UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF LOUISIANA

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IN RE: OIL SPILL BY THE OIL RIG *DEEPWATER HORIZON* IN THE GULF OF MEXICO ON APRIL 20, 2010	DOCKET NO. MDL-2179 SECTION "J" NEW ORLEANS, LA THURSDAY, OCTOBER 3, 2013

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IN RE: THE COMPLAINT AND PETITION OF TRITON ASSET LEASING GMBH, ET AL	DOCKET NO. 10-CV-2771 SECTION "J"

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UNITED STATES OF AMERICA V. BP EXPLORATION & PRODUCTION, INC., ET AL	DOCKET NO. 10-CV-4536 SECTION "J"

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DAY 4 MORNING SESSION
TRANSCRIPT OF NONJURY TRIAL PROCEEDINGS
HEARD BEFORE THE HONORABLE CARL J. BARBIER
UNITED STATES DISTRICT JUDGE

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OFFICIAL TRANSCRIPT

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I N D E X

P-R-O-C-E-E-D-I-N-G-S

THURSDAY, OCTOBER 3, 2013

M O R N I N G S E S S I O N

(COURT CALLED TO ORDER)

08:00:56 THE DEPUTY CLERK: All rise.

08:00:58 THE COURT: Good morning, everyone.

08:01:00 VOICES: Good morning, Judge.

08:01:02 THE COURT: Before we take up any other preliminary matters, we'll give everybody a heads-up on the clock.

08:01:07 According to my timekeepers, the aligned parties have used 9 hours and 54 minutes, meaning they have 5 hours and 6 minutes remaining. BP has used 12 hours and 4 minutes, meaning they have 2 hours and 56 minutes remaining. That should put us right about -- if everybody uses all of their time, we should end right as expected, about six clock. Regardless, we'll finish today.

08:01:39 You all can give back time, you know. I think in Washington they call it yielding, yielding back your time, something like that.

08:01:50 Do you have preliminary matters?

08:01:52 MR. SMITH: Good morning, Your Honor. Prescott W. Smith on behalf of Halliburton and the aligned parties.

08:01:58 I just wanted to give you a quick update on the

status of the exhibits that we proposed to submit into evidence in connection with the testimony of Edward Ziegler.

THE COURT: Just tell me if you worked it out or not, Mr. Smith.

MR. SMITH: We are in the process of working it out.

THE COURT: Then come back when you've worked it out.

MR. SMITH: Okay. Thank you.

THE COURT: That's the update.

MS. KARIS: Your Honor, at this time, I'd offer the exhibits used with Trevor Smith, the exhibits used with Mr. Mazzella, as well as the exhibits used with Mr. Dupree.

I'm happy to report that we've worked it out because there are no objections to these.

THE COURT: Very good. Without objection, those are admitted.

(WHEREUPON, the above referenced exhibits were admitted.)

MR. BROCK: Your Honor, good morning. Mike Brock for BP.

A couple of things on the housekeeping side. I'm going to hand up when I'm finished here the videotape and the transcripts of testimony that we introduced on Wednesday, as well as BP's source control opening, with the exhibits that go with that.

Then I wanted to let the Court know, in terms of

the schedule for today, that our plan is to finish Mr. Ballard this morning. We have about 17 minutes of videotape to play. We're going to call Iain Adams as our next witness. Then, following Iain Adams, we will either call Dan Gibson or play some additional videotape.

THE COURT: Now, I've got to tell you, I read over quickly last night Mr. Adams's report and Mr. -- you're not going to use Mr. Gibson?

MR. BROCK: Well, I'm changing the order of Adams and Gibson. I'm going to evaluate that in terms of time and what we've put in the record after we --

THE COURT: Because I've looked at it, and both of those seem to be pretty cumulative, but it's your time.

MR. BROCK: Well, Mr. Adams definitely has some information that we need -- we feel like we need to bring to the Court.

THE COURT: I'm not saying there is not something that's not cumulative, but a large part of each of those reports, just reading them over, seemed to be cumulative, anyway.

MR. BROCK: Thank you, Your Honor.

MR. BRIAN: I'm ready to resume my cross-examination of Mr. Ballard. You'll be happy to know, Your Honor, that by breaking, I've actually cut two of the --

THE COURT: Where is Mr. Ballard?

MR. BRIAN: -- so it will be a little shorter.

THE COURT: Oh, there he is. I don't think he wanted to come back.

MR. BRIAN: Just on a procedural point, Your Honor, we offered the thumb drive, I guess, of the videotape clips. I don't think we actually offered in evidence the written transcripts. Did we? We did. Okay. I take that back. We did.

THE COURT: All right.

You're still under oath, sir. Good morning.

ADAM BALLARD

was called as a witness and, after being previously duly sworn by the Clerk, was examined and testified on his oath as follows:

CROSS-EXAMINATION BY MR. BRIAN: (Continued)

Q. Good morning, Mr. Ballard. Brad Brian on behalf of Transocean and the aligned parties. I still have you on cross-examination.

Mr. Ballard, you testified yesterday that you now work as an assistant to one of BP's regional presidents. Did I hear that right?

A. Yes, you did.

Q. Can we put up TREX-11905R.31.1.TO.

This is your résumé that was attached to your Expert Report, is it not?

08:05:49 A. Yes, it is.
08:05:49 Q. You see you identify current position, BP, Gulf of Mexico
08:05:54 DWP Special Projects. Is that the same position you now hold?
08:05:57 A. No.
08:05:57 Q. Neither of these positions was the one you held at the
08:06:02 time you had your Rule 30(b)(6) deposition taken in mid-October
08:06:07 of 2012, correct?
08:06:09 A. No. I was the engineering manager for *Thunder Horse* at
08:06:13 the time.
08:06:13 Q. When were you promoted to the assistant to one of BP's
08:06:16 regional presidents?
08:06:19 A. Well, I wouldn't call it a promotion, but I started that
08:06:22 role, I believe, April 1st or around the beginning of April of
08:06:26 this year.
08:06:27 Q. Before or after you gave your expert deposition in this
08:06:30 case?
08:06:30 A. I gave my expert deposition in October, I believe, of last
08:06:33 year, so it was after.
08:06:34 Q. Now, I think you testified yesterday you've worked for BP
08:06:37 for more than 11 years; is that right?
08:06:39 A. Yes.
08:06:40 Q. In fact, it's the only company in the oil and gas industry
08:06:44 that you've worked for since you graduated from college and
08:06:47 began working in a full-time position, correct?
08:06:50 A. Yes.

08:06:50 Q. And you have no plans to leave BP any time soon, do you,
08:06:54 sir?
08:06:55 A. No, I don't.
08:06:55 Q. In fact, you hope to continue working at BP for the
08:06:58 indefinite future, don't you?
08:06:59 A. I hope to keep my employment, yes.
08:07:01 Q. Now, you also testified yesterday in response to BP
08:07:05 counsel's questions that it was NOAA who came up with the
08:07:10 estimate of 5,000 barrels a day. Do you remember that?
08:07:13 A. Yes.
08:07:13 Q. You're not saying, are you, that the 5,000 barrels per day
08:07:18 estimate was just a NOAA estimate; that's not your testimony,
08:07:20 is it, sir?
08:07:22 A. Well, my testimony is I've reviewed some information that
08:07:26 I believe it was the testimony of Mr. Henry, who recalls
08:07:31 telling Admiral Landry that NOAA had come up with an estimate
08:07:34 of about 5,000.
08:07:35 Q. You understand that BP embraced and, in fact, represented
08:07:38 that estimate repeatedly; you're aware of that, are you not?
08:07:42 A. I'm aware -- I'm aware that there were some communications
08:07:46 about 5,000 being an estimate.
08:07:50 Q. Let's put up TREX-150106.1.1.TO.
08:07:58 This is an e-mail from Doug Suttles dated Friday,
08:08:03 May 21, 2010, correct?
08:08:04 A. Yes.

Q. You see where he states in the last paragraph, "Also note that the 5,000 BOPD with a wide uncertainty range was a rate agreed by NOAA, Coast Guard and BP very early in the spill. I notice on the bottom of this note we are saying this was a NOAA estimate. That is not correct and continues to create an issue with NOAA and the Coast Guard."

That's what Mr. Suttles wrote, did he not, sir?

A. Yes, sir.

Q. Did you ever ask Mr. Suttles about this note?

A. No.

Q. It is a fact, is it not, that NOAA never did any reservoir modeling; that's a fact, is it not?

A. I don't know.

MS. KARIS: Foundation.

EXAMINATION BY MR. BRIAN:

Q. You're not aware of NOAA doing any reservoir modeling, are you, sir?

A. No. The modeling -- from reading Mr. Henry's testimony, I believe the modeling encompassed more visual observation.

Q. Flyovers and video kind of observations, right?

A. I believe so, but I didn't fully look at all that information to form an opinion as to what they did.

Q. Did you read Admiral Landry's deposition?

A. I read portions of it, yeah.

Q. Let's put up Page 321, lines 10 through 15.

Did you read this portion:

"QUESTION: And do you know whether Unified Area Command relied on some of the work that BP had conducted in connection with making its announcement of 5,000 on April 28th?

"ANSWER: I relied -- I relied on the work of BP through Doug Suttles, as the lead person for BP."

Did you read that testimony?

A. Yes, I did.

Q. Let's put up demonstrative 25018A.

You were in court when Mr. Wilson testified, were you not?

A. Yes, I was.

Q. You heard him testify about the many times that BP represented publicly and in communications that 5,000 barrels a day was the first estimate; you recall that estimate by Mr. Wilson, do you not?

A. I believe so, yes.

Q. When we were here yesterday, we ended when I showed you an e-mail from Mr. Mason. Do you remember that?

A. To Mr. Inglis?

Q. Yes.

Let's put up TREX-3220.1.1.TO.

This is the e-mail from Mr. Mason to Mr. Inglis that you were just alluding to, was it not?

A. Yes.

08:10:39 Q. You read this in connection with your testimony, didn't
08:10:42 you, sir?
08:10:42 A. I did.
08:10:44 Q. You read where Mr. Mason said to Mr. Inglis on May 15th,
08:10:48 quote, "We should be very cautious standing behind a 5,000 BOPD
08:10:53 figure, as our modeling shows that this well could be making
08:10:58 anything up to approximately 100,000 barrels of oil per day,
08:11:03 depending on a number of unknown variables."
08:11:05 You read that e-mail that Mr. Mason wrote to
08:11:08 Mr. Inglis, didn't you, sir?
08:11:10 A. Yes, I did. I also read Mr. Mason's testimony describing
08:11:14 why he had written that as well, if you'd like.
08:11:16 Q. Let's put up TREX-9156.6.1. Actually, I'm sorry,
08:11:33 9156.5.1.
08:11:34 This is one of the charts that Mr. Mason attached to
08:11:36 his May 15th e-mail to Mr. Inglis; is it not?
08:11:43 A. I don't know if there was an attachment to that e-mail,
08:11:45 but I've seen this chart before, or this table.
08:11:47 Q. I'll represent to you, sir, it's part of the same TREX
08:11:52 number.
08:11:52 A. Okay.
08:11:52 Q. In this chart, Mr. Mason, using hydraulic modeling, came
08:11:57 up with ranges, for example, from 21 barrels a day to
08:12:02 82 barrels a day, correct; with these assumptions, right?
08:12:05 A. Well, with the assumptions he had came up with his range,

08:12:10 at least, for this table -- or the top table, was 21,000 to
08:12:14 82,000 barrels a day.
08:12:16 Q. 21,000 to 82,000 barrels a day were the calculations under
08:12:19 the assumptions of this hydraulic modeling on the top of
08:12:23 TREX-9156.1 -- .5.1, correct?
08:12:29 A. Yes, based on the maximum reservoir exposed and the high
08:12:34 end of permeability and for these four flow paths and no
08:12:39 restrictions downhole --
08:12:39 Q. In the bottom --
08:12:41 A. -- came up with that range.
08:12:41 Q. I'm sorry. In the bottom, he came up with a range of
08:12:46 24,000 barrels a day to 96,000 barrels a day, correct?
08:12:48 A. Yes, so simulating those same conditions with the LMRP
08:12:51 removed, he came up with those --
08:12:51 Q. Let me show you --
08:12:54 A. -- ranges.
08:12:54 Q. I'm sorry. Let me show you TREX-9250.2.1.TO.
08:13:03 You know who Mr. Ole Rygg is, do you know, sir?
08:13:03 A. Yes, I --
08:13:03 Q. Does he pronounce it Rygg or Rygg, do you know?
08:13:08 A. I believe it's Rygg.
08:13:09 Q. Rygg, okay.
08:13:12 You see here that Mr. Rygg wrote on May 16th, at the
08:13:17 bottom, in an e-mail to Trevor Hill, "Be aware that we are
08:13:21 working on the 5,000 BOPD case. That could be too optimistic."

He wrote that on May 16th to Trevor Hill, copy to Kurt Mix and Thomas Selbekk, did he not?

A. Yes.

Q. All three of those gentlemen, Mr. Rygg -- Dr. Rygg, Mr. Hill, Mr. Mix, Mr. Selbekk, were all working as part of the hydraulic modeling group, correct?

A. Yes. I'm not sure Mr. Mix was doing modeling, but I believe Mr. Selbekk, Mr. Hill and Mr. Rygg --

Q. Mr. Hill forwarded this e-mail to Dr. Tim Lockett, did he not?

A. I believe I've seen those communications.

Q. Put up TREX-9250.1.1.TO.

Mr. Lockett, upon looking at this, wrote this e-mail back to Mr. Hill on May 17th, in which he said, in part, "The apparent reliance in Ole's e-mail on the 5,000 number, which has little, if no, origin, is concerning."

He wrote that on May 17th, did he not, sir?

A. Yes, he did.

Q. He went on to say, "From all the different ways we have looked at flow rate, 5,000 would appear to err on the low side." That's what he wrote, did he not?

A. That's what he wrote.

Q. Now, this e-mail was forwarded to Douglas Wood, wasn't it, sir?

A. I believe so.

08:14:50 Q. Let's put up TREX-9250.1.2.TO.

08:14:57 On May 18th, Mr. Wood wrote back to Mr. Hill, copy to
08:15:01 Mr. Lockett, saying, "Tim's points are both valid and have an
08:15:06 impact on the viability of the kill option working." That's
08:15:09 what Mr. Wood wrote, did he not?

08:15:11 A. Yes.

08:15:17 MR. BRIAN: May I approach, Your Honor?

08:15:18 THE COURT: Yes.

08:15:18 EXAMINATION BY MR. BRIAN:

08:15:20 Q. Let's put up on the screen, as I do this, demonstrative
08:15:24 D25013B. I have a blow-up here.

08:15:35 So, in the middle of May, we've just seen e-mails
08:15:40 where Dr. Rygg, Thomas Selbekk, Mike Mason, Trevor Hill,
08:15:48 Douglas Wood, Tim Lockett, all these folks wrote e-mails
08:15:55 questioning the reliance on the 5,000 barrel per day estimate,
08:15:55 correct?

08:16:03 A. I think we saw Dr. Rygg and Dr. Lockett had made some
08:16:09 comments around the reliance on it.

08:16:10 Q. Doug Wood said that he agreed that Mr. Lockett's points
08:16:14 were valid, correct?

08:16:16 A. I believe -- put in context, reading through that e-mail
08:16:19 string -- from my recollection of that communication string and
08:16:22 talking to Mr. Wood, I believe what he agreed with is that they
08:16:26 should be running the Top Kill modeling at different scenarios.

08:16:30 Q. Despite the e-mails in the May 16, 17 period, BP continued

to represent to the government that 5,000 barrels per day was the best estimate, did it not?

MS. KARIS: I object to form and foundation, Your Honor.

THE COURT: Overruled.

THE WITNESS: Can you repeat it?

EXAMINATION BY MR. BRIAN:

Q. Despite the e-mails I've shown you in the mid-May period from Mr. Mason, Dr. Rygg, Mr. Lockett and Mr. Wood, BP continued to represent that 5,000 barrels per day was the best estimate of flow, didn't it?

A. So the timeline is the timeline. The hydraulic modelers had made some comments, as you suggested; but, from my understanding, the timeline that you showed earlier, those were the different communications from BP.

Q. Let's put up TREX-1651.1.1.TO.

This is the May 24, 2010, letter that BP wrote to Congressman Markey, is it not, sir?

A. Yes, it is.

Q. This was sent, you would agree, after those e-mails that I just showed you from Mr. Mason, Mr. Lockett, Mr. Wood, correct?

A. Yes.

Q. Let's put up TREX-1651.1.2.TO.

In that letter, which was written after these cautionary e-mails, BP represented that the range varies from

about 1,000 barrels per day to roughly 15,000 barrels per day, with a best scientific guess of roughly 5,000 barrels per day; BP wrote that, did it not?

A. Yes. That's in the letter.

Q. Let's put up TREX-1651.2.1.TO.

Also in the letter, BP was asked a -- was responding to the question of what is the BP method and scientific basis for the estimate of 5,000 barrels per day. BP responded, "Subsequent estimates of flow rate have been carried out within Unified Command and have yielded consistent results." BP wrote that, did it not?

A. Yes.

Q. Now, you agree, don't you, that none of the hydraulic modeling that you reviewed gave BP a basis for asserting that there were consistent results, right? You would agree with that?

A. I can only speak to the hydraulic modeling in which, as discussed yesterday, due to the uncertainties, you could only determine the most at which that well is flowing, anywhere from zero to that amount.

Q. So let me reframe my question so you understand it. So you would agree that hydraulic modeling did not allow -- did not support a statement that "estimates yielded consistent results"; you would agree with that, correct?

