.

15:35:18

5 But to start out with, when you do an animal
6 carcinogenicity study, you're analyzing about 40 tissues
7 for multiple tumors; right?

8 A. The pathologist is reading 40 tissues for
9 multiple tumors, right.

15:35:34

10 Q. I don't mean you. One is doing that.

11 A. As a statistician, I would never analyze that.

12 Q. I'm sorry. I didn't mean you personally.

13 So when people are doing these animal studies,
14 there are many dozens of possible kinds of tumors that
15 could be found, right?

15:35:51

16 A. Correct.

17 Q. Okay. And moving away from animal studies to a
18 slightly higher realm of generalization, when you're
19 doing any experiment in which there are multiple tests
20 and a possibility of finding -- of a particular
21 statistical finding in a particular tumor type is a test;
22 right?

15:36:08

23 A. Correct.

24 Q. Okay. So multiple tests -- and that applies to
25 animal studies as well as other things -- if you have

15:36:20

1 enough tests, you are going to get a number of positives
2 by chance alone; right?

3 A. That's not guaranteed.

4 Q. Okay.

15:36:32 5 A. You could get some positives by chance alone.

6 Q. Okay. If you have enough, you're almost
7 guaranteed, but --

8 A. Correct.

9 Q. Okay. And the level of the degree to which you
15:36:44 10 would be guaranteed would approach 100 percent so closely
11 that you wouldn't notice the difference --

12 A. Correct.

13 Q. -- at some point? Okay.

14 And at one point when you were going through
15:37:00 15 your initial analyses for your expert report, you decided
16 that there were -- how many tests did you decide? 465
17 tests at issue in these animal studies?

18 A. No. I used an algorithm put forth by Joe
19 Haseman that led to that calculation.

15:37:20 20 Q. Okay. So Joe Haseman is a biostatistician as
21 well and was engaged in a conversation with you about
22 these animal studies and these results. Has an algorithm
23 and you decided to apply that. And the purpose of this
24 is to kind of get a denominator of how many different
15:37:40 25 boxes you could find a statistically significant or

1 otherwise statistically interesting result in; right?

2 A. That is correct.

3 MR. WISNER: Objection. Compound. There were
4 five parts to that question. I want the make sure his
15:37:53 5 answer is to each part.

6 THE COURT: All right. Please rephrase, Mr.
7 Griffis.

8 Q. BY MR. GRIFFIS: Okay. You chose a test by Dr.
9 Haseman?

15:38:05 10 A. Okay. I chose a calculation by Dr. Haseman to
11 give me the number of tests.

12 Q. Okay. And the reason that you wanted the number
13 of tests is to have a sort of denominator to compare to
14 the number of positives that were found; right?

15:38:22 15 A. That is why he was doing it. That is correct.

16 Q. And it's not just something that Dr. Haseman is
17 interested in. Any statistician who is assessing a
18 series of results that involves multiple testing and a
19 whole bunch of possible tests needs to take that into
15:38:41 20 account; right?

21 A. They would look at that question and take it
22 into account.

23 Q. And the reason you look at that is because --
24 okay, let's back up for a moment and talk about

15:38:53 25 confidence intervals and p value. A p value of less than

1 0.5 corresponds to a 95 percent confidence interval
2 corresponds to a 1 in 20 chance, generally speaking;
3 right?

15:39:08 4 A. Except in the epidemiology confidence intervals
5 are two-sided. In a -- testing in animal studies,
6 they're one-sided. Slight difference, but let's just
7 call it a 1 in 20 chance.

8 Q. Okay. One in 20 chance. And what that means --
9 we're still at the level of abstraction, I understand.
15:39:24 10 What that means is that if you are looking for a
11 95 percent confidence interval in your study, about one
12 out of every 20 times that you do a test, you're going to
13 get a positive just by chance; correct?

14 A. No. What it means is that if truth is there is
15:39:44 15 absolutely no effect in these -- in these animals of this
16 chemical, then, roughly, because it's -- it gets
17 complicated for small and large backgrounds, roughly
18 speaking, then 1 in 20 times you would actually get a
19 false positive finding.

15:40:05 20 Q. So if you were testing spring water in mice and
21 rats about, 1 out of every 20 tests you'd get a false
22 positive; right?

23 A. You might get a false -- you might get a
24 positive in 1 out of 20. It's a statistical probability.
15:40:23 25 It's not a guarantee.

1 Q. Yes, sir. It's not every 1, 2, 3, 4, 5, 6 and
2 then when you get to 20 you get a positive. There's a
3 chance each time. But on average it works out to about 1
4 in 20; right?

15:40:37 5 A. On average.

6 Q. There are tools that you apply to calculate the
7 number that are expected, and it's not take the number
8 and divide it by 20. It's a little more complicated than
9 that. But these are formulas well-known by

15:40:51 10 statisticians; right?

11 A. Correct.

12 Q. Okay. And the denominator that you started
13 with, the number of tests in these studies, and it's a
14 complicated issue, but you chose Dr. Haseman's
15 methodology to come up with 465 (inaudible); right?

15:41:02

16 A. I'd have to look at my expert report to be
17 absolutely certain.

18 Q. Okay. It's in one of those binders there, sir.

19 MR. GRIFFIS: 741, perhaps.

15:41:31

20 THE WITNESS: I have it. 456.5?

21 Q. BY MR. GRIFFIS: Yes.

22 A. Correct.

23 Q. I said 465. I'm sorry. 456.5. So 456 is the
24 denominator for this. And, again, the reason it's

15:41:53

25 important is because if you're testing spring water or

1 anything else that doesn't cause cancer 465 times or any
2 other large number of times, you're going to get some
3 false positives almost for sure; right?