A. No.

08:19:41 Q. You think hydraulic modeling did yield consistent results?
08:19:46 A. I don't think hydraulic modeling could inform it. If a
08:19:48 rate given by another method were above what the hydraulic
08:19:53 modeling was saying was the most, then, yes, it would say that
08:19:56 that's not consistent.
08:19:56 Q. Okay.
08:19:58 A. But anything less, it can't say. All it can say is it's
08:20:01 within the hydraulic modeling.
08:20:03 Q. So hydraulic modeling would not, for example, support a
08:20:07 representation that 5,000 barrels per day was the most
08:20:10 scientifically informed judgment, would it, sir?
08:20:13 A. Hydraulic modeling alone could not inform the most likely
08:20:16 estimate.
08:20:16 Q. Thank you.
08:20:18 By the way, the e-mail I showed you from Mr. Mason
08:20:20 saying, "We should be very cautious standing behind the
08:20:24 5,000 barrels per day," you've seen no evidence that that
08:20:26 e-mail was provided by BP to the Unified Command, have you,
08:20:31 sir?
08:20:32 A. No, I didn't look to see if it was.
08:20:34 Q. You've seen no evidence that Mr. Lockett's e-mail saying
08:20:38 that the "5,000 barrels per day has little, if no, origin" was
08:20:42 provided by BP to the Unified Command; you've seen no evidence
08:20:46 of that either, have you, sir?
08:20:47 A. No. In speaking to Tim Lockett about that, I mean, I can

give you the details of it, if you would like --

Q. That's not my question.

A. -- but he didn't mention if he had sent it.

Q. So the fact is, and the evidence shows, that BP tried to keep much of its hydraulic flow rate modeling confidential, both externally and internally; that's what the evidence shows, doesn't it, sir?

MS. KARIS: Object to form and foundation.

THE COURT: I'm going to overrule the objection. It seems to me BP brought this witness to testify as to what information BP gathered and provided to the government, and I think this is a fair question. So I overrule the objection.

THE WITNESS: Can you repeat the question?

EXAMINATION BY MR. BRIAN:

Q. The fact is that BP tried to keep much of its hydraulic flow rate modeling confidential, both outside and inside BP; isn't that the fact?

A. Can you just explain what you mean by "both outside and inside"?

Q. Within the company and to the Unified Command.

A. Like I said, I have seen communications of the upper bounds, which is what the hydraulic modeling could actually do, tell you the most that under any given scenario or flow path, how much could be flowing. I've seen several communications to the government on that.

08:22:23 Q. You were personally told, were you not, that BP was not
08:22:31 releasing any information that can be related to rate; you
08:22:35 personally were told that, weren't you, sir?
08:22:37 A. I was told that, but not in relation to hydraulic
08:22:43 modeling. That was in regards to, I believe, the first days of
08:22:47 the RITT collection.
08:22:48 Q. Let's look at TREX-9475.5.1.TO. 9475.5.1.TO.
08:23:07 This is an e-mail that you wrote, not in the first
08:23:11 days after the spill, but on May 17th, did you not?
08:23:13 A. Yes.
08:23:14 Q. You asked, did you not, for some sort of daily status
08:23:19 report that "highlights key learnings and whatnot. If so,
08:23:22 could Bill and I get a copy of that"? You wrote that, did you
08:23:26 not?
08:23:26 A. Yes, I did.
08:23:26 Q. Let's put up TREX-9475.3.1.TO.
08:23:34 Your e-mail -- you didn't address your e-mail to
08:23:36 Mr. Lynch, but Mr. Lynch was the one who responded to you, was
08:23:41 he not?
08:23:41 A. Yes.
08:23:42 Q. Mr. Lynch is the vice-president above these modelers, is
08:23:49 he not, sir?
08:23:51 A. On the picture, he's definitely above the modelers, and at
08:23:55 the time before the incident, not during the incident, he was
08:23:58 the Vice-President of Drilling and Completions.

08:23:59 Q. He wrote you, "Alan, you need to be more specific what you
08:24:04 are looking for, for at this point we are not are releasing any
08:24:08 information that can be related to rate." That's what he
08:24:11 wrote, did he not?
08:24:12 A. Yes, he did.
08:24:13 Q. Let's put up TREX-9475.3.2.TO.
08:24:22 You wrote back to Mr. Lynch saying, "In particular,
08:24:25 information such as," and you listed various information you
08:24:29 needed, correct?
08:24:30 A. Yes.
08:24:30 Q. Let's put up TREX-9475.2.1.TO.
08:24:39 Mr. Lynch responded to you that day saying, quote,
08:24:42 "We remain in a position where no flow related information can
08:24:47 be released internally or externally." That's what he wrote,
08:24:50 did he not?
08:24:51 A. Yes.
08:24:52 Q. Let's go to TREX-9475.1.1.TO.
08:24:59 Who is Philip Maule?
08:25:02 A. Maule.
08:25:03 Q. Who is Philip Maule?
08:25:07 A. Philip Maule, at the time, was the engineering manager for
08:25:10 the collection -- or containment disposal project, which was
08:25:14 the project that I was working at this time.
08:25:15 Q. He e-mailed you and Mike Brown on May 18th, did he not?
08:25:19 A. Yes.

08:25:20 Q. He said, "Mike," meaning Mike Brown, "Any update on oil
08:25:26 rate? Tony H. announcement said around 2,000 BPD being
08:25:32 captured, but presumably plenty still going into sea." That's
08:25:36 what he wrote to you and Mr. Brown on May 18th, did he not?
08:25:38 A. That is. I think he was referring to, again, the RITT
08:25:43 collection, which had just started up around this time.
08:25:44 Q. Then let's put up TREX-9475.1.2.TO.
08:25:50 Then he supplemented that by saying, "Very tight
08:25:55 information. And we're still getting stabilized, good deal
08:25:58 still going to sea." That's what he wrote, "very tight
08:26:01 information," right?
08:26:01 A. Yes.
08:26:01 Q. Let's put up TREX-8656.1.1.TO. 856.1.1.TO. I'm sorry,
08:26:27 this is right. It's 8656.1.1.TO. Sorry.
08:26:33 This is an e-mail dated April 22nd from a
08:26:37 Rob Marshall. Do you see that?
08:26:38 A. Yes.
08:26:38 Q. In that e-mail, he says that, "Alistair Johnston altered
08:26:45 his Macondo Well model to approximate open hole flowing
08:26:49 conditions and calculated a rate of 82,000 barrels per day."
08:26:54 Do you see that?
08:26:54 A. Yes.
08:26:54 Q. Have you seen the response to that?
08:26:56 A. I believe so, yes.
08:26:57 Q. Let's put that up, TREX-8656.1.2.TO.

08:27:08 Then Gary Imm responded the same day and said, at the
08:27:11 bottom, "Please tell Alistair not to communicate to anyone on
08:27:15 this." That's what he wrote, did he not?
08:27:16 A. At the bottom, yes.
08:27:17 Q. Above that, he explained why, which was, "A number of
08:27:20 people have been looking at this, and we already have had
08:27:27 difficult discussions with the U.S.C.G. on the numbers." He
08:27:29 wrote that as well, did he not?
08:27:30 A. Yes.
08:27:31 Q. You understand that U.S.C.G. refers to United States
08:27:35 Coast Guard, do you not?
08:27:36 A. I would believe that's what it is, yes.
08:27:37 Q. Let's put up TREX-8656.1.3.TO.
08:27:45 Mr. Marshall writes back and says, "Yes, he knows
08:27:48 about confidentiality." That's what he wrote in response on
08:27:52 April 22nd, correct?
08:27:53 A. Yes.
08:27:54 Q. Let's go back to Mr. Mason's e-mail, TREX-3220.1.1.TO,
08:28:04 where he said, "We should be very cautious standing behind the
08:28:09 5,000 barrels a day figure."
08:28:10 I think you testified that you read Mr. Mason's
08:28:13 deposition; is that right?
08:28:14 A. Yes, I did.
08:28:15 Q. He testified that he was called on the carpet for sending
08:28:18 this e-mail, didn't he, sir?

A. Well, I don't know if those were his words.

Q. Let's put up pages 320, Line 16 to 321, line 17 of Mr. Mason's deposition:

"QUESTION: Okay. And then you had a meeting with Mr. Peijs on the morning of Saturday, May 15th?

"ANSWER: Yes.

"QUESTION: Is that correct?

"ANSWER: Yes, it is.

"QUESTION: What do you recall being discussed during that meeting with Mr. Peijs on the morning of Saturday, May 15th?

"ANSWER: Two things. One, he said, quote, 'We've got some new pressure data that we'd like for you to review, the 3100 psi.' And he also said, 'Next time you have an idea or a thought like this e-mail note, we would appreciate it if you would walk over and discuss it with us.'

"QUESTION: Did he describe to you what he meant by, quote, an idea or a thought like this, unquote?

"ANSWER: Well, I asked him what the problem with -- was with this note a number of times, and he said, quote, it's the big number, unquote.

"QUESTION: And by the, quote, big number, unquote, you're referring to the 100,000 barrels per day number?

"ANSWER: Yes.

"QUESTION: And did he tell you why writing about a

100,000 barrel per day number was problematic?

"ANSWER: No."

You read that testimony as part of your work in this case, did you not?

A. Yes, I read that, as well as the description of what he meant for why he sent the e-mail.

Q. This instruction to -- by Mr. Peijs to Mr. Mason not to put numbers like this in writing was not the only time that BP employees were told not to discuss big flow rate numbers; isn't that true?

A. I don't know. If you have another example, we can look at that.

Q. Let's put up TREX-9157.1.1.TO.

This is a May 5th, 2010, e-mail from Mr. Jasper Peijs to Kelly McAughan, is it not?

A. Yes.

Q. And again, Mr. Peijs is at the top of that chart over there, the executive assistant to the CEO; is he not?

A. Yes.

Q. And he says, "Both Tony and Andy have seen it and are impressed with the fast turnaround. This is exactly what they asked for. This information is sensitive, so please do not forward."

That's what he wrote, did he not?

A. Yes. He wrote that.

08:30:56 Q. Who was the BP CEO at that time? Tony Hayward, was it not?
08:31:01 A. Yes.
08:31:01 Q. And Mr. Inglis' first name is Andy, correct?
08:31:02 A. Yes.
08:31:09 Q. Do you see the subject line: "WCD plots"?
08:31:09 A. Yes.
08:31:12 Q. That refers to worst-case discharge plots, doesn't it, sir?
08:31:12 A. That's my understanding of WCD, worst-case discharge.
08:31:17 Q. Information about the Top Kill project was kept within a small circle of people, was it not, sir?
08:31:21 A. Can you be more specific?
08:31:28 Q. Let's put up TREX-9164.2.1.TO.
08:31:34 Did you read this document?
08:31:35 "We will continue to load into PI and provide no data access to anyone, and will wait for Paul Tooms to give approval for each user's access."
08:31:45 Did you read that as part of your work in this case?
08:31:47 A. I believe I've seen this before.
08:31:50 Q. And at the bottom you saw where they wrote, "Just want to make it clear that no one," in all caps, "is to get the data files from the Top Kill method that is being pumped from yesterday or today except for Paul Tooms' group."
08:31:55 You saw that as well, did you not?
08:31:57
08:32:02
08:32:03
08:32:06
08:32:10
08:32:13
08:32:17

A. Yes, I saw that as well.
Q. Did you read the deposition of Marcia McNutt?
A. I may have read portions of it.
Q. Let's put up page 464, lines 18 to 23.
MS. KARIS: Your Honor, I'm going to make an objection. Just to be clear, Dr. Ballard was offered as an expert to speak to what information hydraulic modeling can give you with respect to estimating flow. He was not put up to offer opinions about what information BP communicated to the government.
THE COURT: Okay. I overrule the objection.
EXAMINATION BY MR. BRIAN:
Q. Put that back on the screen, please.
You read where she was asked on line 18:
"QUESTION: And do you see the second line of his e-mail where he says, 'The purpose of the note was meant to put a limit on the people outside the circle of trust getting the data'?
"Do you see that, Dr. McNutt?
"ANSWER: I guess I'm not in the circle of trust."
Did you read the deposition of Admiral Landry?
A. I believe I've read portions of that as well.
Q. Let's put up page 642, lines 6 through 23.
"QUESTION, line 6: But we have gone through a number of documents today that BP did not share with you, correct?

"ANSWER: That's correct.

QUESTION: And that they did not share, you know, and through you, did not share it to the Chain of Command, correct?"

There is an objection.

"ANSWER: You've provided a number of documents that the Chain of Command or I did not see.

QUESTION: And BP was not being transparent in that regard, correct?"

Then there is an objection.

"ANSWER: And -- and -- with regard to those documents that you've shown me today, they were not being transparent."

Does the testimony of Admiral Landry or Dr. McNutt change any of the opinions you've given in this courtroom, sir?

A. No.

MR. BRIAN: Nothing further, Your Honor.

THE COURT: Redirect?

MS. KARIS: Yes, Your Honor.

Hariklia Karis on redirect examination of Dr. Ballard.

REDIRECT EXAMINATION BY MS. KARIS:

Q. Dr. Ballard, I want to step back. What were your opinions intended to do in this case? What subjects were you opining about?

A. Well, I was asked to review Mr. -- or Dr. Wilson's report, and respond to his opinions accordingly, or if needed, and I did.

Q. And were his opinions with respect to whether hydraulic modeling can inform a best estimate?

A. Yes.

Q. In connection with reviewing -- in connection with rendering your opinions as to whether hydraulic modeling can inform the question of a reliable flow rate estimate, did you look at the work that the Flow Rate Technical Group was doing with respect to estimating and informing the question of flow rate?

A. Yes. I did look at that work.

Q. And who was the head of the Flow Rate Technical Group?

A. I believe it was Ms. McNutt.

Q. Dr. McNutt?

A. Dr. McNutt.

Q. And did the Flow Rate Technical Group, at the end of May, issue an estimate as to what they believed, on behalf of the United States Government, the flow rate was?

A. Yes. I had reviewed a press release from Dr. McNutt that had described their methodologies and given an estimate.

Q. Did any of the methodologies that the Flow Rate Technical Group used rely on hydraulic modeling in order to come up with an estimate?

A. No. They used three different methodologies, and all of them were visual observation. In fact, she, in the press release, actually had to say that they came up with new methodologies because of the complexity and challenge that they had.

Q. Does the Flow Rate Technical Group's work and opinion and statement, publicly issued statement, support your opinion that you could not use hydraulic modeling to estimate flow based on data available through May 31st of 2001?

A. Yes.

Q. Let's look at D-23888.

Is this the press release that the government's Flow Rate Technical Group issued on May 27th, when they issued their preliminary best estimate of oil flowing from the Gulf of Mexico -- I'm sorry, from the *Deepwater Horizon* Macondo well?

A. Yes. This is the release.

Q. And read to us what the Flow Rate Technical Group says with respect to the ability to estimate flow based on data and information available at that time. First paragraph, please.

A. So the --

MR. BRIAN: Your Honor, I object to this as going beyond the four corners of his report. It was not one of the documents that he relied upon.

MS. KARIS: Your Honor, if I may respond. Mr. Brian

asked him about information communicated to the Flow Rate Technical Group. I made an objection that that was beyond the scope of what he was asked to look at.

This is directly in response to Mr. Brian's questions about what information BP provided Admiral Landry and to Dr. McNutt. He asked specifically about Dr. McNutt. This is Dr. McNutt's statement about what information was available and what you could actually do with that information. It's directly responsive to the cross.

THE COURT: I overrule the objection.

Go ahead.

MS. KARIS: Thank you.

EXAMINATION BY MS. KARIS:

Q. What does Dr. McNutt, on behalf of the United States Government, say in attempting to estimate flow? The first paragraph, please.

A. She says: "The FRTG used three separate methodologies to calculate their initial estimate, which they deemed the most scientifically-sound approach, because measurement of the flow of oil is extremely challenging, given the environment, unique nature of the flow, limited visibility, and lack of human access to BP's leaking oil well."

Q. And do you agree that based on the data and information available through the end of May, which is the period we looked at, measurement of the flow of oil was extremely challenging?

08:39:48 A. Absolutely.
08:39:48 Q. And Dr. McNutt goes on to say the various ways in which
08:39:55 they attempted to estimate flow.
08:39:59 Did any of this support your view that you could not
08:40:03 use hydraulic modeling for this purpose at that time?
08:40:07 A. Well, in my opinion, this directly supports it. As I
08:40:11 said, hydraulic modeling could not generate a likely estimate
08:40:14 or even a range of what it may be as Dr. Wilson says. And the
08:40:19 fact that you bring in the FRTG and all the scientists and
08:40:23 academics, they used three methodologies, hydraulic modeling
08:40:27 was not one of them.
08:40:28 Q. Now, if we can pull up 144757.1 -- I'm sorry. Let's start
08:40:36 first with 8868.1.1.
08:40:46 We have here an e-mail from Dr. McNutt dated May 23rd
08:40:51 to Peter Cornillon at me.gov [verbatim] copying Bill Lehr at
08:40:59 NOAA.
08:40:59 Is Mr. Lehr the gentleman from NOAA that you were
08:41:02 referring to earlier?
08:41:02 A. Yes.
08:41:03 Q. Dr. McNutt writes: "Thanks so much for sharing your
08:41:07 thoughts. Truly the scientific approach would be to begin with
08:41:11 an upper bound and lower bound and refine the lower limit up
08:41:17 and the upper limit down. But, indeed, if we said, for
08:41:20 example, that the upper limit was 80,000 barrels, the headline
08:41:25 tomorrow would be, 'New pollution oil rate 16 times faster.'

Remember when BP testified to Congress about a rate as high as 160,000 barrels? That rate was based on a calculation of an idealized formation with zero skin, example, the impossible well. And yet, that is the number the press picked up. They were just giving a theoretical upper bound, but, of course, that is what the press gravitated to."

Did Dr. McNutt, at this time, have information from the Flow Rate Technical Group with respect to trying to determine an upper and lower bound?

MR. BRIAN: Your Honor, I'm going to object to this. He testified yesterday that he's only an expert on hydraulic modeling. These last two exhibits go to other method of observation. They are not in his report and he expressly said yesterday he's not an expert on plume analysis, sheen analysis or any of these methods being testified to by Dr. McNutt.

MS. KARIS: If I may respond, Your Honor. Mr. Brian asked Dr. Ballard, over my objection, about information that BP communicated. And to the question of what information had BP provided and what information did the government have at that time. It's directly responsive to Mr. Brian's line of cross-examination.

MR. BRIAN: It's expressly not about hydraulic modeling.

THE COURT: I think the line of questioning was what information BP provided. I think you're now asking him what

other information the government might have had from other sources, it seems like. I sustain the objection.

EXAMINATION BY MS. KARIS:

Q. Dr. Ballard, at the time Dr. McNutt was attempting to understand the flow rate, had BP provided data with respect to the Macondo well to be used for the purpose of trying to understand how to estimate the flow?

A. Yes. For hydraulic modeling purposes, yes.

Q. And did you list the data that BP provided in your report with respect to what was available from the Macondo well and given to the United States government?