15:42:18 4 A. So first now that I see what you're looking at
5 here, I have to refer to the text a little bit. Because
6 in the text I very clearly state that I put the 456.5,
7 which is all of the animals tested, all of the tests done
8 in all of the animal species into this table for
9 completeness. But that I think the evaluation should be
15:42:40 10 done by strain and by species.

11 So we can talk about the 456.5, but it would be
12 more interesting to me and more scientifically credible
13 to discuss male Sprague-Dawley rats, female
14 Sprague-Dawley rates, male Wistar rats, et cetera.

15:43:13 15 Q. First of all, though, sir, you have a column
16 here for combined figures with 465, and you have a row
17 for that. And you have a column for the number of
18 expected positives. And that's expected by chance alone;
19 correct?

15:43:31 20 A. Correct.

21 Q. At a 0.05 confidence level; right?

22 A. There's one for 0.05 and one for 0.01.

23 Q. And the 0.05 expected is 22.8; right?

24 A. Correct.

15:43:51 25 Q. And the observed, i.e., the number that you

1 actually found, was 18; correct?

2 A. That is correct.

3 Q. And so the observed was less than the expected
4 in that column; right?

15:44:02

5 A. That is correct. That does not imply -- that
6 does not guarantee that the observes don't have true
7 positives. It's simply an evaluation of how far off it
8 is from --

15:44:27

9 Q. It's almost certain that a number of the mouse
10 and rat tumors that you told the jury about yesterday are
11 false positives; right?

12 A. Some of them are probably false positives.
13 There are some of them that I don't believe I would call
14 positive. That's in my document. I summarize all of
15 them I looked at. We didn't talk about which ones I
16 firmly believe are positive.

15:44:43

17 Q. I mean, a large number of them, probably the
18 majority, are going to be false positives, given how
19 many -- given the denominators that we're talking about.
20 Your initial calculation was 22 expected and your actual
21 number of tumors is 30; right?

15:44:59

22 A. Again, as I state in the document, that's for
23 just completeness of showing all possible things. But if
24 I look at male CD-1 mice, I expect 2.1, and I see 8. So
25 even though the number down here is 22.8 and 18, I don't

15:45:26

1 view that as a credible scientific evaluation, because I
2 want to look at the individual sex species, because I
3 don't believe in combining them. They can easily give
4 you different results, and so I evaluate them separately.

15:45:47

5 Q. Okay. The fact is that when you have a large
6 number of tests, you have a multiple testing problem.
7 That's how it's described; right?

8 A. That's correct.

15:46:04

9 Q. And a multiple testing problem is, as we
10 discussed, the fact that you're going to get a number of
11 false positives and then you need to do further
12 statistical calculations to see if you have more
13 positives -- I suppose they wouldn't necessarily be false
14 positives -- more positives than you would expect by
15 chance alone; right?

15:46:21

16 A. Yes. But, again, there -- as EFSA has put it
17 and as I will put it, there are other considerations.

18 Q. Yes, sir.

19 A. Okay. As long as we know that -- the minor --

15:46:38

20 Q. Sorry. I didn't mean to interrupt you.

21 A. Yes.

22 Q. There's a statistical side, which is kind of
23 what we're talking about right now, and there's the
24 biological side of that analysis, and you're on the
25 statistical side of it?

15:46:49

1 A. But even on the statistical side, you have to
2 worry about, okay, it's not just that I'm seeing this
3 many positive findings in this study, but four of the
4 positive findings are the same tumor in four studies.

15:47:05

5 Now, you can actually calculate the probability
6 of seeing that under no effect. I have it. But you can
7 do that. So if I really wanted to draw this out, the
8 statistical ins, all kinds of statistical ins, I would of
9 course make those calculations.

15:47:25

10 Q. Can you tell us which of the tumors you showed
11 us yesterday are false positives?

12 A. I can tell you -- no. You can never absolutely
13 be certain that you have false positives, false
14 negatives.

15:47:38

15 Q. Can you tell us how many are false positives?

16 A. I can tell you which ones I consider so strong
17 that that's what drove my sufficient evidence in animals.

18 Q. Which ones?

15:47:52

19 A. The malignant lymphoma in the male mice. The
20 hemangiosarcomas in the male mice. The skin
21 keratoacanthoma in the rats, both species of rats, both
22 strains of rats. And there's one more, and it's -- I'm
23 losing it. I'm sorry. It's late in the day. I don't
24 remember the last one.

15:48:07

25 Q. Do you want me to hold up the charts for you?

1 A. Yeah, that would help.

2 Never mind. I know which one it is. Hemangioma
3 in female mice showed up in multiple studies even when it
4 wasn't statistically significant by your definition.

15:48:33

5 Many of them were marginally significant. That's what
6 drove my decision. As well as biological reality of
7 those.

8 Q. So those you listed and not the others; right?

15:48:50

9 A. No. Those are the ones that predominantly drove
10 my discussion. I'm not going to pick and choose which of
11 the others I'd throw out.

12 Q. It's statistical, almost a statistical
13 certainty, that if we were able to just know the truth,
14 not have to guess at it statistically, but just know the
15 truth, some of those are false positives?

15:49:07

16 A. Absolutely. Some I can tell you right now I'd
17 call false positive. If you want to bring it up, I'll
18 try to remember which ones I would toss.

19 Q. Okay. Let's do that.

15:49:20

20 A. But there are some in there that I'm just not
21 certain about.

22 Q. Why don't you come down and show me which ones
23 you'd toss. Start with mice.

15:50:00

24 A. Okay. Okay. Let's look at the mice. The
25 kidney is something I also -- I think draws my decision

1 as well. So you've got kidney, malignant lymphoma,
2 hemangiosarcoma. And I didn't use the multiple malignant
3 tumors one to make my decision. That would typically not
4 be done.

15:50:20

5 Q. Why not?

6 A. Because there was a long debate on this at the
7 NTD when I was there and running it, and there were a lot
8 of different arguments for and against doing it.

15:50:33

9 Everybody believed it should be reported, but people had
10 a difficult time believing that you should base a risk
11 assessment on any tumor occurring.

12 Q. What's your view on that? You wouldn't do it?

13 A. Mixed. I would have to look very carefully. In
14 this case, I wouldn't do it. But in the case of dioxins,
15 there's such a strong binding of increased total tumors
16 in humans and rats that I might do it there.

15:50:57

17 Q. Okay.

18 MR. WISNER: Excuse me. Can we not use a
19 permanent marker.

20 BY MR. GRIFFIS:

21 Q. Which other ones are false positives?

22 A. Again, I'm not calling them false positives.
23 I'm telling you that they had less weight in my
24 discussion. I didn't feel that the evidence was strong
25 enough that it would pull me forward. The lung

15:51:23

1 adenocarcinoma and harderian gland. That's it, because
2 the rest are repeated throughout.

3 Q. And those could be false positives as well;
4 right?

15:51:44 5 A. The others, of course.

6 Q. Yes. And we don't know which are.

7 A. In any study, any evaluation, you could have
8 more false positives than you could expect. In this case
9 in the male mouse, I made that calculation. If, in fact,
10 truth is there is nothing going on, then the probability
11 of a false positive with these data is -- for the
12 males -- where did I put that calculation -- it's in the
13 text.

14 Q. Okay. Let's do the false positives while you're
15 up.

16 A. Okay. Anyway, it was less than .01. The rats.
17 So Lankas as a whole got less weight.

18 Q. Why is that?

19 A. Because the Lankas study had low exposures,
20 fairly low exposures. They're the only ones to see the
21 testicular inter cell tumors.

22 Now, they're a 26-week study. These are all
23 24-week studies. So I have to be careful when comparing
24 them. Because as the animals get older, they get more
25 tumors and testicular interstitial cell tumors is one of

15:52:59

1 those tumors that really increases late in life. And so
2 that might be a true finding, but I certainly can't
3 immediately say it's consistent. There's other things to
4 it. So I'd give that less weight.

15:53:18

5 The pancreas islet cell tumors, I'd give less
6 weight. In fact, I don't even consider them. Because I
7 said I only use trend to make my decision. And this did
8 not have a positive trend test.

15:53:32

9 Q. Why don't you cross out the ones you wouldn't
10 use.

11 A. I'll put a cross on the side, how's that.

15:53:48

12 Now, thyroid in this study is more difficult.
13 Because I see thyroid in other places or at least two
14 other places. This is a different thyroid tumor. So in
15 the rats this is kind of interesting. It could be a
16 false positive. It could be real. I'm certainly not
17 going to throw it out.

15:54:08

18 Again, here's the pancreas islet cell tumors
19 again. But, again, it's only a pairwise comparison, not
20 a trend, so I'm not going to consider that very heavily.

21 Q. Keep going with the Xs in there.

22 A. But it's weight. It's not yes, no. It all gets
23 less weight. So it's hard for me to just scratch it, but
24 I'll scratch --

15:54:24

25 Q. You're a statistician and it's hard to say "yes"

1 or "no" --

2 A. You bet you.

3 Q. What's clear is that some of these are wrong.

4 In your view, some are more likely to be wrong than

15:54:36 5 others. And we're asking you to show us the weaker ones
6 at least.

7 A. Okay.

8 Q. But any one on there could be wrong; correct?

9 A. Correct.

15:54:43 10 Q. And conceivably some of the ones you just put an
11 X on --

12 A. Could be wrong.

13 Q. -- could be right?

14 A. Could be right. Skin keratoacanthoma appear

15:54:54 15 quite a bit. And as I pointed out, in the rat data,
16 that's probably the strongest finding. And the one that
17 would be the strongest one to me saying, yeah, it caused
18 tumors in rats as well. These --

19 Q. IARC -- sorry to interrupt you, sir.

20 A. Yes.

21 Q. IARC found no statistically significant tumors
22 in the rats, as you said yourself right after the IARC
23 meeting. And it was after you'd dived into the Greim
24 data and done a whole bunch of statistical analyses with
15:55:22 25 that data, that you came up with all this stuff,

1 including the skin keratoacanthoma; right?

2 A. Correct.

3 Q. Okay.

15:55:33

4 A. Mind you, these are benign tumors. They're not
5 malignant tumors.

6 Q. Yes, sir.

15:55:46

7 A. And so if you're looking for a carcinogen, then
8 technically these are not carcinogenic findings. These
9 are pre-carcinogenic findings. And IARC would make that
10 classification and so would EFSA and so would EPA.

11 The basal cell tumors have less weight. The
12 kidney tumors I worry about, even though it isn't
13 consistent in the Sprague-Dawley rats. But I worry about
14 it, because I saw them in the -- in the mice as well.

15:56:05

15 And so that's not as far down as the basal cell
16 tumors because of that other finding. I mentioned
17 hepatocellular adenomas. The mammary gland finding,
18 while interesting, is not replicated anywhere, so it gets
19 much less weight -- the mammary gland carcinomas are
20 interesting, but as pointed out by the regulatory
21 agencies, lack of adenomas, and it's the only one that
22 has it. I'm not extremely excited about it.

15:56:25

23 And, finally, the pituitary adenomas, this was
24 in males and females. It was a really strong trend. And
25 even though I don't see it anywhere else, I would be

15:56:46

1 worried about that. So that gets more weight --

2 Q. Okay. If you had to guess, how many of those
3 are real?

4 MR. WISNER: Objection. Speculation.

15:56:59

5 THE COURT: Sustained.

6 Q. BY MR. GRIFFIS: If you had to think as a
7 statistician, how many of those are likely to be real?
8 How many of those are likely to be real?