A. Yes. I list several pieces of data that would be needed to use hydraulic modeling.

Q. If we can look at 11905.17.1, please.

Mr. Brian asked you on examination about -- I'm sorry. Let's go back one. 11905.15.1.

Do you recognize this excerpt from your report?

A. Yes.

Q. You state in your report: "Dr. Wilson's report suggests an imbalance in access to data useful in hydraulic modeling. Dr. Wilson's report states that BP engineers had access to proprietary data regarding the reservoir and the engineered infrastructure at the well."

Did you look at what information BP's engineers provided to the government that was proprietary data regarding

08:44:49 the reservoir?
08:44:50 A. Yes.
08:44:51 Q. Now let's go to 11905.17.1.
08:45:00 Is this the list of data that BP provided to the
08:45:04 government with respect to information known about the well?
08:45:09 A. Yes.
08:45:09 Q. And does this data include fluid properties, temperatures,
08:45:16 pressures, all of the information BP had in order to perform
08:45:21 hydraulic modeling?
08:45:23 MR. BRIAN: Objection, form.
08:45:25 MS. KARIS: Let me rephrase, Your Honor.
08:45:28 EXAMINATION BY MS. KARIS:
08:45:29 Q. What does this information identify with respect to the
08:45:32 ability to perform hydraulic modeling?
08:45:37 A. So it identifies the inputs needed to do hydraulic
08:45:44 modeling. So you have got reservoir properties. You've got
08:45:47 fluid analysis, several fluid analyses. You've got pressures,
08:45:52 both pressures that they were taking, the initial pressure of
08:45:55 the reservoir. You've got the -- I believe they even
08:46:00 transmitted the drilling logs showing the potential net pay, as
08:46:05 well as the APD, or the Application for Permit to Drill, would
08:46:09 have had the Casing Program, so they would know what the
08:46:11 structure -- the casing -- by *Casing Program*, I mean what the
08:46:17 engineered structure of the well would have looked like before
08:46:20 the blowout.

So they would have had the information that BP had since this was transmitted.

Q. And what is your opinion as to whether, based on the known conditions and unknown conditions, whether you could rely on hydraulic modeling, based on this information, all of the information available to BP, for purposes of estimating flow?

MR. BRIAN: Objection, asked and answered. Cumulative.

THE COURT: I'll let him answer.

Go ahead.

THE WITNESS: So as I mentioned yesterday, there was definitely some information known to some extent, but due to the uncertainties and the things that you didn't know, hydraulic modeling could not tell you the likely estimate of the flow. It could tell you the most that it could flow, but couldn't inform you anywhere from zero to that range using hydraulic modeling alone.

EXAMINATION BY MS. KARIS:

Q. And had BP communicated to the government, including Admiral Landry, what it believed could be the most, that is, the upper bound, for what could be flowing from the Macondo well?

A. Yes. There were several communications about what the most was. In fact, I've seen -- I've seen communication from the government about what their estimates for the most that could be flowing from the well was also.

Q. And is that consistent with the data and information BP provided to the government about what the most is that could be flowing?

MR. BRIAN: Objection, Your Honor, this goes beyond the scope of his report. All he says in his report, in that footnote, is they provided data.

THE COURT: I sustain the objection.

EXAMINATION BY MS. KARIS:

Q. Now, Mr. Brian asked you about Mr. Mason's work in mid-May.

A. Yes.

Q. Let me get the TREX, one second. If we can pull up TREX-9156.6.1.

These are some of the charts Mr. Brian asked you about on cross-examination, correct?

A. Yes.

Q. Are there any figures in these estimates that are higher than the worst-case discharge that BP had provided to the government?

MR. BRIAN: I object, Your Honor, goes beyond the scope of his report. He only talked about the government providing data. That's all he said in the footnote that counsel showed him.

THE COURT: I sustain. I don't need an expert to tell me. I can look at the numbers and see that's less than 162,000

barrels, if that's your point, okay.

EXAMINATION BY MS. KARIS:

Q. Now, Dr. Ballard, Mr. Brian asked you about Admiral Landry's testimony in which she said she had not received some of the models that were performed by BP. Do you recall that line of questioning?

A. Yes.

Q. If we can pull up D-23238.

Did Admiral Landry receive -- did BP provide to Admiral Landry the key messages from Mr. Mason's work?

A. From my understanding, she didn't.

Q. And just so we're clear, if we can pull up 9156.7.1. 9156.7.1.

On the left-hand side, just this messages side. Was that slide the result of Mr. Mason's work in mid-May?

A. Yes. As mentioned, that was the purpose of the slide -- or the purpose of the work was to generate that, to look at the increase in flow, and then he also states what the upper -- those upper limits from the modeling that was -- that was calculated.

Q. And what does Mr. Mason's slide say with respect to those upper limits?

A. It's down in the note section. And it's actually, "If the BOP were removed, it could be as high as 100,000 barrels per day up the casing or as high as 55,000 barrels per day up the

annulus."

Q. Now if we can go back to D-23238, please.

Did you see Admiral Landry's testimony in which she received that slide plus additional estimate information, and then I asked her: "At the time you received this e-mail from Mr. Suttles, with the MC252 note plus the attachments, did you review both the document and the attachments, given you were asked -- you had asked Mr. Suttles for information?"

She responded: "I would have, in order of my business, looked at these."

Then I asked: "Did you personally rely on these for any purpose?"

And what was her answer?

A. She said, "No." Because they were getting ready to stand up to the FRTG, "and I was deferring to that group to be the expertise for estimating what the flow rate is."

Q. And is the FRTG, the Flow Rate Technical Group, Dr. McNutt's group that was working on the flow rate at this time?

A. Yes.

Q. Let's change topics. You were asked about an e-mail from Mr. Lynch, Mr. Mall, and Mr. Mason regarding *tight hold*, I think is how Mr. Brian referred to it, on data from the RITT collection. Do you recall that generally?

A. Yes.

Q. I don't have all the exhibit numbers here as Mr. Brian was going through them. But, first of all, the data that was referenced in each and every one of those documents, the RITT data, did BP, realtime, provide that data to the United States government?

MR. BRIAN: I object, Your Honor. That goes beyond the four corners of his report. It's not what he said.

MS. KARIS: Your Honor, he was asked about Mr. Lynch saying "tight hold," Mr. Mall saying "tight hold."

THE COURT: All right. I overrule the objection.

MS. KARIS: Thank you.

THE WITNESS: So from my view -- or from my understanding, the government got it realtime. I personally spent time in the data collection room in the incident command, and it was a very open room. And I talked to the engineers that were collecting that data, and they said government officials came in routinely.

EXAMINATION BY MS. KARIS:

Q. And did you personally participate in providing the United States government with the RITT data that is referenced in Mr. Lynch's e-mail, Mr. Mall's e-mail and Mr. Wood's e-mail?

A. Did I?

Q. Yes.

A. I didn't personally communicate that data, no.

Q. Were you aware of individuals who did provide that data?

A. Yes.
Q. You were asked about Mr. Tooms' e-mail regarding a circle of trust. Do you recall that e-mail?
A. Yes.
Q. And did that e-mail refer to realtime Top Kill data, data that was generated at the time of Top Kill?
A. From my understanding, that was.
Q. And are you aware of whether the government received realtime the Top Kill data that was referenced in Mr. Tooms' e-mail under the circle of trust?
MR. BRIAN: I object to foundation, Your Honor.
THE COURT: I sustain the objection.
EXAMINATION BY MS. KARIS:
Q. Dr. Ballard, do you know whether -- what information the data -- the government received realtime regarding Top Kill?
A. Yes. I believe they received all the data.
MR. BRIAN: Objection, Your Honor, foundation. That was a yes or no.
THE COURT: What's the basis of the -- how do you know this?
THE WITNESS: I've talked to Mr. Tooms and read his testimony.
THE COURT: I sustain the objection.
EXAMINATION BY MS. KARIS:
Q. Yesterday you were asked whether you spoke to Mr. Suttles,

Mr. Inglis and Mr. Peijs in connection with all of the work that you've done in the case.

Did you speak to those individuals?

A. No, I didn't.

Q. Why not?

A. Well, because the intent of my -- forming my opinion was around the hydraulic modeling and what it was and was not capable of during the April and May timeframe. Those folks didn't do any hydraulic modeling, so there would be no need for me to talk with them.

Q. Did you speak to Mr. Lockett in connection with work that he was doing?

A. Yes.

Q. If we can pull up 9446.1.1.

Mr. Brian asked you about this e-mail yesterday from Mr. Lockett on May 3rd titled "Best Estimate."

Do you recall, first, the general questions?

A. Yes, I do.

Q. And you were asked whether Mr. Lockett said to you, this was not a best estimate. Do you recall that question?

A. Yes.

Q. And you began to tell him what Mr. Lockett told you. And Mr. Brian said he didn't want to hear what he told you, just whether he answered the question of whether this was a best estimate.

Tell the Court what Mr. Lockett told you in connection with this work stream.

MR. BRIAN: Objection, hearsay.

MS. KARIS: Your Honor, he's an expert. And he was specifically asked by Mr. Brian about what Mr. Lockett told him.

MR. BRIAN: Not an expert in this area. This is hearsay, Your Honor. That's all he's being asked to do.

THE COURT: I sustain the objection.

EXAMINATION BY MS. KARIS:

Q. In connection with rendering your opinions in this case, are you familiar with Mr. Lockett's work?

A. Yes.

Q. And what did you do -- did you rely on this work in rendering your opinions in this case?

A. Yes, I did.

Q. And can you tell us what you did in order to understand Mr. Lockett's work to support your opinions in this case.

A. So I read the e-mail. I read Mr. Lockett's transcript or his testimony. I've also reviewed the Excel spreadsheet that he put all of his results in, and reviewed the models, the OLGA models that he actually used to generate these.

Q. And based on your review of the information, does Mr. Lockett's work provide a best estimate of flow rate using hydraulic modeling?

A. No.
Q. Why not?
A. Well, he says it right in the beginning in his bullet points. He's got three different methodologies for actually -- if you had data and you knew more information about the well, he's proposing three methodologies for, if you had all of that, you could come up with a best estimate.

And he's -- like I said, he states in there, we don't know what the end of the pipe looks like, but if we did and we actually could calculate the velocity, then that would give us a point to be able to estimate.

The same thing with the temperature. If we had a reliable temperature and we knew the U value assumed for the tubing, which is a heat transfer thing, which would be dependent on what restrictions were in the well and what flow path it is, then you would be able to come up with another estimate.

Likewise with pressure, if you understood the productivity of the formation, which goes back to if you knew the net pay that was exposed, the skin, and other reservoir properties, you could run the model, and if you had a pressure, come up with an estimate.

And then the best estimate would be, if all those line up to be around the same, then you would say it's somewhat conclusive.

Q. Did Mr. Lockett have either the productivity, the net pay, or any of those other variables that you identified would be necessary in order to come up with the best estimate?
A. No. Those are the uncertainties that I was discussing yesterday.
Q. And how does Mr. Lockett's work then support your opinion that BP did not have the tools using hydraulic modeling to estimate flow at this time.
MR. BRIAN: I object. Asked and answered. Cumulative.
THE COURT: I think it is.
MS. KARIS: I'll move on, Your Honor.
EXAMINATION BY MS. KARIS:
Q. You were also asked on cross-examination about 9313.1.1. If we can pull out the bottom e-mail there.
Mr. Brian told you yesterday that he had asked Mr. Dupree about this e-mail, and then asked you whether, to get 700 psi depletion from 4/20 to 20 -- 4/20/2010 to 15 May 2010, the rate required is 86,000 barrels per day. Does this information from Mr. Liao inform you as to what the best estimate of flow rate is?
A. No, not at all.
Q. Why not?
A. Well, from my understanding at this time, the PTB had dropped from 3800 psi to 3100 psi, which is the 700 psi. There were three potential reasons for that: One was the gauge may

be acting up; two, it could have been maybe reservoir depletion; and, three, it could have been erosion in the BOP stack.

So this is one of those, what I would call -- similar to the buckets I had yesterday, this was a what-if, what if the reason that pressure gauge dropped by 700 psi was due to reservoir depletion, what would the rate have to have been for that to happen?

So they came up with a rate of 86,000. Then you would compare that against your worst cases that you could actually calculate with hydraulic modeling to determine is that within reason.

In fact, I believe it was a couple days later, they wound up finding out that it was not due to depletion, it was due to the pressure gauge acting up.

Q. So you were asked whether BP provided this specific document to the government. What information did BP acquire to disprove what Mr. Liao was proposing here?

I'm sorry, let me ask this. I'll withdraw the question.

With respect to the question of whether BP provided Mr. Liao's work to the government -- do you recall Mr. Brian asked you that?

A. Yes.

Q. -- did information become known within days that proved

that Mr. Liao's 86,000-barrel calculation was not based on depletion?

A. Yes. Let me make sure I'm clear. The 86,000 would have been -- was the number that, if it were to due to depletion, that's what the rate would have had to have been, but they realized it wasn't depletion that caused that.

Q. So does this estimate in any way support what a reasonable bound range would be at that time?

A. Well, it's not an estimate. If I remember right, at this time the upper end of what the hydraulic modeling suggested, that this was above some of those scenarios for potential flow paths.

Q. Can we pull up 98 -- I'm sorry 8899.2.1. 8899.2.1.

MR. BRIAN: I'm going to object to this. It's not one of the documents identified by his having relied on it.

MS. KARIS: If I may respond, this is attached to the deposition -- depositions that Mr. -- Dr. Ballard has reviewed. Mr. Brian.

THE COURT: So what is this?

MS. KARIS: He was asked this morning about --

THE COURT: No, what is this?

MS. KARIS: It's the video of Admiral Landry announcing what the basis was for the 5,000 barrel estimate.

Mr. Brian began this morning by questioning Dr. Ballard and saying, you told us yesterday that the 5,000

was NOAH's estimate. What was your basis for saying it was NOAA's estimate?

I'll move on.

EXAMINATION BY MS. KARIS:

Q. Dr. Ballard, final question, based on all of the data that you've reviewed, including the information that Mr. Brian asked you about, in your opinion and your expertise, did any of that inform BP as to a best estimate at that time?

A. No.

MS. KARIS: I have nothing further, Your Honor.

THE COURT: Thank you, Dr. Ballard.

Call your next witness.

MR. BROCK: Your Honor, at this time BP would like to play six short videotapes. They total around 17 minutes. We'll have David Barnett from Wild Well Control, Vice-President of Engineering; Admiral Thad Allen, 30(b)(6) for the Unified Area Command; Admiral Mary Landry, the Federal On-Scene Commander -- Coordinator, excuse me, and she's testifying about flow rates; Patrick Campbell, from Wild Well Control, testifying about Top Kill and the capping effort -- Commander Richard Brannon, the Federal Incident Commander from Houston, testifying about attendance at meetings in Houston with BP and government officials; and, Steven Chu, Secretary of Energy, talking about his involvement in the source control.

THE COURT: You said a total of about 17 minutes?

09:06:11 MR. BROCK: 17 minutes, yes, sir.
09:06:12 THE COURT: Okay.
09:06:16 (WHEREUPON, the above referenced videotapes were played.)
09:06:16 (WHEREUPON, the videotape is stopped.)
09:12:41 MR. BRIAN: Your Honor, we don't believe this part of the video was disclosed and is properly played. I'm not the video clip expert. Maybe Ms. Godley can address that with the Court. We think this is improper, the interview of Mr. --
09:12:58 THE COURT: Well, I assumed you all had worked out any objections to video clips.
09:13:00 MR. BRIAN: I'm told we haven't on that piece.
09:13:06 MS. GODLEY: This is Tammy Godley for Transocean on behalf of the aligned parties.
09:13:10 We exchanged what would be shown, actual videos. This was not exchanged. What was exchanged was Admiral Allen listening to this being played, just as he listened to Mr. Brock read from his prior statements, and then he responded to that. We were not shown that they would cut into the video the actual part of the interview.
09:13:33 MR. BROCK: Your Honor, in response for BP, at the deposition, I asked -- I said to the witness, roll the videotape. The tape that is being played is an exhibit to the deposition. It was played for Admiral Allen. He was watching it play. It's the exhibit that's in evidence. Then I asked

him if that's -- if that is him, and is that what he said.

So that's what we are playing. We're playing the videotape that was played at the deposition in response to questions to Admiral Allen.

I think the complaint is that they want us roll his voice as he's looking at the screen. I'm showing you what he was looking at in the deposition.

THE COURT: Well, I think the complaint is that they said it wasn't disclosed that you were going to play that video clip.

MR. BROCK: I did disclose that I was playing this. I disclosed that I was playing this exhibit, which is Admiral Allen watching the tape.

THE COURT: Is that the extent of it? Is it over?

MR. BROCK: I think it's over. Close to it.

MS. KARIS: Just a little more.

MR. BROCK: Just a little more.

Admiral Allen is sitting in the deposition. He is watching this tape. Then he's asked a question, is that what you observed.

I think what they are saying is they would prefer me to have Admiral Allen look at the screen, where you can only hear the audio.

THE COURT: Well, I guess, first, it wasn't clear to me that's what was going on. In other words, I know this is an

edited deposition, but it looked like just something that you all tagged onto this deposition testimony.

MR. BROCK: No, no. This was played at the deposition for Admiral Allen in the courtroom on the screen about that big.

THE COURT: All right. I'll overrule the objection.

Go ahead. So you're going to follow up with a question to him at the end.

MR. BROCK: I hope I do.

(WHEREUPON, the videotape resumes.)

(WHEREUPON, the videotape concluded.)

MR. BROCK: Your Honor, our next witness is Mr. Iain Adams, and he is here ready to go.

THE COURT: Okay, good.

THE DEPUTY CLERK: Raise your right hand. Do you solemnly swear that the testimony you are about to give is the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

IAIN ADAMS

was called as a witness and, after being first duly sworn by the Clerk, was examined and testified on his oath as follows:

THE DEPUTY CLERK: Please take a seat. State and spell your name for the record.

THE WITNESS: My name is Iain Adams. That's I-A-I-N

Adams.

MS. KARIS: Your Honor, may I proceed?

THE COURT: Yes.

DIRECT EXAMINATION BY MS. KARIS:

Q. Good morning, Mr. Adams. Hariklia Karis for BP. For the record, I have you on direct examination.

Could you tell the Court, what is your occupation?

A. I'm managing direct of a company called Norwell.

Q. What is Norwell?

A. Norwell is a well engineering and project management, drilling project management company based in Aberdeen.

Q. Where does Norwell operate?

A. We operate internationally. We've worked in over 30 different -- we've managed drilling projects in over 30 different countries worldwide.

Q. If you'll look at D23784.1, please.

Mr. Adams, does this demonstrative that you've prepared accurately summarize your training and experience?

A. Yes, it does.

Q. Okay. Can you give the Court an overview of that training and experience that you've had?

A. I graduated from Aberdeen University in 1979, with a mechanical engineering degree. Joined Chevron, at that time as a trainee drilling supervisor, posted here in Louisiana for a year. Moved on up to drilling supervisor with Chevron, worked

for them for nine years. Was in California for a couple of years, Alaska, Holland, Denmark, Spain, the North Sea, all with Chevron.

Then left there, went consulting for a few years as drilling manager, drilling superintendent.

Joined Norwell at that point in 1995, and worked in a management position with them, and then became managing director with them.

So since that time, we've drilled over 200 wells worldwide, managed the entire projects in different countries. We've -- I say "we" in terms of myself and my role with Norwell, but we've managed technical projects in about 46 different. So we extensively work internationally.

Q. On behalf of the court reporter, I'm going to ask you to speak a little louder and a little slower.

A. I'm sorry.

Q. No problem. If you could just speak into the mic.

You said you're Managing Director of Norwell currently?

A. That's correct. Yes.

Q. What are some of the projects that you are currently working on as managing director?

A. Operationally, we've got two rigs operating in India right now, both offshore. We've got an offshore unit working in Congo, an onshore unit working in Kenya. We're engaging in

quite a lot of ongoing well engineering and technical assistance projects.

Q. Go ahead.

A. Okay, sorry.

In terms of the deepwater specific applications, we have been in the drilling management role for over 50 what you would call ultra-deepwater wells, so that's in over 5,000 feet of water. That's been an ongoing project. We've currently still got one 6th-generation drillship working in 8,000 feet of water at the moment.

Q. Does Transocean own any of the facilities that you are currently managing?

A. Up until recently, three. Two at the moment, yeah. One in India, and one in West Africa.

Q. Does Norwell conduct what are called well control risk reviews?

A. Yes, we do.

Q. What is a well control risk review?

A. It's a guidance document for a setting up how we would manage a well control incident on a project. So we conduct them on behalf of our own projects. We've done several hundred of those. We also assist other operators set up their own.

Q. Okay. Does Norwell also prepare well control contingency plans?

A. Yes, we do. Again, to a similar format. We do them for

ourselves, and we assist other operators either update theirs or put them in place if they don't have them.

Q. To be clear, what is a well control contingency plan?

A. It's a contingency plan. It's a way of a setting up a structure so that a company can be prepared in the event there's a well control incident. So it identifies potential equipment and services available.

Q. As a result of your function as the managing director of Norwell, do you have familiarity with what equipment exists in the industry for well control events?

A. Yes, I do. I mean, that's pretty much all I've done for the last 35 years. The majority of my -- in fact, all my career has been drilling, in the management side, and the majority of the work that we do is offshore.

Q. Can you tell the Court a little bit about your experience in evaluating offshore blowouts and blowout responses?

A. In recent years, I've been involved in a review of the *Montara* blowout down in Australia. Also, the *KS Endeavor* in West Africa. It's a blowout and rig sinking.

Then, more recently, we assisted in the -- from the drilling contractor side for the *Elgin/Franklin* incidents in the North Sea.

Q. Do you have any experience doing well troubleshooting?

A. We do a lot of well troubleshooting actually. It's a -- because of the number of wells that we manage, we've got a lot

of experience in that side of it. Also, incident assistance.

So we've pretty much got a continuous stream of work ongoing. That's one of my main remits is if companies have wells that are having difficulties -- it's not necessarily just well control, it could be operational problems -- we get -- I get called in to assist, try and get the well back on track, trying to get operations back on track.

So that can be just general massive cost overruns, operational difficulties. I think this year, to date, I've personally been involved in five well control incidents. So that's kind of an ongoing scope. So, yes, we do quite a lot of that.

MS. KARIS: At this time, Your Honor, I would like to tender Mr. Adams as an expert in deepwater drilling -- deepwater drilling and troubleshooting for complex well control incidents.

THE COURT: Anyone interested on this side?

MR. DOYEN: Your Honor, Mike Doyen for Transocean and the aligned parties.

We'll take up some challenges on cross.

THE COURT: So you don't challenge his qualification?

MR. DOYEN: Not in the way she described it, as I understand it. We'll be talking about his qualifications on cross.

THE COURT: I'll accept him as an expert. Go ahead.

09:33:18 MS. KARIS: Thank you, Your Honor.
09:33:18 EXAMINATION BY MS. KARIS:
09:33:20 Q. If you'll look at D23785.1, please.
09:33:33 Dr. Adams, have you done some work in order to render
09:33:37 some expert opinions in this case?
09:33:39 A. Yes, I have.
09:33:39 Q. Can you tell the Court what work you did in order to
09:33:44 render the opinions you've reached in this case?
09:33:47 A. The primary initially was to conduct an independent review
09:33:52 of BP's participation in source control. So that was the
09:34:00 first, the principal piece of work.
09:34:01 Then, in addition to that, and subsequent to that,
09:34:05 with the rebuttal report was also responding to some of the
09:34:08 aligned party reports. Specifically, it was a -- the Top Kill
09:34:18 operation was properly investigated, the BOP-on-BOP option,
09:34:23 whether or not that could have preceded Top Kill or should have
09:34:27 preceded Top Kill, and then also specifically if BP had had
09:34:32 access to a prebuilt capping stack could the well have been
09:34:38 secured in a week or a few weeks of the incident. Those were
09:34:41 the key initial aspects.
09:34:42 Q. Why did you limit your opinion with regard to a prebuilt
09:34:47 capping stack to whether it could have been secured within a
09:34:49 week or a few weeks?
09:34:50 A. That was an assertion -- not an assertion -- a statement
09:34:55 in the expert -- the aligned party expert statements or

reports.

Q. I'm sorry, we'll get into each of those, but just as an overview, your opinions pertain to Top Kill, BOP-on-BOP. They also include consideration of the capping stack.

A. That's correct.

Q. Then the issue of whether the well could have been shut in within a couple weeks, as the aligned parties contend?

A. That's correct.

Q. All right. We can look at D23831.1, please.

Mr. Adams, can you tell the Court how you went about reaching the opinions that you've reached in this case.

A. Yes, I can. I applied kind of the same approach as we would have -- or I would have had I been called in to assist in a troubleshooting incident. So it's -- I kind of came in as an independent reviewer and conducted a realtime on-the-ground approach to it.

So the intention was that to review it with the eyes of the team on the ground at the time, look at the data they had available to them, the unknowns that were -- existed at the time, and evaluate the decision that the team made based on those unknowns and the data they had. That was the primary focus.

Q. In your review of the information that was available, did you identify various unknowns that BP confronted in attempting to respond to the *Deepwater Horizon* --

09:36:52 A. Yes, I did.
09:36:53 Q. Can you just give the Court an overview of what some of
09:36:56 those unknowns were that presented challenges to responding to
09:37:00 the incident.
09:37:02 A. In any -- in any operation, you are always juggling knowns
09:37:08 and vary degrees of unknowns, particularly when you have an
09:37:14 incident of this type. Sometimes you end up having to make key
09:37:17 decisions more on what you don't know than what you do know.
09:37:23 So one of the big ongoing concerns on this one, I
09:37:28 guess, was flow rate certainly was a key one. That's been a
09:37:32 big discussion point since as well. But that was -- it was
09:37:36 apparent that they were working in an environment where
09:37:38 flow rate was -- was an unknown, and decisions were made based
09:37:44 on that.
09:37:44 Q. Was the condition of the BOP one of those unknowns?
09:37:48 A. The condition of the BOP, the condition of the flow path
09:37:53 down the well, which are key things, obviously, because the
09:38:00 very fact the BOP hadn't sealed, you're then into an ongoing
09:38:07 evaluation and consideration of all the scenarios that might
09:38:12 have occurred. So yes, that was a key unknown.
09:38:17 Also, a large part of the decision process you make
09:38:22 at these times is trying to evaluate the various scenarios that
09:38:27 people present to you. So there were different scenarios and
09:38:32 different options for where the flow was coming up the well, as
09:38:34 you say where the -- what the flow path through the BOP was,

and how those unknowns impacted the potential scenarios they were trying to develop to solve it.

Q. So now does the fact that there were a variety of unknowns affect the time that it takes in order to respond to an incident such as the one at Macondo?

A. Very much so. Because the data evolves over a period of time, so you quite often start with some basic assumptions. You start making decisions based on the best information, the best data, the best assumptions you have at that time. As more information comes in, your response, your scenario and even your chosen option might evolve -- not might evolve, almost certainly will evolve. So, yes, your response to that will change and evolve.

The other key thing, also, because of the unknown aspects, mitigating the risks that they pose is critical. So you quite often have to make a decision or should make a decision based on ensuring that you don't make -- well, actually, you don't make it worse has been a commonly used statement. So yes, the unknowns evolve with the process.

Q. Based on your review of the information in this case, were there -- did those unknowns, such as the flow path, the condition of the BOP, the condition of the reservoir, were those some of the considerations that BP had to take into account in responding to this incident?

A. Absolutely, yes, definitely.

09:40:33 Q. Did you evaluate the prudence and the care and diligence
09:40:39 within which BP proceeded in light of those unknowns?
09:40:43 A. That was a large portion of what I did do in my review,
09:40:48 yes.
09:40:48 Q. So if we can go back to D23785.1.
09:41:02 Now, in a prior slide, your last bullet was "took
09:41:06 account of what was known and unknown at the time when critical
09:41:09 decisions had to be made."
09:41:10 In light of your testimony about having to take that
09:41:13 information into account, what opinions do you have with
09:41:18 respect to Top Kill, just as an overview right now?
09:41:21 A. I'm sorry, could you repeat?
09:41:23 Q. Sure. In light of the fact that there were these knowns
09:41:25 and unknowns that BP had to account for in its going forward
09:41:29 strategy, can you tell the Court what your opinion is with
09:41:33 respect to Top Kill.
09:41:36 A. The Top Kill procedure had identified risks and rewards.
09:41:49 The obvious very, very positive upside was if Top Kill had been
09:41:56 successful, it would have killed the well. So the reward
09:42:03 aspect of it, regardless of what people's opinions on the
09:42:07 chance of success, the reward aspect was pretty darn clear. It
09:42:12 could have killed the well.
09:42:13 The risk side of it, the potential downside, there
09:42:21 were risks identified. One of the key concerns throughout the
09:42:25 process was would a procedure -- would an option eliminate

09:42:32 another option.

09:42:33 So one of the positives about the Top Kill procedure
09:42:36 that they had implemented, it didn't jeopardize the BOP-on-BOP
09:42:42 option. So that was a positive step or was a reason the
09:42:49 sequence event was.

09:42:51 The other key one was there were multiple risks
09:42:54 identified. As you go through a risk process, you identify
09:42:59 many risks. That's why you do it. There were several key
09:43:01 ones. There are a few big risks associated with it, and they
09:43:05 were identified, and mitigation steps were put in place before
09:43:08 they started.

09:43:08 Q. Given the number of knowns and unknowns, did that affect
09:43:13 the amount of time it took in order to properly assess and risk
09:43:17 mitigate a source control decision such as Top Kill?

09:43:22 A. It always takes time to put those steps in place, if you
09:43:26 can do it properly. I think one of the -- I think the concerns
09:43:31 or one of the natural instincts in these incidents is to try
09:43:35 and implement it as rapidly as possible, which is
09:43:40 understandable, but that doesn't necessarily mean that you've
09:43:44 addressed it on the downside.

09:43:46 So any procedure like this, if you're going to risk
09:43:51 mitigate it, it wouldn't necessarily be -- appear to be as fast
09:43:55 as it could be done. So it's a yes.

09:43:57 Q. In your opinion, did BP's approach to Top Kill properly
09:44:02 mitigate risks prior to being implemented?

09:44:08 A. Yes, it did.
09:44:10 Q. Did the knowns and unknowns and the need for proper risk
09:44:13 mitigation establish that BP, in your opinion, proceeded in a
09:44:21 careful and prudent fashion?
09:44:23 A. I certainly think that. If you look at the procedure and
09:44:26 look at the implementation of that, I think that can be said.
09:44:29 Q. New, let's talk about, again, overview, because we'll get
09:44:31 into the details.
09:44:33 The second opinion here, BOP-on-BOP option could not
09:44:36 have proceeded prior to Top Kill. Again, in light of the
09:44:42 knowns and unknowns, can you tell the Court why your opinion is
09:44:46 that BOP-on-BOP could not have proceeded prior to Top Kill?
09:44:51 A. I think -- and, again, part of the way they did the review
09:44:57 was first to establish when equipment was available, what the
09:45:00 actual timelines were based on firm reports as possible, so
09:45:05 daily reports, operational reports.
09:45:07 In the course of that review, it was apparent that
09:45:11 the BOP-on-BOP wasn't physically ready for Top Kill. That's --
09:45:15 I think that's -- it's certainly -- in the course of my review,
09:45:21 I'm comfortable with that.
09:45:24 Q. We'll get into the details, as I said, shortly, but to
09:45:29 summarize, in your opinion, was BP's recommendation to proceed
09:45:33 with Top Kill prior to BOP-on-BOP consistent with prudent and
09:45:39 careful practice?
09:45:40 A. I think it was. That's a yes.

09:45:42 Q. Your last opinion there, if BP had access to a prebuilt
09:45:48 capping stack in April of 2010, the Macondo Well could not have
09:45:51 been closed within a week or a few weeks. Can you give us a
09:45:56 summary for why you reached that opinion.
09:45:59 A. I think the main point there is that there were risks
09:46:04 associated -- well, there is always risks, but the risks
09:46:08 associated with the well, if a prebuilt capping stack had been
09:46:13 installed the way the aligned parties suggested, in a week or a
09:46:17 couple of weeks, you had to basically ignore the key risks of
09:46:23 the well integrity and the installation vessels.
09:46:27 Q. So leaving aside the issue of whatever equipment existed,
09:46:30 was it necessary to assess the risks presented by those knowns
09:46:34 and unknowns, mitigate those risks, before you take any such
09:46:39 action?
09:46:39 A. I think that's not just in Macondo, that's in any prudent
09:46:45 drilling operation or well operation. So it's a yes, very much
09:46:48 so.
09:46:48 Q. Did BP take effort or put in efforts to carefully assess
09:46:54 those risks prior to putting forth any option for closing in a
09:46:58 well?
09:46:59 A. Certainly. Again, from reviewing the peer review data,
09:47:03 the assessment data and the operational procedures that were in
09:47:06 place to do the implementation, yes, I would say so.
09:47:09 Q. Now, after --
09:47:18 I'm sorry, if we can pull up 11738.1.2.

09:47:30 Mr. Ballard [verbatim], are these the reports, both
09:47:32 the opening report and the rebuttal report, that you prepared
09:47:34 that set forth your opinions and the basis for those opinions?
09:47:38 A. Yes, it is. Yes, they are.
09:47:44 Q. If we could now go to D23788.1.
09:48:01 I think you already covered some of these principles,
09:48:03 but I want to ask you briefly about them as an overview of your
09:48:06 opinions.
09:48:08 The don't make it worse principle, what was your
09:48:11 understanding of what that principle was and how it affected
09:48:15 source control decisions?
09:48:17 A. It's -- it came up -- I've heard it quite a lot this week,
09:48:23 actually, as well, but it came up in the interviews I had with
09:48:27 personnel. I saw it in a lot of the documentation and -- both
09:48:30 in the planning and procedural side.
09:48:35 What it did was it kind of -- it gave a -- it gave
09:48:40 any thoughts -- a guiding, guiding principle to the way they
09:48:43 should operate. It's -- it's only a couple of words, but it
09:48:49 was apparent that they did follow that very much.
09:48:54 What it was is a philosophy that -- make sure before
09:48:59 you proceed that the steps you've put in place, the mitigation
09:49:04 that you've put in place and the risks you've identified have
09:49:09 been, where practical, mitigated, minimized. If you're going
09:49:14 to take a step, do consider the -- it could still get worse.
09:49:21 So horrendous as the situation is, it's always possible to make

it even worse.

So that was a guiding principle throughout. It certainly seemed to be apparent that it was followed, and it was -- it drove the whole risk mitigated approach.

Q. Did the principle of don't make it worse affect the sequencing of source control events, as well as the amount of time it took in order to implement various source control options?

A. I think inevitably it did because it's a case in point, I guess, back to the previous slide on could you install something in a week? If risks were totally ignored, if you just could rush headlong into it, obviously your timeline would vary.

So a case in point to follow would be the BOP-on-BOP installation. If you identify that there's a significant risk has been identified that makes that a less favorable option or a less wise approach, you're faced with a judgment call. Do you just go ahead and do it anyway, keep your fingers crossed and hope that it works, or do you take a step back and potentially go a slightly different route that might take longer. So yes, I think it does affect it.