15:57:10

9 A. -- a statistician wouldn't do it that way. A
10 statistician would calculate what's the probability of
11 seeing this pattern under null -- under the null
12 hypothesis -- under the hypothesis of no change. They
13 would calculate their probability.

15:57:26

14 Q. A statistician would agree that there's almost
15 no chance at all those are real; right?

16 A. That would be calculated as well.

17 Q. And they'd agree?

15:57:39

18 A. I don't know. I could calculate for you what is
19 the probability that all of these are not a false
20 positive error, that all of them are true findings. Now,
21 I can't calculate that. It doesn't work that way.

22 Q. Okay.

15:57:55

23 A. Because your calculation of probability is under
24 the assumption of no effect. To do a calculation under
25 the assumption of effect, you have to say what that

1 effect is. And we don't really know what it is. So you
2 do the calculations under 0 effect.

3 And so I can calculate what's the probability
4 that all of these are false positives, but I can't
15:58:12 5 calculate the probability that all of them are not false
6 positives. I don't think I can calculate that.

7 Q. Okay. Thank you.

8 A. You're welcome.

9 Q. Do you have that first binder that I gave you?

15:59:01 10 A. Do you know its title?

11 Q. It is Trial Cross Number 1, the one with Greim
12 in it.

13 A. Regularly, regulatory, regulatory,
14 cross-examine, depositions and expert reports. I think
15 it's this one. Oh, there's another one.

16 Okay. What are we looking for?

17 Q. We are looking at page --

18 A. Which exhibit?

19 Q. Oh, I'm sorry. The fat one, the Greim's study.

20 A. 25 --

21 Q. 2570. And once you're there, turn to page
22 22930.

23 A. 229. Okay.

24 Q. And do you see how to do that? It's with the
16:00:08 25 numbers at the bottom. So the full number will be

1 2570_0229.

2 A. Oh. I was at the wrong place.

3 Q. It's easy to get lost, because these are all
4 data tables taken from actual studies. But there are
16:00:32 5 numbering. We have master numbering at the bottom.

6 A. Okay.

7 Q. Okay. 229 to 30. At the bottom of 229, sir,
8 you see some study results for skin subcutaneous.

9 MR. GRIFFIS: And can we call that up, please?

16:00:52 10 Do you have an objection?

11 MR. WISNER: No. No objection, your Honor.

12 Q. BY MR. GRIFFIS: 2060, page 0229. It says,
13 "Skin subcutaneous." This is -- so this is a data table
14 from an animal study; right?

16:01:04 15 A. Correct.

16 Q. Okay. And what we have here is the -- well, you
17 told us that there were all these different organ systems
18 that are analyzed by the pathologists in the studies;
19 right?

16:01:17 20 A. That is correct.

21 Q. And we see a few of them here: Nasal cavities,
22 ovary, pancreas, parathyroid. And I'll stop reading.

23 And then we have skin subcutaneous at the
24 bottom; right?

16:01:33 25 A. Correct.

1 Q. And if you flip the page, skin cutaneous
2 continues. And three down, we have keratoacanthoma;
3 right?

4 A. Correct.

16:01:55 5 Q. Okay. These are oral feeding studies; right?
6 And this is a skin tumor?

7 A. That is correct.

8 Q. Okay. They aren't dermal exposure studies in
9 any way?

16:02:11 10 A. They are dermal exposure studies.

11 Q. These aren't, though.

12 A. Well, that's what I pointed out earlier. When
13 an animal feeds, it also grooms. And so it gets some of
14 the chemical in the feed onto the skin. That's known --
16:02:26 15 calculated for different types of how water loving --
16 that's the simplest way to put -- the chemical is and how
17 likely it is to penetrate skin and other things. So
18 that's been done. So there is some skin exposure.

19 Q. Is it scientifically reliable to presume that
16:02:44 20 the skin exposure is in proportion to the dietary
21 exposure?

22 A. In proportion. Meaning that the higher -- so if
23 I go from the dietary exposure of 1 to a dietary exposure
24 of 2, that's a doubling. In the skin, the exposure will
16:03:00 25 also double. That -- that is --

1 Q. That's a scientifically reliable established
2 thing?

3 A. I would be willing to say yes, that's
4 scientifically reliable.

16:03:12 5 Q. Okay. That's a supposition. You haven't seen a
6 study?

7 A. Oh, no. There are definitively studies on this.

8 Q. How many different skin tumors are looked at in
9 this particular study result, skin subcutaneous?

16:03:28 10 A. I count one, two, three, four, five, six, seven,
11 eight, nine, ten, eleven, twelve, thirteen -- fourteen
12 different categories -- fourteen different types. Many
13 of them 0.

14 Q. Okay. And this is an example of multiple tests,
16:03:45 15 that we see? Multiple testing problems that we talked
16 about earlier?

17 A. Not really. Let's see, you would test one,
18 two -- not that one. Not that one. Not that one.
19 Three, four -- no, no, no, no, no. You'd do four.

16:04:15 20 Q. Okay. I mean -- and maybe I wasn't clear. I
21 didn't mean that there would be 14 false positives out of
22 the skin category. But that -- just looking at one organ
23 system, you've got a whole bunch of tests in which if you
24 ran the experiment over and over again, in any one of
16:04:31 25 those you might get a false positive; right?

1 A. No. You -- you -- you don't have 14 tests here.
2 You have 14 pathologies in the various groups.

3 Q. And if you have three or more positives, you
4 have a test?

16:04:46 5 A. Correct. And there are only four with three or
6 more positives.