Q. Based on your review of the material in this case, which approach did BP take?

A. They did very much, and I guess publicly and openly, took the risk mitigated approach.

09:51:02 1 You have to be able to justify that. If you make
09:51:04 2 that judgment call, you know there will be times where you have
09:51:09 3 to justify decisions that you made, why did you take the slower
09:51:12 4 option when you could have taken the faster one. If the faster
09:51:15 5 one is identified to be significantly high risk, there is a
09:51:22 6 justification that you need to the different route.
09:51:26 7 Q. Now, you referenced interviews of personnel who
09:51:30 8 consistently told you this don't make it worse principle. I
09:51:33 9 failed to ask you whether, in reaching your opinions, you spoke
09:51:35 10 to folks who were involved in the source control response?
09:51:39 11 A. Yes, I did.
09:51:39 12 Q. For what purpose did you speak to them?
09:51:42 13 A. It was mainly for clarification. There was obviously a
09:51:49 14 vast wealth of data to review, information to review, and you
09:51:52 15 whittle down through it to make decisions and decide where
09:51:57 16 there are potentially gaps.
09:51:58 17 So it was useful for me to talk to individuals,
09:52:04 18 partly to get clarification of some points, and also to get a
09:52:07 19 little bit of a steer for possible areas that I had missed or
09:52:10 20 other things to look at. So it was a useful process.
09:52:13 21 Q. In those interviews that you identified, did the guiding
09:52:17 22 principle of don't make it worse, was that one of the
09:52:21 23 principles that those individuals told you they followed?
09:52:25 24 A. That was -- that was one of the things that struck me,
09:52:27 25 actually, when I was talking to them all, was -- I think that

09:52:31 1 came out in probably every conversation. So, yes, it was very
09:52:35 2 apparent.
09:52:36 3 Q. Now, the second opinion here, overview of your opinions,
09:52:40 4 is the scale of BP's source control engineering activities were
09:52:47 5 unparalleled. Tell us what you mean in connection with that
09:52:51 6 opinion.
09:52:51 7 A. I think, obviously, the financial side of it is not for a
09:52:55 8 second saying spending $1.6 billion is a good thing. But what,
09:53:01 9 again, was apparent was -- and this came out both in interviews
09:53:04 10 and in the course of reviewing the documentation -- was that
09:53:09 11 funding and resourcing was never an obstacle. It was -- it was
09:53:15 12 very much apparent that whatever it took, that was available,
09:53:22 13 and not to consider the cost aspect of it, which then obviously
09:53:28 14 opened up the resource for the external service company input,
09:53:40 15 the industry input, the ability to source and resource vessels
09:53:44 16 for the intervention. So it was just the sheer scale of it.
09:53:51 17 Q. As a result of those efforts, BP's efforts being
09:53:58 18 unparalleled, did that result in the industry being involved in
09:54:05 19 these source control responses?
09:54:06 20 A. I think they were very much involved in it from a service
09:54:11 21 sector and also from other oil companies. So there was
09:54:15 22 participation from across the field.
09:54:18 23 Q. Did that also result in a request for any and all
09:54:22 24 equipment, materials, engineering knowledge that existed at the
09:54:27 25 time to respond to this incident?

09:54:30 A. Again, from -- certainly from information I reviewed, it
09:54:34 was apparent that there was an open request for support,
09:54:40 equipment, and assistance that could be provided from the
09:54:44 industry.
09:54:46 Q. Your third overview opinion I think we've covered, but the
09:54:54 aligned parties claim the well could have been shut in in a
09:54:58 matter of weeks is incorrect. Then you state under there, the
09:55:02 aligned parties' timeline completely ignores risks of
09:55:05 environment and safety of the intervention vessels and
09:55:08 personnel. What are you talking about there?
09:55:10 A. Again, it's a -- you have to consider the risk of the
09:55:17 operations that were conducted, especially in the backdrop of
09:55:20 what's just occurred.
09:55:21 So, to say that you could have closed the well -- to
09:55:26 say that one could have closed the well in in a week of the
09:55:32 initial incident is just not correct. It doesn't take into
09:55:36 account all the unknowns that occurred as a result of the
09:55:41 incident. It doesn't take into account the unknowns of the
09:55:46 installation of the kit, it doesn't take into account the
09:55:49 unknowns of the well integrity.
09:55:52 There is a list of things that that didn't account
09:55:55 for. So, no, I don't agree with that.
09:55:59 Q. Let's talk about some of the decisions that were made in
09:56:03 connection with the source control efforts on which you have
09:56:06 reviewed and opined.

09:56:07 You told us earlier as an overview that it was your
09:56:10 opinion that Top Kill was properly risk mitigated.
09:56:15 We can now look to D23791.1.
09:56:27 Why in your opinion was it appropriate and prudent
09:56:29 for BP to recommend the Top Kill operation?
09:56:36 A. I think partly, as I've said, the balance of risk and
09:56:42 reward was appropriate. The whole point was to be able to kill
09:56:49 the well and stop the flow.
09:56:51 The Top Kill process, in its entirety, had that
09:56:57 potential. Obviously, it wasn't a guaranteed thing, but it had
09:57:02 a significant -- a significant potential to kill the well.
09:57:07 The key things that were important were would trying
09:57:16 it, would attempting it jeopardize subsequent operations?
09:57:21 Would the attempt jeopardize Top Kill or make the situation
09:57:26 significantly worse?
09:57:27 In that process, they identified areas that it could
09:57:31 do that, it could make it worse. Mitigations were put in place
09:57:36 for that. So that procedure was a robust one, and it was
09:57:43 implemented.
09:57:44 Q. You mentioned that BP did identify and mitigate risks for
09:57:48 Top Kill.
09:57:49 If we can look at D23793A.1, please.
09:57:58 Can you explain to the Court what is on this
09:58:00 demonstrative that you prepared.
09:58:01 A. Yes. And, again, obviously there was a lot more risks

than that were identified, all the day-to-day implementation risks. There were a lot of those, and they are ranging from routine to nonroutine.

But the key ones this here, the damage to well integrity was a very significant one, and the potential downsides were significant. So --

Q. Let me stop you there. When you say the damage to well integrity, what are you referring to?

A. The potential -- if you're -- the Top Kill operation involves pumping at high pressure. So when you're pumping at high pressure, obviously there is a risk that you will exceed the working envelope, the working design of some equipment, so -- from pumping lines, injection lines, the BOP stack itself, and the downhole infrastructure, so the casing, and in the case particularly the burst disks were a key issue.

So keeping the pressures -- or mitigating the risks that the pressures could exceed that and cause a subsea -- well, burst the disks and potentially cause a subsea broach, those were significant risks, and they did require mitigation.

Q. To be clear, is that the concern over causing the rupture disks to fail during the execution of Top Kill?

A. That would have been a concern at the time, yes. The -- the actual physical pumping would have induced a pressure. Because, again, those pumps are -- they are high pressure pumps. They can put out a lot of pressure. So it was ensuring

that the Top Kill process didn't exceed the burst disk rating.

Q. How did BP mitigate that risk of causing -- well integrity during pumping?

A. It's several ways. The physical lineup configuration of the equipment used. There is relief valves in place, and the pipe work that were set -- basically, the relief valve just ensures that if you accidentally -- or, I guess, if you reach a pressure, a preset pressure, the relief valve will open, and it will stop you exceeding that pressure.

So it's a -- it's an implementation. Obviously, the pumping personnel had a working process, a working procedure. The modeling had been done to come up with a Top Kill procedure, which identified a working pressure envelope, a safe pressure envelope. So the intention was, by design, it would stay within that safe envelope.

Q. Now, were you here when Mr. Dupree testified?

A. Yes, I was.

Q. Do you recall Mr. Dupree showing the Court a chart that had the red zone and the green zone?

A. Yes.

Q. So we don't repeat the same testimony, the question I have for you is, was it a prudent and sound practice for BP to recommend Top Kill after it had mitigated that risk of causing well integrity by identifying what the maximum pump rates could be?

10:01:30 A. Certainly, in my opinion it was, yes.
10:01:32 Q. The second risk that you've identified there is the
10:01:36 bridging materials could completely block the flow path through
10:01:39 the BOP. What is the risk that you're talking about?
10:01:43 A. Again, by design, the junk shot aspect of the Top Kill
10:01:51 involved deliberately pumping a material down the lines that
10:01:55 could -- that could cause a blockage or could restrict the
10:01:59 flow. That was the whole intent.
10:02:01 So to pump material down lines and through an unknown
10:02:06 flow path, there is several outcomes: One, it will have little
10:02:13 or no effect; two, it will give you the desired effect, which
10:02:19 will restrict flow and allow you to do the kill; or, three, it
10:02:24 will have too great an effect, and you'll actually physically
10:02:29 plug everything up solid, which is not what we wanted to do.
10:02:31 So those risks were identified, and an injection --
10:02:37 the bridging material was injected in limited sizes.
10:02:43 Q. Let me stop you there. You said those risks were
10:02:46 identified. How were those risks mitigated prior to the
10:02:50 execution of Top Kill?
10:02:53 A. Good question. The Top Kill procedure was staged. So the
10:03:03 initial phase of it, which I guess you would call the
10:03:07 momentum kill phase of it, the early phase was a diagnostic
10:03:11 phase. So the first day of it was largely pumping through
10:03:17 different flow paths to measure responses, to get the pressure
10:03:22 readings, to get an indication of what the baseline was, so

that when you started pumping a bridging material, if you need to pump bridging material, you would able to see differences in pressure as the bridging material pumped through. So there was a diagnostic phase of it.

Then there was a staged approach on the different types of plugging material that were pumped. Because it is a bit -- it's a bit of an art more than a science, as you probably heard from Mark. So there is quite a lot of -- the more data you've got, the more information you've got, the more you can gauge how that bridging material is or isn't acting.

Q. Was the pressure that was created from pumping the bridging material one of the pieces of data that was continuously monitored throughout the operation?

A. Very much so. That's what you're looking for is -- or one of the key things you're looking for is a difference in pressure to indicate that your orifice is getting slightly restricted, which is one of your target points.

Q. Was the ability to monitor that pressure one of the risk mitigations that were put in place in order to be able to safely execute Top Kill?

A. Well, very much so. As much as the ability to monitor it is also knowing which pressure -- which pressure envelope you want to stay within.

So, yes, you need to monitor it, and you also need to know when your pressure is getting too high and when it's

10:04:57 potentially dangerous, so yeah.
10:04:58 Q. The third risk that you've identified here in connection
10:05:03 with Top Kill is compromising the relief wells by pressurizing
10:05:08 the shallow sands? Can you tell the Court what that risk is?
10:05:10 A. Again, a concern that was identified -- the first phase
10:05:16 of -- or the first step was initiated under the relief well --
10:05:22 in the effort was starting to drill a relief well. That was
10:05:27 going on in the background, if you want, throughout the rest of
10:05:30 the source control efforts.
10:05:31 It was critical to minimize any potential operation
10:05:39 that would jeopardize that relief well. It was identified --
10:05:43 there were a couple of shallow sand intervals that the relief
10:05:47 well had to drill through. If we had compromised well
10:05:52 integrity, if we had caused a crack in the rock that would link
10:05:59 the Macondo Well to those shallow sands, there was a
10:06:02 significant risk or an identified risk that oil would flow up,
10:06:06 and it would overpressure that sand -- flow into shallow sand,
10:06:10 pressurize it, and the relief well would have to drill through
10:06:13 that sand.
10:06:13 So it was -- one of the key things identified there
10:06:16 was before we implement -- before a procedure was implemented
10:06:23 that could potentially cause that risk, you would have to
10:06:26 isolate those sands. So they wanted to run casing, cement and
10:06:30 seal off the sand before proceeding with this.
10:06:33 Q. All right. Let me stop you there. You said they wanted

10:06:36 to run casing. Was there a certain level or depth at which
10:06:41 they needed to cement off the casing in order to able to safely
10:06:46 proceed with the Top Kill operation?
10:06:48 A. Yeah, that would have been, obviously, you had to drill
10:06:51 through -- through that sand, past that sand, and then run a
10:06:55 steel pipe below it, so that you could then cement up the
10:07:00 outside and isolate it.
10:07:02 Q. Did BP, in fact, wait to drill through that sand -- I'm
10:07:06 sorry, to drill through level, cement that level of casing at
10:07:09 the 18-inch shoe, before it proceeded with Top Kill?
10:07:14 A. Yes, that was the -- by design. That's correct.
10:07:17 Q. Again, is that demonstrating -- in your opinion, does that
10:07:22 demonstrate sound judgment in design and execution of Top Kill?
10:07:26 A. I think certainly, given -- given the potentially
10:07:33 significant negative impact you could have had in the relief
10:07:34 well, it makes a lot of sense to make sure that sand was
10:07:40 isolated before commencing a procedure that could -- you could
10:07:43 charge it up. So, yes, it makes perfect sense.
10:07:47 Q. Mr. Adams, in light of the risks identified and the
10:07:51 mitigations in place, were those mitigations appropriate to
10:07:57 deal with the risks associated with executing Top Kill?
10:08:01 A. Yes, I think they were. I'd say yeah.
10:08:03 Q. Now, Mr. Perkin testified that he thought that the risks
10:08:09 were inappropriate.
10:08:10 A. I think it's like -- misunderstanding isn't the right

word, but identifying a risk -- a risk process is all about identifying risks. That's why you do it. You identify the risks so that you can mitigate them. That's the reason for the process.

So identifying a risk, in itself, is not a reason not to do an operation. I think he would have had a fair point if the risks had been identified and no mitigations were put in place, but that very much wasn't the case. The risks were identified and were mitigated. So, no, I don't agree with that.

MS. KARIS: Your Honor, I'm not sure what your preference is for morning break. I'm happy to continue.

THE COURT: How much longer do you have on direct?

MS. KARIS: A while. Maybe 45 minutes.

THE COURT: You better save Mr. Brock some time for the rest of your case.

MR. BROCK: I have not done a very good job for my team of managing my time. I can say that.

THE COURT: You talked about filibustering. Your own team may be filibustering you here.

MR. BROCK: No, I don't think so.

THE COURT: Well, you all can work that out, I'm sure.

Okay, let's go ahead and take a 15-minute recess.

(WHEREUPON, at 10:09 a.m., the Court took a recess.)

THE DEPUTY CLERK: All rise.

10:35:57 THE COURT: Please be seated, everyone.

10:36:07 MR. MILLER: Your Honor, Kerry Miller for Transocean and the aligned parties. Just some housekeeping matters before Ms. Karis resumes her direct examination of the witness.

10:36:15 I would like at this point in time to file, offer and move into evidence the exhibits I used yesterday during my cross-examination of Mr. Trevor Smith. These have been shared with the opposition, and they have no opposition to these exhibits, Your Honor.

10:36:29 THE COURT: All right. Without objection those are admitted.

10:36:31 (WHEREUPON, the above-mentioned exhibits were admitted.)

10:36:32 MR. IRPINO: Good morning, Your Honor, Anthony Irpino for the aligned parties. We also have the deposition bundle of James Wellings, who was a will-call witness for BP, pulled down and so his bundle is now going in evidence.

10:36:49 Indata has been handling that. They have just handed me the labeled thumb drive with the bundle as well as a list of the exhibits that are within the bundle. Those were sent around the parties. A few comments are made. Indata has made all of the changes and have given these directly to go to the Court for filing.

10:37:07 THE COURT: All right. Any objection? Without objection, that's admitted.

(WHEREUPON, the above-mentioned exhibit was admitted.)

THE COURT: All right. Ms. Karis.

DIRECT EXAMINATION BY MS. KARIS:

Q. Mr. Adams, we were talking about the mitigations of Top Kill just before the break. And my reminder that we have limited time left, so we're going to move through a couple of these topics with some brevity, if you will.

With respect to the Top Kill operation, did you look at the modeling that had been performed by Dr. Rygg in connection with dynamic kill?

A. I didn't look at the detailed modeling, but I looked at the output, correct.

Q. And did Dr. Rygg's modeling, or at least the output from that modeling, indicate that with dynamic kill alone, over a 15,000 barrel per day rate, that decreased essentially the likelihood of success of Top Kill -- I'm sorry, dynamic kill?

A. I think that's a reasonable statement, yes.

Q. And there has been reference to a text message that was received during the execution of Top Kill and how that related to the Top Kill operation. I would like to talk to you a little bit about that text message.

First of all, did you review that message in connection with the work that you've done in this case?

A. Yes, I did.

10:38:43 Q. And if we can look at 9160.1.1.

10:38:53 Is this the text message that, sitting here in the
10:38:58 courtroom listening to testimony, has been previously
10:39:02 referenced in which one of the engineers onsite reaches -- or
10:39:07 sends a text on May 27th of 2010, at 3:25 a.m., and says, "Too
10:39:17 much flow rate, over 15,000, and too large an orifice. Pumped
10:39:20 over 12,800 barrels of mud plus five separate bridging pills.
10:39:26 Tired, going home, and getting ready for round three tomorrow."

10:39:31 Is this one of the messages you reviewed in forming
10:39:33 your opinions in this case?

10:39:35 A. Yes, I did.

10:39:35 Q. 3:25 a.m. on May 27th would have been referring to the
10:39:46 operations on which day of Top Kill?

10:39:49 A. That would have been -- the operations were conducted the
10:39:53 late evening on the 26th --

10:39:58 Q. So would that be the first day of the Top Kill operations?

10:40:01 A. That's correct.

10:40:02 Q. Now, is there anything in this text message that causes
10:40:13 you to doubt the conclusion reached in this text?

10:40:19 A. I think, firstly, you treat a text message as a text
10:40:23 message. If you're looking at an evaluation of an operation,
10:40:29 especially an important one, you wouldn't base it on a text
10:40:29 message.

10:40:32 But subsequent to that, I looked at the well log
10:40:38 control, the operational summary, which is a review of the

actual job that was conducted. And on the first day, they were planning on pumping the bridging pills. It turned out they hadn't actually left the launcher.

So the text message, obviously, is an update he sent at the time, but it's not strictly accurate. So -- but I think the key thing on that is that you wouldn't normally rely on a text message anyway, regardless.

Q. The questions asked in connection with this text message is, whether BP should have known that the flow rate was over 15,000 barrels, because at 3 o'clock in the morning one engineer in a text message reports that, in his opinion, over 15,000 barrels and too large an orifice?

A. No. There was a -- obviously, there's key data coming back in and being evaluated by the teams, so that was one text message sent by one tired engineer.

Q. And does it -- it references five separate bridging pills as part of the reason why he concludes that it must be over 15,000 barrels. Is that even based on accurate information?

A. It's not -- it's not accurate, certainly based on my review of the Wild Well Control summary, which is a formal document, so no.

Q. Now, based on your background and experience and 34 years in your capacity -- in various capacities in engineering, would you make decisions to not go forward with Top Kill because one engineer in a text sent at 3:25 a.m., that has incorrect

information, reaches a preliminary opinion as to what the reason was that Top Kill didn't work?

A. Absolutely not. It's a lot more that has to be taken into account than a text message. So no, assuming -- I actually don't even know why he sent it out. I'm assume it was an update he was trying to send at the time. But no, you rely on the data that's come in from the vessels.

Q. Did you review some of the work that the Federal Science Team did in connection with Top Kill?

A. Yes.

Q. And did you review some of the information that they had going prior to the Unified Command approving Top Kill?

A. I reviewed a -- communications confirming they're conducting independent work, that's correct.

Q. Look at 9245.2.2.4, please.

Tell the Court what this e-mail dated May 18th of 2010, eight days before Top Kill is executed, titled "Summary Points from the Kill the Well on Paper Discussion" is about?