7 Now, if you want to argue that if we redid the
8 study again, by chance you would have five, then, yes,
9 there will be five tests. But that's a much more
16:05:01 10 complicated Type 1 error calculation or false positive
11 error rate calculation than the one that's done here.

12 Q. Yes. Okay.

13 A. And I can't comment on that one. That's --

14 Q. So there's not a 1 to 1 correlation between a
16:05:18 15 conceivable tumor type and a test for doing a statistical
16 analysis. But the more organ systems and possible tumor
17 types you look at, as you do that, your test count is
18 going to go up and your false positive count is going to
19 go up, generally speaking; right?

16:05:34 20 A. Your possibility of false positives is going to
21 go up. I actually calculated how many studies -- how
22 many number -- how many tumor types with three or more
23 tumors there were in these studies. After I gave up on
24 Dr. Haseman's.

16:05:54 25 Q. What's the result for squamous cell carcinoma?

1 A. Three out of 51 in the control; 0 out of 51 in
2 the mid and the low dose; 0 out of 51 in the mid dose;
3 and 1 out of 51 in the high dose.

16:06:24

4 Q. That's definitely not a significant result;
5 right?

6 A. I don't have the test in front of me, but I'd be
7 willing to bet that that is not statistically
8 significant.

16:07:14

9 Q. Doctor, you submitted comment to the EPA in
10 2016; correct?

11 A. I believe it was 2016. Yes, I certainly
12 submitted a comment to the EPA.

16:07:33

13 Q. And in your comments to EPA in October and
14 December 2016, you sent them an analysis arguing that the
15 EPA should classify glyphosate as a carcinogen; right?

16 A. I don't think I said that. I think I sent them
17 evaluations that showed them where they had made mistakes
18 on their individual tumors, what they had missed and why
19 I didn't believe their conclusions.

16:07:52

20 Q. And you submitted to them a disclaimer. And the
21 disclaimer said, "This work was done with my own
22 resources and on my own time. I received no
23 reimbursement for any of these comments and no other
24 party has contributed to the drafting of these comments.

16:08:09

25 These comments are solely my opinions and my

1 responsibility"; correct?

2 A. You'd have to -- I'd have to see it.

3 Q. Okay. Take a look at 2929 and 2928 in the large
4 binder.

16:08:31 5 A. I have a 2928, but there's no 2929 after it.

6 Q. Okay. Look at 2928.

7 A. And that's at the beginning of this document.

8 Q. I'm sorry?

9 A. That disclaimer is at the beginning of this
16:09:00 10 document.

11 Q. This is at the beginning of this document?

12 A. Correct, this document is my response to
13 comments that Joe Haseman had made to the EPA about my
14 comments and about the EPA assessment.

16:09:23 15 Q. I'm going to show you, sir, one of the EPA
16 documents that you have said was so amazingly wrong, and
17 I believe you'll find that in regulatory 2.

18 Let's start with 2437, sir.

19 Are you there?

16:10:11 20 A. Yes, I'm here.

21 Q. Okay. And what is this document?

22 THE COURT: Counsel, which binder are you in
23 now?

24 MR. GRIFFIS: I'm sorry. I'm in regulatory
16:10:39 25 documents binder 2.

1 THE COURT: Okay.

2 THE WITNESS: Is this the carcinogenic
3 assessment review committee draft. No. It says, "Final
4 report," but this is a report that went online, came
16:11:01 5 offline, but I think that's this report from EPA.

6 Q. BY MR. GRIFFIS: Okay. So it's a October 1,
7 2015, document, Exhibit 2437, entitled "Glyphosate Report
8 of Cancer Assessment Review Committee"; right?

9 A. That's what it is, yes.

16:11:18 10 Q. All right. And on page 10, you see the
11 conclusion of the committee. It's that small paragraph
12 after the partial paragraph at the top of the page, "In
13 accordance with the" --

14 MR. WISNER: Objection. Foundation. I believe
16:11:32 15 he just testified this was retracted.

16 THE WITNESS: Yeah, I don't know what became of
17 this document. It was put on EPA's website. Then they
18 took it down and apologized for putting it up out of
19 context. I don't know this -- what happened with this
16:11:49 20 document.

21 Q. BY MR. GRIFFIS: Did you read it?

22 A. Yes, I read it.

23 Q. And did you read this sentence, the one
24 starting, "In accordance with"?

16:11:55 25 A. Where?

1 Q. On page 10, after the first -- after the partial
2 paragraph there is a three-line paragraph.

3 A. Yes, I'm there.

16:12:11

4 Q. Okay. Did you read that paragraph when it was
5 online?

6 A. I don't recall. I don't remember --

7 Q. Okay.

8 A. -- honestly.

16:12:28

9 Q. When this was posted online, did you read and
10 see what the conclusions of the Cancer Assessment Review
11 Committee was?

12 A. Yes, I did.

13 Q. And what were those conclusions?

14 A. I'd have to find them.

16:12:36

15 Q. Okay. Go ahead.

16 A. I guess they're on this page, but I was more
17 focused on the epi and animal evidence. I don't remember
18 the *in vivo* work and what they concluded there.

16:12:59

19 Q. The Cancer Assessment Review Committee's
20 conclusions on the epidemiology in animal studies are
21 something you disagree with; correct?

22 A. I'd have to read them again.

23 Q. Okay.

16:13:20

24 THE COURT: Mr. Griffis, if you can start asking
25 your final questions for today, I do want to leave a

1 little bit of time for us to discuss the matters outside
2 the jury's presence.

3 MR. GRIFFIS: Okay.

4 MR. WISNER: Your Honor, I actually need a
16:13:31 5 sidebar about this document.

6 THE COURT: Okay. Then perhaps this would be a
7 good time to break, then. Is there anything further that
8 you wanted to ask to conclude for today, Mr. Griffis?

9 MR. GRIFFIS: We can stop there.

16:13:40 10 THE COURT: Okay. Then, Ladies and Gentlemen,
11 we're going to adjourn for today. Please remember do not
12 research any of these topics over the weekend. Do not
13 discuss this case, and we'll resume again on Monday at
14 9:30.

16:13:54 15 All right. Thank you very much.

16 THE WITNESS: Your Honor, could I ask you a
17 question?

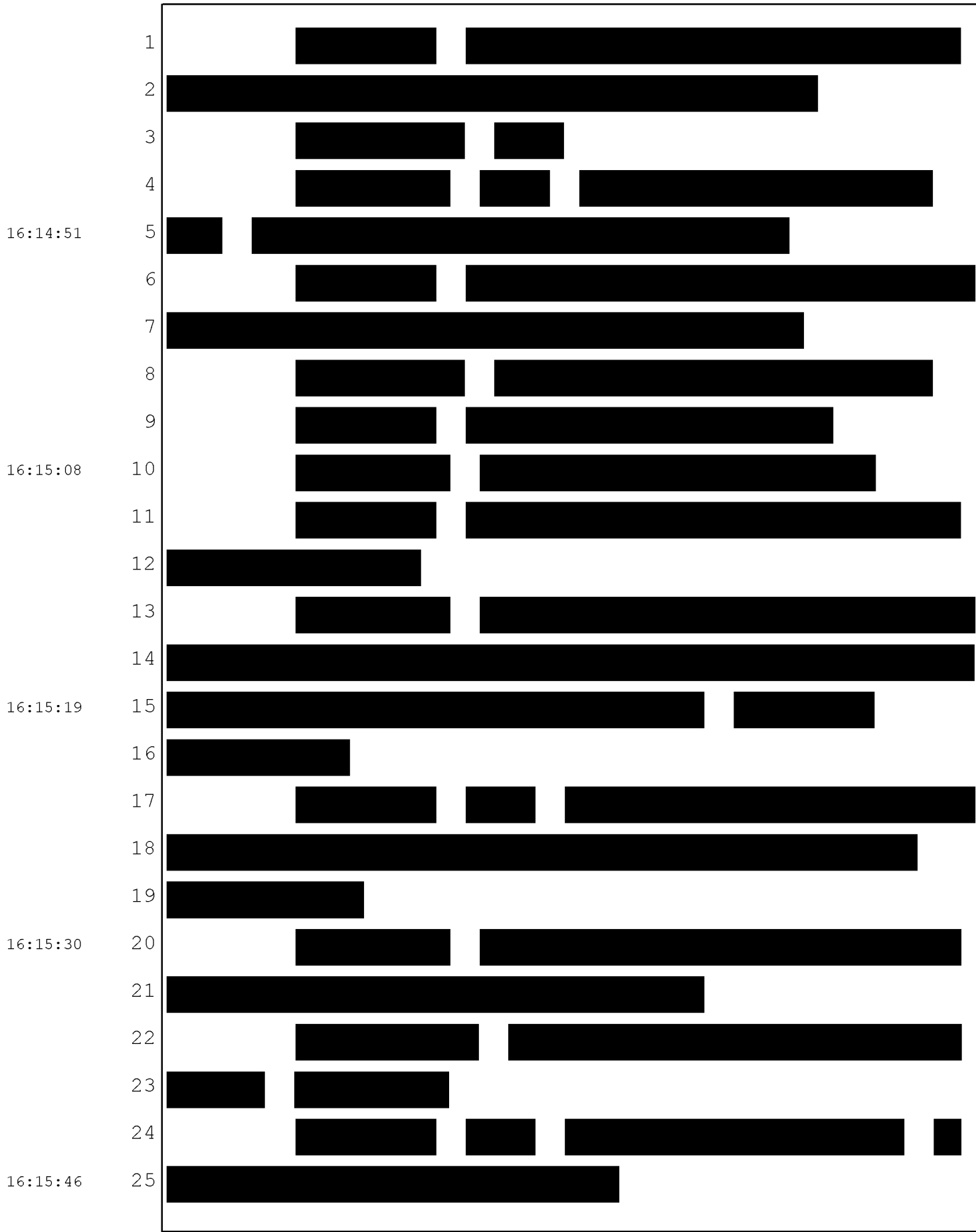
18 THE COURT: Yes.