A. This is a summary note sent out from a "Kill the Well on Paper" meeting that was held on May 18th.

Highlighted in yellow, both in the e-mail distribution list and also at the bottom, the attendee list, are the government science participants.

Q. So did the government participate in this meeting on May 19th regarding "Kill the Well on Paper"?

10:44:25 A. On May 18th, yes. Certainly that's the indication they
10:44:28 participated, yes.
10:44:28 Q. And folks like Mr. Curtt Ammerman as well as
10:44:34 Charles Morrow and others participated?
10:44:37 A. Yes. The highlighted yellow list, they were attendees,
10:44:40 correct.
10:44:40 Q. Now, if we can look at 9245.2.5, please.
10:44:50 As part of the memo that was generated for the "Kill
10:44:54 the Well on Paper" meeting in which government scientists
10:44:57 participated, there is a third bullet.
10:45:00 "Modeling indicates that a dynamic kill cannot be
10:45:02 successfully executed if the oil flow rate is 15,000 barrels,
10:45:08 stock tank barrels per day."
10:45:10 Is this information that was shared with the
10:45:13 United States government, including members of the
10:45:14 Science Team, prior to the execution of Top Kill?
10:45:16 A. Yes. That's a summary point that was highlighted at the
10:45:20 "Kill the Well on Paper" meeting, so yes.
10:45:22 Q. And did you see evidence that after this information was
10:45:28 communicated, the government Science Team did some of its own
10:45:31 work and independent analysis to understand Top Kill?
10:45:39 A. Yes, I did.
10:45:40 Q. Now, if you can look at D-23798.1.
10:45:48 This is an e-mail from Donald Sullivan to a number of
10:45:55 individuals, all with e-mails ending in .gov, and it's titled

"End of Day Update," Wednesday, May 26th of 2010.

Do you recognize this document?

A. Yes, I do.

Q. Is this one of the documents you considered in reaching your opinions in this case?

A. Yes.

Q. Do you know who Mr. Sullivan works for?

A. He's down there as one of the labs, federal science labs.

Q. And is May 26, 2010, the first day of the Top Kill operations?

A. That's correct.

Q. Mr. Sullivan reports to a number of individuals within the various labs, and members of the Science Team, he says, "A joint meeting amongst the labs and DOE leadership was held to discuss conclusions of the diagnostics. In general, it was agreed that the kill shot should be executed, and to have higher assurance that the flow will primarily go down the annulus, the test ram should be opened and pressure should be placed on the upper ram."

And he goes on to say, "This independent analysis agreed with the conclusions drawn by BP, noting that they had not thought of closing the upper pipe ram and they then included it in their procedure."

Does this support your opinion that the government was conducting an independent analysis of Top Kill?

MR. DOYEN: Your Honor, I'll object to that. He does not express an opinion and has no foundation or expertise to be expressing opinions on what the government does on an independently adequate basis, independent of whatever BP was telling them. That's not the subject of his report.

THE COURT: I sustain the objection.

MS. KARIS: Your Honor, if I may respond. Mr. Adams does have this in his report, and in his opinions. I'm happy to move on, if you would like me to, but he has --

THE COURT: Let's move on.

MS. KARIS: Okay.

EXAMINATION BY MS. KARIS:

Q. Mr. Adams, did you also -- did you render opinions in this case in connection with the analysis that was done coming out of Top Kill?

A. Yes, I did.

Q. And does your report contain opinions about BP's analysis as well as the government's analysis following Top Kill?

A. Yes, it does.

Q. And did you render opinions in this case about BP's analysis as well as the government's analysis coming out of Top Kill?

A. I rendered opinions on the government having conducted independent analysis.

Q. We can look at D-23799.1. I'm sorry. If we can first

look at Mr. Adams' report. I'm not sure what -- I'm sorry. I'll give you the number.

That would be 11738.1. There you go. We can turn to page 15, and call out the first paragraph under "Top Kill data increased concerns about integrity of the well."

Is this part of the report -- I'm sorry -- is this a page from the expert report you've rendered in this case?

A. Yes, it is.

Q. And if you'll look, starting with the: "Once the Top Kill data was collected, BP and the U.S. scientists examined it." You go on to say, "The interpretation of the data caused the well integrity concerns to be evaluated, specifically if the well was shut-in, it could cause the oil to exit the wellbore, fracture the formations and ultimately exit the sea floor."

Is that an opinion you rendered in this case?

A. Yes, it was.

Q. And did you review the government science team's independent analysis that you're referencing here when you say "the U.S. scientists examined it"?

A. I reviewed the documentation that said that they had conducted independent analysis.

Q. If we can look quickly at D-23799.1.

This is an e-mail dated May 30th from Secretary Chu to Dan Leistikow with a cc to Dr. Hunter, Dr. O'Connor and a number of others.

10:51:00 Describe for us generally what this e-mail reflected
10:51:02 to you in connection with your opinions in this case?
10:51:04 MR. DOYEN: Your Honor, I'm going to renew my
10:51:07 objection, if I take the thrust of this line, which is to
10:51:10 suggest that the witness is opining on independent analyses
10:51:13 conducted by the government.
10:51:14 His opinions, he's expressed earlier in the case
10:51:19 and to the Court, relate to the reasonableness of BP's actions.
10:51:24 He does not purport to be any kind of expert on government
10:51:27 decision-making. Doesn't have a foundation for saying he's
10:51:31 looked at enough of the materials, talked to enough government
10:51:33 officials, read enough government depositions to possibly be
10:51:37 opining on whether or not the government did an independent
10:51:39 analysis, and merely referring to a couple of documents that he
10:51:43 thinks might say that doesn't render him an expert.
10:51:47 MS. KARIS: Your Honor, if you look at Footnote 56 of
10:51:49 Mr. Adams' report, he specifically cites this document as part
10:51:54 of the basis for his opinions, that once Top Kill data was
10:51:59 collected, BP and the U.S. scientists examined it, and it goes
10:52:02 on to talk about their interpretation of that data. This
10:52:05 specific document is in Footnote 56, along with other
10:52:08 documents.
10:52:09 THE COURT: Where is his opinion that you're about to
10:52:11 ask him about?
10:52:12 MS. KARIS: His opinion is at the top, Your Honor, 3.6.

"Once the Top Kill data was collected, BP and the U.S. scientists examined it.

THE COURT: Wait, wait. I don't want you to read it.

MS. KARIS: I'm sorry. Yes.

THE COURT: In 3.6?

MS. KARIS: Correct.

THE COURT: Well, it's not an opinion. He says they examined it. I guess that could be an opinion, but that's kind of a statement of fact, I guess.

MS. KARIS: If I may respond.

THE COURT: I don't know where you're going with this. So much of this sounds repetitive to what I've already heard in this case, but you're eating up Mr. Brock's time, so --

MS. KARIS: Understood. And if I may respond.

MR. BROCK: I've ceded a bit.

MS. KARIS: An assertion has been made in the case that BP's conclusion was unreasonable.

THE COURT: I know. But we've heard this stuff -- I've heard this stuff several times now in the last four days, so --

Go ahead. What do you want to ask him? But I think you're wasting your time, but that's up to you.

MS. KARIS: I'll move quickly through this.

EXAMINATION BY MS. KARIS:

Q. Does Secretary Chu indicate in this e-mail that the government is conducting -- under Bullet Number 2, you're

getting the data at the same time as BP engineers and conducting our own independent analysis of the data so we can verify the conclusions that BP is making at every step.

A. Yes. That was a conclusion I drew from that, yes.

Q. Can you summarize, what was BP's conclusion coming out of Top Kill with respect to well integrity?

A. Coming out of Top Kill, the concern was that a new, well, a new concern was identified, and as a result BOP-on-BOP was removed from the table.

Q. And did you review documents that reflected what the government's conclusion was from its independent analysis?

A. Yes, I did.

Q. What did those documents indicate about the government's conclusion following your independent analysis?

MR. DOYEN: Your Honor, I object again. The witness doesn't have -- it's not been established he has a foundation adequate to be talking about government processes in the case.

THE COURT: I think -- I think we're getting beyond this witness's expertise.

MS. KARIS: I'll move on, Your Honor.

EXAMINATION BY MS. KARIS:

Q. Mr. Adams, following Top Kill, was a recommendation made to remove BOP-on-BOP from the -- as the next step in the source control strategy?

A. Yes, it was.

10:55:19 Q. And can you give the Court an overview of, from your
10:55:24 perspective, first, what was the reason that that decision was
10:55:27 made?
10:55:29 A. It was primarily due to a concern that was identified or
10:55:34 the risk was identified that the collapse disks in the casing
10:55:40 had actually already failed. So up until that point, the
10:55:43 concern was that operations would initiate a failure of the --
10:55:51 or a rupture of the burst disks.
10:55:55 The data analysis from the Top Kill highlighted a
10:56:01 concern that the disks had already failed, and as a result,
10:56:02 there was an open communication path to the formation, which
10:56:09 radically reduced the -- pressure in the well.
10:56:11 Q. In your professional opinion, given that that concern
10:56:14 could not be ruled out, was it prudent for BP to recommend not
10:56:20 proceeding with BOP-on-BOP?
10:56:22 A. I think at that stage, given that that risk couldn't be
10:56:28 eliminated, I think, yes, it was.
10:56:30 Q. Now, there has been a suggestion -- strike that.
10:56:34 There has been an assertion that the BOP-on-BOP was
10:56:38 ready to go before Top Kill was executed. Did you review the
10:56:43 information in this case to determine whether, in fact, the
10:56:47 BOP-on-BOP was properly risk mitigated, properly engineered and
10:56:50 ready to go prior to Top Kill?
10:56:52 A. Reviewed that in quite extensive detail actually because
10:56:57 of that -- of the confusion and the data.

10:56:59 Q. Tell us, what conclusion did you reach?
10:57:02 A. The BOP-on-BOP was still undergoing a repair inspection
10:57:07 and maintenance at the time the Top Kill effort was conducted,
10:57:10 so it definitely wasn't ready to go.
10:57:13 Q. Okay. Was BOP-on-BOP ready to go following Top Kill, on
10:57:21 May 28th of 2010?
10:57:23 A. No. At that point, it was still undergoing maintenance.
10:57:26 Q. Did the *DD II*, the *Development Driller II*, Transocean's
10:57:33 rig BOP, did it have outstanding maintenance issues prior to
10:57:39 the execution of Top Kill?
10:57:41 A. Yes, it did. It was an ongoing scope of work at that
10:57:43 point.
10:57:44 Q. If we can look at TREX-11743.1.1.
10:57:52 Is this a West Engineering report prepared on the
10:57:58 *Development Driller II*'s outstanding maintenance issues for the
10:58:04 BOP following the Top Kill operation?
10:58:06 A. It's not specifically just the outstanding issues. It's a
10:58:11 summary of all of the work that was conducted, but, yes, it
10:58:14 includes that.
10:58:14 Q. Fair point. Does it include outstanding maintenance items
10:58:18 at the time the Top Kill was ready to go?
10:58:20 A. Yes, it does.
10:58:21 Q. And then if we can look at the *Enterprise* BOP, a
10:58:32 West Engineering report for *Enterprise*, which is 11677N.1.2.
10:58:39 Are you familiar with the -- are you aware that there

was an early consideration to use the discovery *Enterprise* and its BOP as part of the intervention BOP-on-BOP efforts?

A. Yes, I was aware of that.

Q. And do you have an understanding as to why that BOP was no longer progressed for the BOP-on-BOP intervention efforts?

A. My understanding is, it was removed -- the *Enterprise* was moved on to a collection effort on May 11th, I believe.

Q. So it was moved over to collection efforts. At the time that it was moved over to collection efforts, were there outstanding maintenance issues with, again, Transocean's BOP on the *Discoverer Enterprise*?

A. Yeah. Again, that BOP had ongoing work at that time, that's correct.

Q. If we can look at D-23933.1 -- I'm sorry, first, D-23808.1.

Does this reflect some of the outstanding issues that the *Discoverer Enterprise* had in this document dated May 26th of 2010?

A. Yes. It's a summary of some of the key points during that entire maintenance program, but the outstanding issues are highlighted in there as well, yes.

Q. And there is one under the moonpool Coflexip hoses.

"All hoses in the moonpool were observed to have damage to the outer protective sheath and will need to be replaced." In capital letters, "No certification was produced

on the rig."

That would be Transocean's rig, correct?

A. That's correct. It relates to high pressure hoses that connect the pipe work in the moonpool area.

Q. If we can look at D-23933.1.

Can you tell the Court what this photograph is from? First of all, where does it come from?

A. It's a photograph out of the West report. And what they've done basically is just highlighted with arrows where the damage was. And then on the right-hand side --

Q. Do you have a pointer up there?

A. Sure.

Q. I'm sorry. If you could point to us what damage West Engineering identified in connection with the *Enterprise's* BOP that is being alleged as ready to go prior to Top Kill?

A. Yeah. This is just a couple of photographs from West's report. The one --

MS. KARIS: Your Honor, if I can approach?

THE COURT: Yes.

THE WITNESS: The picture on the left -- and this is from West Engineering's own report. The picture on the left and the arrows that they've highlighted are just showing areas where they identified damage in the hoses.

And then -- and again, this is their report, not mine. And enlarged it to show an area of damage on there.

Just primarily -- it was just them highlighting the fact that the hoses needed replacement.

EXAMINATION BY MS. KARIS:

Q. In your professional opinion, given your use of well control equipment, would you have recommended using this BOP at this time as part of the intervention efforts?

A. I don't think you could have, no.

Q. Were you here when Mr. Turlak testified?

A. Yes, I was.

Q. Were there issues with the casing shear rams on the *Enterprise*?

A. There was a repair done to the casing shear rams on the *Enterprise*, that's correct, and there were also issues on the *DD II*, casing shear rams.

Q. Now, were you here when Mr. Turlak said that those casing shear rams -- I'm sorry, the *DD II*. I misspoke.

A. *DD II*, correct.

Q. With respect to the *DD II*'s casing shear rams, he did not believe to be -- that to be a problem because you, quote, wouldn't need your casing shear rams.

A. Yeah, what -- when the *DD II* subsequently ran the BOP stack, after inspection testing, there was a problem with the casing shear rams control, so that the BOP had to be recovered and repaired.

Now, the comment, I think, relating to the fact that

11:03:16 the casing shear rams weren't required for the intervention,
11:03:20 but if you look at the BOP-on-BOP procedure, the very first --
11:03:26 the operational step is to close the casing shear rams, so they
11:03:32 very much were required on the BOP-on-BOP procedure.
11:03:36 Q. And if you can pull up D-23 -- I'm sorry, D-24365.1.
11:03:46 Is this Mr. Turlak's testimony where he says, "My
11:03:49 point was that if we're running BOP-on-BOP, this problem really
11:03:52 wouldn't be a problem because you wouldn't really need your
11:03:55 casing shear rams"?
11:03:56 A. Yes.
11:03:58 Q. And if we can now look at TREX-140700.12.1.
11:04:04 Is this the procedure that you were referencing that
11:04:07 talks about closing the casing shear rams?
11:04:09 A. Yes. That's just the BOP-on-BOP procedure. And the very
11:04:13 first step, once the stack has landed, is to close the casing
11:04:20 shear rams as part of securing the well. So you very much did
11:04:25 need the casing shear rams as part of the BOP-on-BOP procedure.
11:04:28 Q. In your professional opinion, would you have
11:04:30 recommended -- would it have been prudent for BP to proceed
11:04:34 with using the *DD II*'s BOP when it had outstanding issues with
11:04:41 the casing shear rams?
11:04:43 A. I think it would have been an extremely hard judgment call
11:04:46 to -- especially in the background of what's just happened, to
11:04:50 be using a defective BOP to do an intervention.
11:04:54 Q. Would you have recommended using a BOP that had problems

with the casing shear ram as an intervention BOP?
A. No.
Q. Let's move on now to the -- were there modifications required in order to proceed -- strike that.
Were there modifications required to both the *Enterprise*'s as well as the *DD II*'s BOP in order to use it as an intervention BOP?
A. There was a -- again, back to mitigating risks. Because of the risk of a -- the well integrity concern, a venting option had been identified as a way to mitigate that risk, so yes, both BOPs -- or either BOP would have required installation of the subsea venting capability.
Q. If we can look at D-23811.1.1.
And just briefly, does this describe the reasons why the BOP needed modifications as part of a risk mitigation approach?
A. Yes, it does.
Q. Have the modifications that were necessary as part of a risk mitigation approach been completed prior to Top Kill?
A. No. They were still a -- sourcing the parts.
Q. And did you review internal documents from Transocean that recognized that as of May 18th, their own prediction was you needed 10 to 14 more days in order to accomplish this risk mitigation procedure?
A. That was the time estimate for the modification, that's

correct.

Q. And so what does that indicate to you as to whether the BOP-on-BOP was ready to go prior to the Top Kill?

A. Well, working on the time estimate window, that even at the low end of the range, you add 10 days to 18 you're at 28. And subsequent estimates were showing it to be early June.

Q. Now, were you here when Mr. Perkin testified on behalf of the aligned parties?

A. Yes, I was.

Q. He asserted that the subsea choke wasn't necessary for the second BOP because you could -- venting could be achieved through the existing choke and kill lines.

Are you aware of that opinion?

A. I've seen that opinion and heard it, correct.

Q. Do you agree with that opinion?

A. No, I don't.

Q. Why not?

A. The concern about a -- venting through the rig's choke and kill system is -- point of fact, what they are doing there is taking a -- hydrocarbons at potentially a high rate up through the rig's choke and kill lines up to the vessel.

And the big issue is, you don't know how long you might have to do that for. So potentially, once you initiated that, you might be connected to the well, venting at an unknown rate, potentially for the duration of the relief wells, so you

could potentially be in that situation for several months.

Q. If we can pull up D-23771A, please.

This is titled "Venting with the Choke and Kill Lines on the Intervention BOP."

Does this animation depict your views -- or your opinion with respect to why it would not have been prudent to use a procedure that had venting taking place through the BOP's choke and kill lines?

A. I think it's a simplified animation, but yes, it will demonstrate that.

One starting point, I guess, on that is that the mitigation that had been identified and was being put in place was to have a venting capability off the BOP with a subsea vent, so any pressure buildup, any concern would be vented subsea away from the rig, away from the vessel. And that was the method that was being -- had been risk mitigated and was being progressed.