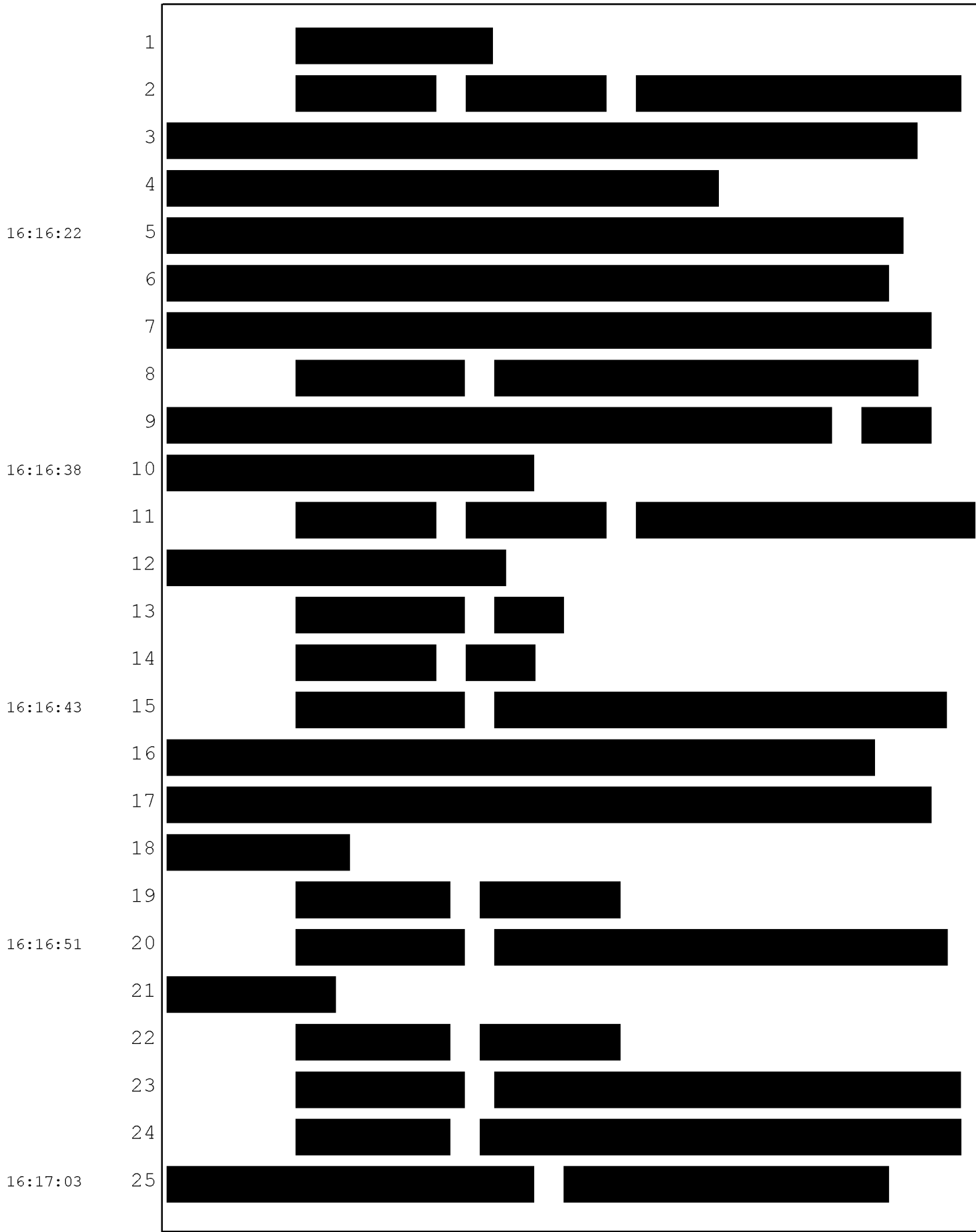
19 THE WITNESS: I packed my clothes, I'm moving
16:14:02 20 hotels, and I left it in the lawyer's office. Can I go
21 get it?

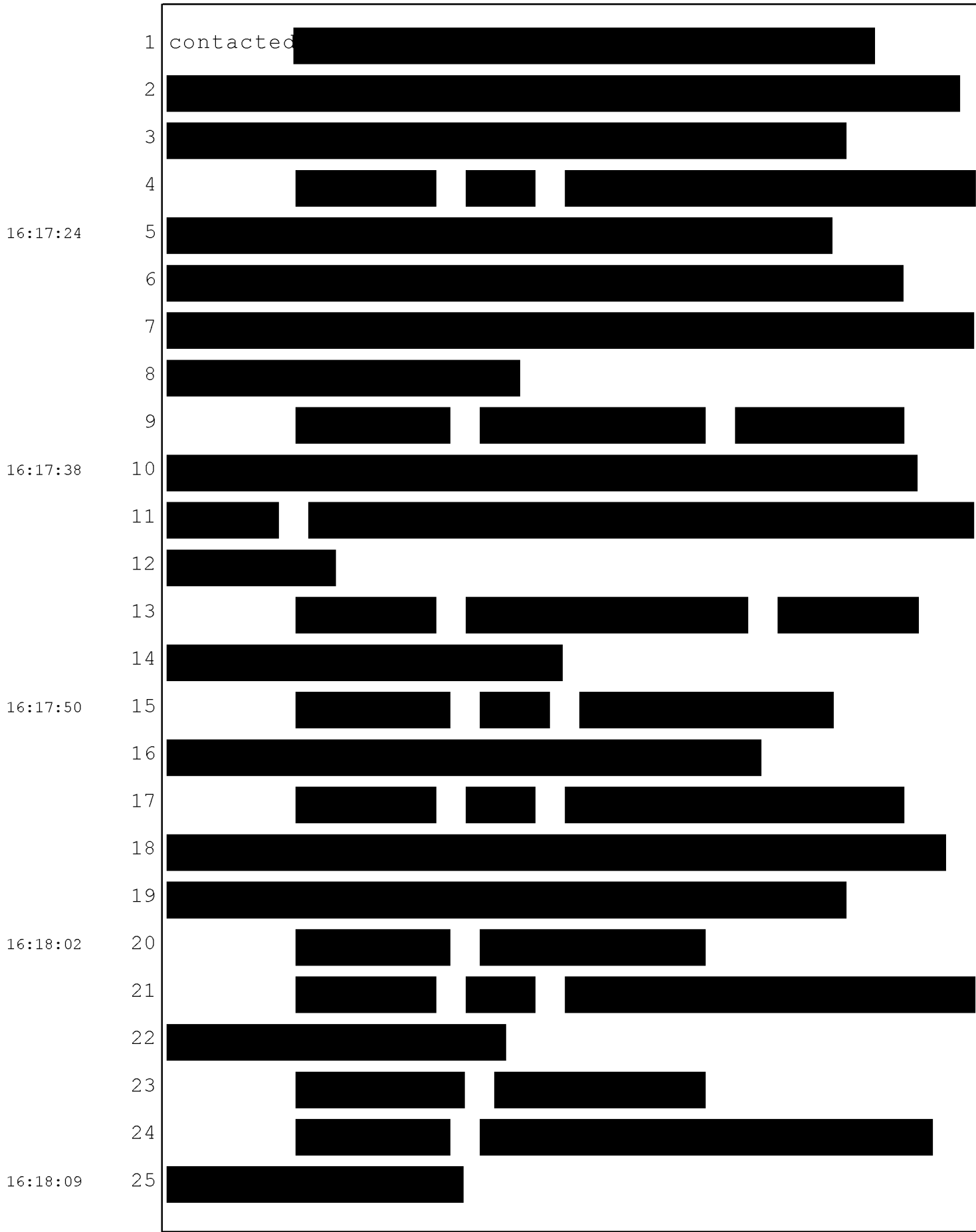
22 THE COURT: Why don't we talk about this once
23 the jury has been excused.

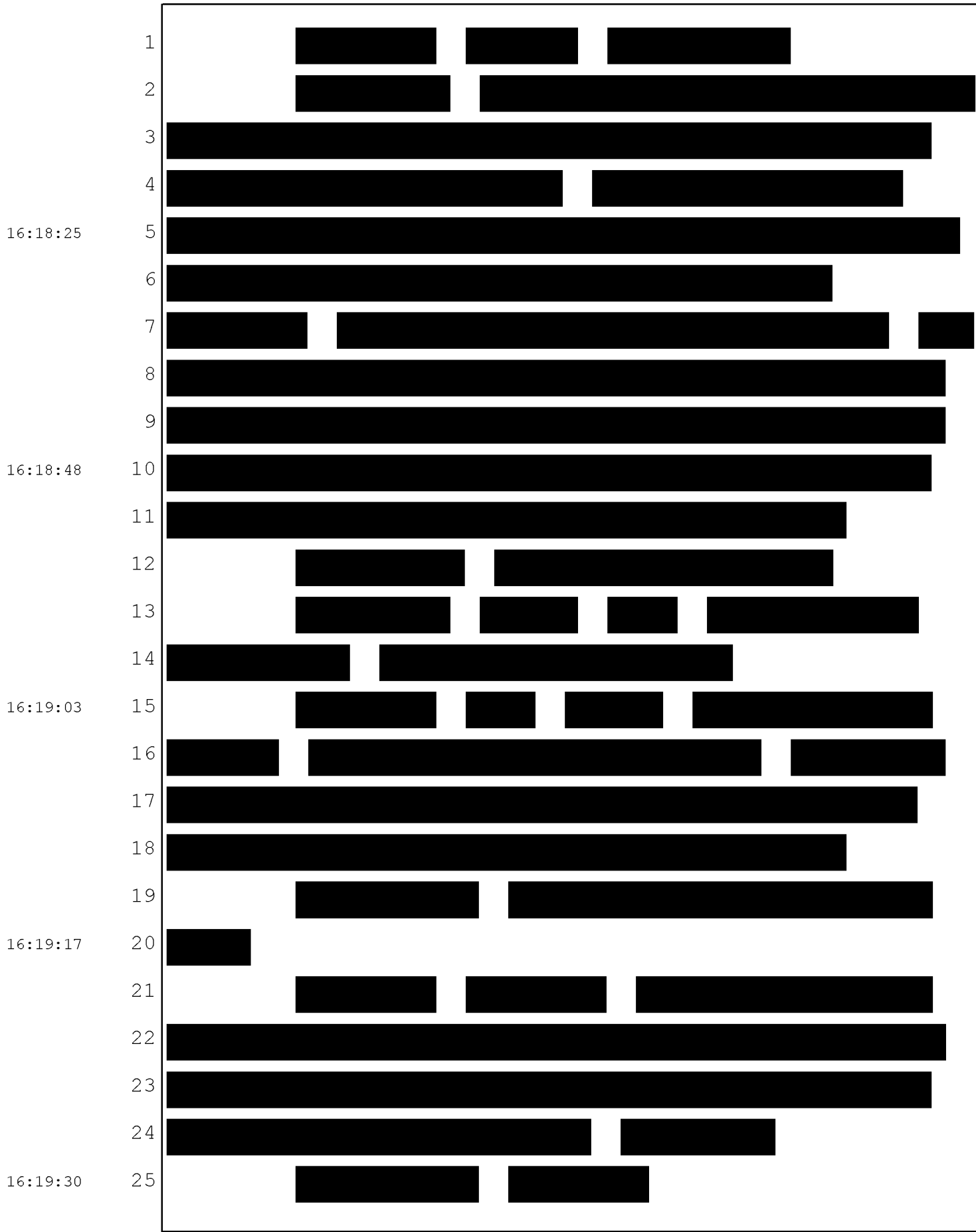
24 THE WITNESS: Okay. Thank you.

16:14:38 25 (Sidebar.)









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(Time noted: 4:20 p.m.)

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1 REPORTER'S CERTIFICATE

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I certify that the proceedings in the within-titled cause were taken at the time and place herein named; that the proceedings were reported by me, a duly Certified Shorthand Reporter of the State of California authorized to administer oaths and affirmations, and said proceedings were thereafter transcribed into typewriting.

I further certify that I am not of counsel or Attorney for either or any of the parties to said Proceedings, not in any way interested in the outcome of the cause named in said proceedings.

IN WITNESS WHEREOF, I have hereunto set my hand:
July 13th, 2018.

<%signature%>
Leslie Rockwood Rosas
Certified Shorthand Reporter
State of California
Certificate No. 3462