Q. So just to -- I'm sorry. Just to summarize, the option being progressed at the time was to put a subsea choke in as a mitigation effort -- as a mitigation step, correct?

A. That's correct.

So in the event that a pressure was too high, a pressure had to be vented or the rig had to depart or there was any sort of surface shutdown, the pressure could be vented subsea away from the vessel. If you're going to produce up the

11:09:47 choke and kill lines, that, obviously, couldn't happen.
11:09:50 Q. Now, if you did it the way Mr. Perkin said -- can we run
11:09:56 the animation, and tell us what your concern is with
11:09:59 Mr. Perkin's opinion that you don't need that subsea choke.
11:10:02 You can just use the choke lines of the intervention BOP.
11:10:09 A. Well, if you play it, I'll maybe stop it in a minute,
11:10:12 but --
11:10:12 So this is basically showing the BOP at the bottom.
11:10:17 We've got a drilling riser all the way to an intervention
11:10:20 vessel at the top. We've got choke and kill lines coming up
11:10:24 with the riser here at the top of the vessel.
11:10:30 Stop it one second.
11:10:31 So what we've got here is we got the choke and kill
11:10:33 lines coming up off the intervention BOP, maybe 5,000 feet of
11:10:38 drilling riser here with the intervention rig up at the top.
11:10:41 Now, as I said, the green line was to vent away from
11:10:47 the vessel subsea, so in the event of any hydrocarbon venting
11:10:51 required, it would be away from the vessel. It wouldn't
11:10:55 jeopardize the intervention vessel.
11:10:56 In the event we opted to go with what Mr. Perkin was
11:11:02 proposing, it would be flowing up to 5,000 feet of drilling
11:11:08 riser through these Coflexip choke and kill lines -- and again,
11:11:13 these are similar to the ones identified in the West report --
11:11:16 to the surface vessel.
11:11:17 Play it again, please.

11:11:18 Q. Looks like we got stuck.
11:11:33 A. Here we go.
11:11:34 So it's shooting on through. The concern would be
11:11:37 that if we started -- once we started venting, if that was
11:11:41 required, the venting capability is then up under the vessel,
11:11:47 so in the event you get any damage to your lines or erosion in
11:11:50 the lines, a surface release, you expose people on this vessel
11:11:56 to potential explosion risk, just like in the original
11:12:00 incident.
11:12:00 So given the mitigation had already been progressed
11:12:02 to take hydrocarbons away from the stack, away from the vessel,
11:12:10 this scenario here is just so high risk, so --
11:12:16 Q. So given that there were modifications required for a
11:12:22 choke and those modifications were not ready as of Top Kill,
11:12:28 plus this alternative option that's been proposed, in your
11:12:32 opinion, was not the prudent way to proceed, did you see
11:12:38 evidence -- any evidence to support that BOP-on-BOP was ready
11:12:43 to go before Top Kill?
11:12:46 A. Well, to the contrary, I saw quite a lot of evidence to
11:12:52 show that it wasn't available before Top Kill. So no, I didn't
11:12:55 see any evidence to say it was ready prior.
11:12:57 Q. Let's move forward now. After the strategy is made to
11:13:03 move to containment, which Mr. Dupree told us about, so we
11:13:06 won't talk about that, was there a need to cut the riser to
11:13:11 proceed with containment efforts?

A. Yes.
Q. And we started by talking about all of the uncertainties and data and information becoming known.
A. That's correct.
Q. What information became known as a result of cutting the riser?
A. When the riser was cut above the LMRP, it was apparent there were two joints of drill pipe in the riser -- or two pieces of drill pipe in the riser where the expectation -- the understandable expectation, there was only going to be one.
Q. If we can look at D-23822.1, please.

What are we looking at here in this photograph?

A. What we're looking at here -- it's kind of hard to see, but that's the riser after it's been cut. The understandable expectation is that there's one piece of drill pipe through there, because there's only one piece of drill pipe in the well, but when they cut the riser and looked at it with the ROV, they saw two pieces of pipe side by side.

So I highlighted a couple of things. One, just the unknowns that people are dealing with, because until the cut, it wasn't expected or anticipated, and justifiably so, that there would be two pieces of pipe. So that's the first thing.

And then, again, in how these things evolve, it highlighted additional risks associated with removing the LMRP that had previously been considered.

11:14:46 Q. Mr. Dupree told us about what his concerns were about the
11:14:50 ability to remove the LMRP. Did the data that was collected
11:14:53 after -- I'm sorry, as a result of trying to cut the riser and
11:15:01 discovering two pieces of drill pipe, support Mr. Dupree's
11:15:04 concerns about his ability to effectively remove the LMRP?
11:15:07 A. I think the concerns he had were valid ones. The
11:15:10 additional one that -- or one of the additional ones that came
11:15:15 in as a result of having two was whether or not the two would
11:15:19 interfere and make that worse, or whether one of those pieces
11:15:21 could fall out. Because drill pipe is quite heavy stuff, so if
11:15:25 it dropped out and hit the sealing phase on top of the BOP,
11:15:28 that would definitely cause issues subsequently trying to line
11:15:32 up another BOP or even a capping stack on it.
11:15:34 Q. All right. Let's move to the capping stack.
11:15:37 THE COURT: Ms. Karis, I feel like I need to warn your
11:15:42 side that you are rapidly running out of time. I don't know
11:15:46 what Mr. Brock has planned left.
11:15:49 I'm not keeping 100 percent accurate time, but I
11:15:54 added up roughly that you all have used 131 minutes this
11:16:01 morning, which is 2 hours and 11, and you only had 2 hours and
11:16:05 56 to start. So you're down to 45 minutes left. Just a
11:16:09 warning.
11:16:10 MR. BROCK: Yes, sir. Thank you. We understand where
11:16:11 we are.
11:16:13 THE COURT: All right. Go ahead, Ms. Karis.

11:16:18 MS. KARIS: Thank you, Your Honor.
11:16:20 EXAMINATION BY MS. KARIS:
11:16:20 Q. I would like to now move to the three-ram capping stack.
11:16:25 Could you tell the Court, how did the three-ram capping stack
11:16:28 fit into the collection strategy.
11:16:32 A. The three-ram capping stack was installed following the
11:16:36 Top Kill effort. It was introduced in a total containment
11:16:41 strategy.
11:16:41 Q. Now, in his report, Mr. Perkin describes the capping stack
11:16:45 as, quote, essentially a smaller version of the BOP stack. Do
11:16:51 you agree with that description?
11:16:53 A. No, I don't.
11:16:53 Q. If we can look up D-23823.1.
11:17:04 Can you tell us what demonstrative 2382 -- I'm sorry,
11:17:10 23823.1 reflects.
11:17:16 A. It's just highlighting the key differences between the
11:17:19 capping stack and the BOP. The capping stack, the three-ram
11:17:23 capping stack was installed. It was optimized for containment,
11:17:27 so it could potentially be a total containment device.
11:17:32 So subject to surface collection, it would collect
11:17:38 everything coming out of the well. It had multiple off-take
11:17:41 points to assist that happening. It had pressure -- more
11:17:47 sophisticated pressure monitoring on it, to ultimately allow
11:17:50 that well integrity test that was conducted later on, so you
11:17:53 could actually gather data from the well capping -- the

11:17:56 capping stack.

11:17:59 The venting system on it was specifically designed so
11:18:02 that, in the event of a surface vessel having to depart,
11:18:06 hurricane being the obvious one, so if you have to -- if the
11:18:10 surface vessels have to leave, the well would automatically
11:18:15 vent subsea rather than running the risk of the pressure now
11:18:20 causing a subsea broach, so the -- is specifically designed to
11:18:23 allow that.

11:18:23 A drilling BOP -- I mean, there are commonality
11:18:26 between some of the components, but a drilling BOP is not
11:18:29 designed to do that and doesn't have any of these features.

11:18:32 Q. Does D-23823.1 list some of the differences between a
11:18:40 drilling BOP and the three-ram capping stack that was
11:18:44 ultimately used?

11:18:46 A. Yes, it does. Those are some of the key ones, correct.

11:18:49 Q. In your opinion, were each of these features that the
11:18:52 three-ram capping stack had essential in order to execute safe
11:18:59 and reliable intervention operations?

11:19:01 A. Certainly, as a containment capability and for subsea
11:19:07 venting, definitely, yes.

11:19:08 Q. All right. Now, I would like to talk about the -- how we
11:19:11 got to the three-ram capping stack, the development of that
11:19:15 stack.

11:19:16 D-23774A.1, please.

11:19:31 Can you remind us, again, of the progression, if you

will, between the two-ram capping stack and then ultimately the decision to use a three-ram capping stack, very briefly?

A. Very briefly, the two-ram capping stack was designed to line and seal, so just to run and close in the well, with no other capabilities. So it was purely to instantly cap.

The issues with it was it didn't have -- well, several issues, but primarily it didn't have a venting capability in the event of overpressure.

The three-ram capping stack -- well, in addition to the obvious one of having an additional ram, which would give it redundancy, but it had multiple off-take points which allowed for collection.

So in the event -- and in actual fact, the primary installation reason for the three-ram capping stack was ultimately as a containment device; but, had it been run as a capping device, it also had the fall-back option to go to containment.

The fail open capability was also important because if you lose a control system, a control capability of your stack, an event of the vessel departing or hurricanes or shutdowns --

Q. Let me stop you for a second.

A. I'm sorry.

Q. The two-ram capping stack, did it have a fail open feature?

A. No, it didn't, no.
Q. Why was -- first of all, what is a fail open feature?
A. Simplistically, if the valves -- it's pushed open with pressure against a spring. So if you release the pressure -- this is simplified, but the spring would just pull the valve shut or push the valve shut, so you actually require pressure to hold it open. So removing the pressure, if it's fail safe close, it automatically closes.

That's by design. These are like that for a good reason, so that in the event you lose your surface capability, the well will be secure.

The three-ram stack, there was an opposite requirement. The concern there was that if the vessel had to leave or if you lost pressure -- lost control system pressure, we didn't physically want the well to shut in because the concern was that the pressure would build up so much, you could cause a broach.

So the three-ram capping stack, the outlet modified such that those valves worked in an opposite way, so the spring wanted to hold it open, and you physically had to apply pressure to close it. So it worked in an opposite function.

So in the event you lost pressure, the valve would open automatically or stay open, and it would vent subsea. That was the reason for that.

Q. Mr. Adams, in light of the information that was unknown,

the uncertainties that existed, as well as the data and information continuing to be collected, was it prudent to move from the two-ram capping stack to the three-ram capping stack?

A. Yes, it was.

Q. Let's move to what I believe is your final opinion. In your summary of opinions, you said you did not agree with the assertion that the well could have been shut in in one week or just a couple weeks.

Have you formed an opinion about the amount of time it took to develop and deploy the capping stack?

A. Yes, I have.

Q. What is your opinion?

A. I don't see any way we could have deployed that stack within a week or weeks, if risks were being taken into account.

Q. Mr. Perkin testified on Monday to the Court that the BOP-on-BOP procedure could have been attempted by landing the intervention BOP on the flex joint, thereby eliminating a bunch of the time that it took to design, engineer and test all of the work that was ultimately performed. Do you agree with Mr. Perkin's opinion?

A. I definitely don't, no, absolutely not.

Q. Why not?

A. The capping stack -- I mean, simplistically, again, the capping stack was about 18 feet high and weighed about 75 tons. Still big, but it's -- the intervention BOP-on-BOP is about

11:23:54 50-odd feet high and weighs in the order of 360 tons,
11:23:58 significantly higher.
11:24:01 The flex joint on the top of the LMRP and the
11:24:05 equipment there -- we were demonstrating that that equipment
11:24:10 wasn't anything close to strong enough to hold that weight. So
11:24:13 that was one of the big issues on the capping stack design,
11:24:17 even at the 75-ton weight, was whether or not that would be
11:24:22 capable of doing it.
11:24:23 Q. Why would the significant weight issue between the
11:24:26 capping stack -- or weight between the capping stack and the
11:24:30 BOP-on-BOP option present a challenge or an impossibility for
11:24:36 landing on the flex joint, as Dr. -- or Mr. Perkin suggested?
11:24:40 A. Probably landing on the flex joint could probably have
11:24:45 been engineered, but the issue wasn't so much physically
11:24:49 getting it over the flex joint. It would have been if you had
11:24:52 to disconnect for any reason again, if the rig had to depart,
11:24:58 you have to engineer it such that the infrastructure on the
11:25:02 seabed can support that weight.
11:25:03 So to have a 360-ton, a 50-foot-high weight sitting
11:25:08 on top of the flex joint, it wouldn't be capable of supporting
11:25:12 that. So the potential significant than risk, and I think high
11:25:16 likelihood risk, would have been if the rig had to depart due
11:25:22 to failure in that flex joint, which would then have left the
11:25:25 intervention BOP potentially lying on the seabed.
11:25:26 Q. Was the *Deepwater Horizon* BOP listing as well?

A. There was an ongoing, that's correct. That was one of the things that was taken into account when we were doing the capping stack design -- or I'm saying the capping stack design. The capping stack installation design, I should say.

Q. Now, Mr. Ziegler, who testified on behalf of the aligned parties, suggested that the capping stack could have shut in the well in as little as seven or eight days. Were you here for that testimony?

A. Yes, I heard that.

Q. Do you agree with that opinion?

A. No, I don't.

Q. Why not?

A. Well, firstly, what would that capping stack have looked like? The indications are -- well, also, there wasn't a capping stack in existence at the time. But there is no reason to suggest that a capping stack, if it existed, wouldn't have been designed to go onto the LMRP.

The lower marine riser package is designed to come off the top of the stack, and that's where that intervention mandrel is. So the logical -- the expectation is that that's the way a capping stack would have been designed.

Looking at the evolution of what happened on Macondo, a capping stack designed with a connector on it would have required modification in the same way the design was on the three-arm capping stack, and that took several months to

11:27:01 achieve.

11:27:01 So the well engineer which conducted the testing of
11:27:07 equipment, the design of the equipment, that definitely
11:27:11 couldn't be done in that time period.

11:27:12 Q. If we can pull up D-23837.1.

11:27:17 It says, "Closing the Well with a Capping Stack,
11:27:25 Factors the Aligned Parties Have Missed." Does this slide
11:27:28 summarize some of the factors that you believe Mr. Ziegler, as
11:27:35 well as Mr. Perkin, have missed in suggesting that the well
11:27:38 could have been shut in in a couple of weeks using the flex
11:27:42 joint or whatever another equipment?

11:27:44 A. Yes, that just really summarizes what we just said.
11:27:48 That's correct.

11:27:48 Q. In rendering your opinions and hearing the testimony, that
11:28:10 is, that of Dr. Ziegler -- I'm sorry, Mr. Ziegler, Mr. Perkin,
11:28:14 and Dr. Bea, in your opinion was there any support for the view
11:28:22 that you could have shut this well in in two to three weeks, in
11:28:26 light of all of the uncertainties that existed?

11:28:31 A. With the equipment that was available and the unknowns
11:28:35 that they were faced with, I really struggle to see where that
11:28:40 opinion comes from. So, no, I definitely don't agree with that
11:28:44 opinion.

11:28:44 Q. In your opinion, is it possible to predict how long it
11:28:47 would have taken to shut the Macondo Well in, given all of the
11:28:50 unknowns and all of the uncertainties that had to be addressed

at that time?

A. No.

MS. KARIS: I have no further questions.

MR. DOYEN: Just a moment, Your Honor?

THE COURT: Yes.

MR. DOYEN: Is this on? Am I live?

THE COURT: I think so.

MR. DOYEN: Thank you, Your Honor.

Good morning, Your Honor.

THE COURT: Good morning.

CROSS-EXAMINATION BY MR. DOYEN:

Q. Mr. Adams --

A. Good morning.

Q. -- I'm Mike Doyen. I'm representing Transocean, here on behalf of Transocean and the aligned parties. I have you on cross-examination.

Mr. Adams, it would be fair to say, wouldn't it, that prior to Macondo, you had never been involved in any blowouts?

A. You're talking operationally? No, that wouldn't be correct to say.

Q. All right. Let's pull up Adams number 1, Adams deposition 64, line 17, 65, Line 18.

It's a question you gave a fairly long answer to, characteristically, at the deposition.

"QUESTION: Okay. How many times have you or Norwell

11:30:55 1 successfully stopped the flow of oil from a blown-out well?"
11:31:01 2 I'm going to come all the way down here to line 10 on
11:31:02 3 the next page.
11:31:03 4 "So, to date, we have always been successful, and
11:31:06 5 none of our wells I've been involved with have blown out. So
11:31:10 6 you could argue that because we've been good at that, we
11:31:12 7 haven't been involved in any blowouts."
11:31:16 8 Were you asked that question, did you give that
11:31:19 9 answer at your deposition?
11:31:19 10 A. I guess I did.
11:31:21 11 Q. Thank you.
11:31:25 12 You, prior to Macondo, had never capped a flowing
11:31:28 13 well, had you?
11:31:28 14 A. Never capped a flowing well, that's correct. I've been
11:31:31 15 involved in -- you asked the question, have I been involved in
11:31:34 16 it. That's different, but, no.
11:31:36 17 Q. I didn't -- we'll go a lot shorter if you'll answer my
11:31:42 18 questions.
11:31:43 19 Before Macondo, you had never killed a well using a
11:31:46 20 momentum kill; isn't that true?
11:31:47 21 A. That's true.
11:31:47 22 Q. Before Macondo, you had never killed a well using a junk
11:31:52 23 shot; isn't that true?
11:31:53 24 A. That's true.
11:32:00 25 Q. Now, Counsel asked you an interestingly precise question,

I think. You were giving some testimony on a number of reasons you thought there were things being done to the BOP-on-BOP during May. Do you recall that general line of testimony?

A. Generally, yes.

Q. Things that occurred before Top Kill, correct?

A. Correct.

Q. Then she asked you if it was your opinion on May 28th, the day that the Top Kill exercise ended, whether there were still maintenance items on the *DD II* BOP that hadn't been completed. Do you recall that?

A. I recall, that's correct.

Q. In fact, you say in your report, don't you, that those maintenance items were done on May 29th, correct?

A. Say again.

Q. The outstanding maintenance items on the *DD II* were completed, according to what you say in your report, on May 29th, correct?

A. If you're referring to the West report, which is the actual specifics of what was ongoing --

Q. Yes, sir.

A. -- they weren't complete at that time, no.

Q. All right. Let's look at call-out TREX-11738.5.2.

You state in your report, "However, during testing" -- this is of the *DD II* BOP, correct?

A. Yes.

11:33:37 Q. "During testing in May 2010, several leaks and other
11:33:41 maintenance issues were found that required Transocean
11:33:45 personnel to undertake repairs to the Transocean-owned and
11:33:49 maintained *DD II* BOP. This work took until May 29th to be
11:33:56 completed."
11:33:58 That is what you state in your report, isn't it?
11:33:59 A. That's what's stated in the report, that's correct.
11:34:02 Q. You were here earlier when various witnesses testified to
11:34:10 those Gantt chart schedules that showed when various pieces of
11:34:14 work would be done, correct?
11:34:16 A. That's correct.
11:34:16 Q. You were here when witnesses had up schedules dated
11:34:20 May 29th that showed commencing immediately after the Top Kill
11:34:24 was over, the BOP could be splashed, and the well vent closed
11:34:29 and vented as necessary by June 6th, correct?
11:34:34 A. Those were predicted in forward projection Gantt charts,
11:34:37 that's correct.
11:34:37 Q. You saw those, correct?
11:34:38 A. I saw those.
11:34:39 Q. You reviewed some of those before you prepared your
11:34:42 report, correct?
11:34:43 A. Yes.
11:34:43 Q. There was nothing in your report stating that that
11:34:46 schedule could not be met; isn't that true?
11:34:48 A. It doesn't affect the operations on the ground. If you

look at the actual physical --

Q. My question is different, sir. There is nothing in your report -- this is my question, there was nothing in your report that states that schedule showing BOP being splashed and capping the well on June 6th could not be met; isn't that true?

MS. KARIS: Your Honor, Mr. Adams was answering that very question. I think he was cut off.

THE COURT: Well, he's got the question now. So go ahead.

THE WITNESS: Okay, thank you.

What I was saying, no, there was nothing in my report that stated that, but there is documentary evidence showing that the reality is that wasn't the case. So we know from the West reports and maintenance reports that the BOP didn't go in the water until a few days after that.

EXAMINATION BY MR. DOYEN:

Q. Well, you understand, don't you, sir, that on May 29th, the decision was made not to deploy the BOP-on-BOP -- I'm saying that badly, I apologize.

You understand that on May 29th, the decision was made not to move forward with the BOP-on-BOP option; you do understand that, don't you?

A. On May 29th, May 30th, that's correct.

Q. You state in your report that the reason for that was the diagnosis that came out of the Top Kill operation, correct?

11:36:12 A. That's correct.
11:36:12 Q. In your report, you don't contribute any other reason to
11:36:17 that decision other than the diagnosis of the Top Kill
11:36:21 operation; isn't that correct?
11:36:23 A. I'm not a hundred percent sure where you're going, but
11:36:26 yes, I didn't indicate, but the fact that it wasn't ready
11:36:30 surely indicates something.
11:36:33 Q. Sir, you don't have to figure out where I'm going. Just
11:36:36 answer the questions that I give to you.
11:36:38 A. Okay, sorry. That's a fair point.
11:36:40 Q. In your report, you nowhere state that this BOP could not
11:36:46 be deployed on top of the *Horizon* BOP at any time in June;
11:36:50 isn't that true? You just don't say that in your report?
11:36:53 A. It's not stated in the report, that's correct.
11:36:54 Q. All right. I want to come back now to explore some of the
11:37:08 analysis that was done on May 29th that led to the decision not
11:37:13 to deploy the BOP-on-BOP option. Are you with me?
11:37:18 A. Yes.
11:37:18 Q. All right. You know Robert Grace, don't you?
11:37:30 A. I've heard of him, yes.
11:37:32 Q. You know he's an expert on dealing with blowouts; isn't
11:37:35 that true?
11:37:35 A. Yes.
11:37:35 Q. You understand he spent his career, it's his passion
11:37:39 dealing with blowouts?

11:37:39 A. That's my understanding, that's correct.
11:37:42 Q. You also understand, and I think there has already been
11:37:46 testimony on it in this case, that he's written books on the
11:37:48 subject?
11:37:48 A. Yes.
11:37:49 Q. This one's a TREX, but I ordered a copy from Amazon
11:38:00 anyway, for two hundred dollars. Mr. Gibson is also a pretty
11:38:05 good -- Mr. Grace is also a pretty good businessman, I guess.
11:38:11 Let's look at TREX-116 -- I'm sorry, let's look at
11:38:35 call-out TREX-21176.268.6.
11:38:44 This is the beginning of Mr. Grace's discussion of
11:38:47 the momentum kill. Let me just read you a couple sentences,
11:38:52 see if you agree with them, all right?
11:38:53 "The momentum kill is a procedure where two fluids
11:38:57 collide, and the one with the greater momentum wins." You
11:39:00 agree with that, don't you?
11:39:01 A. Yes.
11:39:01 Q. "If the greater momentum belongs to the fluid from the
11:39:04 blowout, the blowout continues." You agree with that too,
11:39:08 don't you?
11:39:08 A. It seems reasonable. Yes.
11:39:13 Q. "If the greater momentum belongs to the kill fluid, the
11:39:19 well is controlled." You agree with that, don't you?
11:39:21 A. Yes, I would.
11:39:21 Q. Then Mr. Grace goes on to say, "Momentum kill concepts are

11:39:25 best illustrated by Figures 5.12 and 5.13." So let me bring up
11:39:30 those figures.
11:39:31 Let's call out TREX-21176.268.5. Mr. Grace is
11:39:48 apparently also quite an artist.
11:39:51 So it looks like in the top of this figure we've got
11:39:54 an 18-wheeler barreling along the highway heading toward a
11:39:59 small car. Mr. Grace says, "The most fundamental reasoning
11:40:04 would suggest the occupant of the car is in greater peril than
11:40:08 the occupant of the truck." Correct?
11:40:10 A. I'd say that's a reasonable assertion.
11:40:14 Q. The truck is going faster and it weighs a lot more, it's
11:40:17 got a lot more momentum than the little car, correct?
11:40:21 A. Correct.
11:40:21 Q. "Most likely," Mr. Grace says, "that the momentum of the
11:40:28 truck will prevail and that the direction of the car will be
11:40:32 reversed." You agree with that too, don't you?
11:40:35 A. I probably agree with that.
11:40:36 Q. Mr. Grace also says that, "The fluid dynamics are
11:40:41 complicated, but they are well represented by the second
11:40:44 figure."
11:40:46 Let's go ahead and call out TREX-21176.269.6.
11:40:57 "The dynamics of a blowout are very much the same as
11:41:00 those illustrated in Figure 5.13." Now, we look at the lower
11:41:04 illustration. Do you see that?
11:41:05 A. Yes, I do.

11:41:06 Q. "So the fluid flowing from a blowout exhibits a definable
11:41:13 quantum of momentum. Therefore, if the kill fluid is
11:41:16 introduced at a greater momentum, the flow from the blowout is
11:41:18 reversed when the fluids collide." You agree with that, don't
11:41:22 you?
11:41:25 A. For the example he's quoting, yes.
11:41:29 Q. He says, "The governing physical principles are not
11:41:34 significantly different from those governing the collision of
11:41:36 two trains, two cars, or two men. The mass with the greatest
11:41:42 momentum will win the encounter." You agree with that, don't
11:41:46 you?
11:41:46 A. He's using amplification of it, but yes.
11:41:49 Q. Now, in the case of the truck, we would define the
11:41:52 momentum pretty easily as mass and velocity, correct? When
11:41:56 we're talking about the momentum of fluids coming up the well
11:41:59 or fluids going down the well, talking about the density of the
11:42:03 fluid and the flow rate, correct?
11:42:05 A. Okay, yeah.
11:42:06 Q. What we need for this operation to be successful is the
11:42:14 momentum, defined as the density times the flow rate, of the
11:42:20 kill fluid to be greater than the momentum of the fluid coming
11:42:24 up, defined as the density of those fluids and that flow rate;
11:42:28 isn't that true?
11:42:28 A. In principle, yes.
11:42:29 Q. Let's call out TREX-11737.8.5. I'm sorry if I misspoke.

Do you need that again? 11737.8.5.

Now, you understand, don't you -- we're looking, by the way, at an excerpt from your report -- you understand that "modeling was undertaken during the response that indicated if the responders could pump 50 barrels per minute of mud into the *Deepwater Horizon*'s BOP, such a momentum kill could successfully kill the well if it was flowing at 5,000 barrels per day, but not if it was flowing at 15,000 barrels per day."

Did I read that correctly?

A. You did.

Q. You looked at the actual document in which Dr. Rygg reports those results, didn't you?

A. I looked at the output, yes, sir.

Q. I'm sorry, I couldn't --

A. Correct.

Q. You don't challenge that conclusion that Dr. Rygg made in your report, do you?

A. I didn't analyze the data. I looked at the output, so no.

Q. You don't do any modeling of your own to show that momentum kill could succeed when the well was flowing at 15,000 or more, do you?

A. No.

Q. I think you state in your report that it was shortly indicated in June through collection methods that the well was flowing above a rate of 23,000 barrels per day in June,

11:44:01 correct?
11:44:08 A. That was subsequent to the Top Kill attempt, but yes,
11:44:11 that's correct.
11:44:11 Q. Your report doesn't claim that a momentum kill could work
11:44:15 if the well is flowing above 23,000 barrels a day, does it?
11:44:18 A. No, it doesn't.
11:44:19 Q. Now, I think you indicated earlier that that Top Kill
11:44:25 included two parts, correct? One part -- and those parts are
11:44:29 interwoven, but one part is this momentum kill pumping mud
11:44:29 down, correct?
11:44:34 A. Uh-huh (affirmative response).
11:44:34 Q. The second part is the junk shot, right?
11:44:37 A. That's correct.
11:44:37 Q. You agree that the purpose of the junk shot is to reduce
11:44:40 the flow of the fluids coming up the well, correct?
11:44:44 A. The purpose of the junk shot is to reduce the orifice
11:44:47 size, which in turn will reduce the flow. That's correct.
11:44:50 Q. Reducing the flow down to a rate where the momentum kill
11:44:55 will work is what gives me some prospect of success with the
11:45:01 junk shot, correct?
11:45:01 A. That's reasonable, yes.
11:45:02 Q. If I don't actually get the reduction of the orifice size
11:45:10 down enough and get the flow rate down enough, then my Top Kill
11:45:14 is still not going to work if the flow is too high; you agree
11:45:17 with me, don't you?

11:45:18 A. I would agree that if the flow rate cannot be reduced to a
11:45:23 level at which the modeling indicates it would work, yes, it
11:45:26 wouldn't succeed, so yes.
11:45:27 Q. You understand that BP planned this Top Kill effort based
11:45:32 on a flow rate estimate of 5,000 barrels per day, don't you?
11:45:37 A. They initiated it based on a model that indicated up to
11:45:41 15,000 barrels a day it may work, or it wouldn't work beyond
11:45:45 15,000 barrels a day.
11:45:47 Q. I think we just had this a moment ago from your report,
11:45:49 that the modeling showed that it would not work at
11:45:52 15,000 barrels per day. You would agree with what you stated
11:45:54 in your report on that?
11:45:55 A. That's correct. What the modeling showed was that at
11:45:58 15,000 barrels a day or more, it wouldn't work.
11:46:01 Q. But that wasn't, in any case, my question. You
11:46:04 understand, don't you, that BP prepared the Top Kill operation
11:46:08 based on modeling at 5,000 barrels per day, correct?
11:46:18 A. The -- are you talking Top Kill or momentum kill at this
11:46:20 point?
11:46:22 Q. Were you here earlier in the day -- I shouldn't say in the
11:46:22 day -- earlier in the week when Mr. Holt's deposition testimony
11:46:26 clips were played?
11:46:28 A. I think I was, yes.
11:46:28 Q. You saw Mr. Holt say, didn't you, that the estimate BP was
11:46:33 relying on for Top Kill was 5,000 barrels per day; you saw

that, didn't you?
A. I think he said dynamic kill, didn't he?
Q. Yes, sir. Dynamic kill.
A. Yes. Slightly different, but yes.
Q. Fine, I'll accept that qualification.
You understood that, correct?
A. I understood that.
Q. You don't disagree with Mr. Holt, do you?
A. I don't disagree that he said that dynamic kill -- I think he was quite specific not to mix the two -- so yes.
Q. I'm not asking if you disagree that he said it. You don't disagree with Mr. Holt's testimony, do you, that the momentum kill was based on modeling at 5,000 barrels per day?
A. I have no reason to disagree with Mr. Holt's testimony, but the momentum kill -- or the modeling indicated -- and the modeling that was reviewed indicated that -- more than 15,000 barrels a day, the momentum kill aspect -- or the momentum kill option was unlikely to succeed.
So that was the governing factor on that, that if the flow rate could be reduced below 15,000 barrels per day, momentum kill stood a -- Top Kill stood a chance of success.
Q. Let me call out -- you earlier indicated -- sorry. Let's just pull up TREX -- call out TREX-140914.2.3.
What's the slide number that has both of them, is it .1?

11:48:15 MR. DOYEN: One moment, Your Honor.
11:48:53 EXAMINATION BY MR. DOYEN:
11:48:53 Q. Do you recall earlier -- while they are trying to get that
11:48:56 up, trying to understand what I'm saying -- do you recall
11:48:59 earlier in the day you saw the KWOP notes, Kill the Well on
11:49:06 Paper notes --
11:49:06 A. Yes, I did.
11:49:07 Q. -- in which it indicated, "Modeling indicates that a
11:49:11 dynamic kill cannot be successfully executed if the oil flow is
11:49:13 15,000 barrels per day," do you recall that?
11:49:16 A. I think that was agreed that the dynamic momentum kill
11:49:21 would struggle at 15,000 barrels per day or more.
11:49:24 Q. This is just another -- these are the meeting notes that
11:49:28 were introduced during in Mr. Dupree's testimony. You were
11:49:31 here for that, weren't you?
11:49:32 A. Yes, I was.
11:49:32 Q. He indicated these are notes from the morning meeting that
11:49:35 same day that the Kill the Well on Paper report came out.
11:49:40 Those notes indicate on the 18th -- let me step back for just a
11:49:44 second.
11:49:45 You understand that's a meeting between BP and
11:49:46 government people, correct?
11:49:47 A. Yes.
11:49:47 Q. It indicates, "The Red Team Kill Well on Paper," KWOP,
11:49:53 "review note should be out today. One of the outcomes from the

review was the verification of the fact that the kill could struggle if rates are significantly higher than the current estimates." Do you see that?

A. Yes, I see that. That related to the momentum dynamic kill aspect, but, yes, I see that.

Q. Understood.

A. Yeah.

Q. That's just a reference to the same thing that we saw in the Kill the Well on Paper report, right, where it says, "Modeling indicates that a dynamic kill cannot be successfully executed if the oil flow rate is 15,000 barrels per day"?

A. I believe that's the same reference.

Q. Okay. So you also understand this to mean that the current estimates are significantly less than 15,000, right? BP is telling the government here that the Top Kill will struggle if the rates are, you know, 15,000, significantly above current estimates? You understand that that's what this means, isn't it?

A. That's not my interpretation of it. My interpretation of it is that the rates presented at the Kill the Well on Paper meeting said that over 15,000 barrels per day, it would struggle. That statement didn't say that over 5,000 barrels per day, the Kill the Well on Paper -- the momentum kill would struggle.

Q. I may not be making myself clear.

11:51:16 A. Okay.
11:51:19 Q. This report is saying that 15,000 -- this and the Kill the
11:51:24 Well on Paper report say, at 15,000, we could struggle with the
11:51:28 dynamic kill, correct?
11:51:29 A. That is correct.
11:51:29 Q. This report is saying, we'll be struggling if the rates
11:51:34 are significantly higher than the current rates, i.e., 15,000
11:51:38 or more; that's what this says, right?
11:51:43 A. Well, that's what it could be interpreted. I think that's
11:51:44 a fair point.
11:51:46 My reading of that is that the dynamic momentum kill
11:51:53 could struggle if the rate is significantly above
11:51:56 15,000 barrels per day. I think that's -- if that's what
11:51:58 you're saying, I would agree with that.
11:51:59 Q. BP told the government the rates didn't need to be
11:52:02 significantly higher than 15,000, BP told the government that
11:52:05 there would be a problem if the rates were 15,000 barrels per
11:52:07 day; isn't that true?
11:52:08 A. Well, that was how it was presented at the Kill the Well
11:52:12 on Paper exercise, and the government were at that meeting.
11:52:14 Q. The very same day as these notes, correct?
11:52:16 A. I don't know the distribution on this list, but the
11:52:20 government scientists, they were at the Kill the Well on Paper
11:52:26 exercise, and they were notified at that meeting that
11:52:28 15,000 barrels per day was a potential limitation.

11:52:31 Q. You also understand, don't you, that the junk shot
11:52:32 procedure assumed a 5,000 barrel per day flow rate; isn't that
11:52:32 true?
11:52:38 A. The junk shot procedure was a -- flow rate independent,
11:52:44 but -- yeah, so I don't know what aspect that relates to.
11:52:49 Q. Let's pull up TREX-9148.1.
11:53:07 You understand this is the procedure for the junk
11:53:09 shot, don't you?
11:53:10 A. Yes, I do.
11:53:11 Q. All right. So let's turn to a page inside.
11:53:14 Call out TREX-9148.5.3.
11:53:24 Do you see where it says here, "Current BOP analysis,
11:53:27 pressure and ram location suggests that blind shear rams and/or
11:53:32 the casing shear rams are closed, but passing with a leak area
11:53:35 of .4 inches to .64 inches equivalent throat diameter based on
11:53:42 5,000 barrels per day total flow." Do you see that?
11:53:46 A. I read that. I also note it's from the introduction.
11:53:50 It's not the procedure. They are setting the scene there for
11:53:53 what the anticipated situation is.
11:53:55 The same issue in there, as well, is they don't know
11:53:58 what the leak area is either. So the key point in there,
11:54:01 they're saying passing of the leak area at .4 to .64, that's an
11:54:17 estimate --
11:54:17 MR. BRIAN: Well, the chairs don't lean back,
11:54:19 Your Honor.

11:54:19 THE COURT: Did you break it, or did you just lean back in it?

11:54:23 MR. BRIAN: I just leaned back.

11:54:24 THE COURT: Are you okay?

11:54:25 MR. BRIAN: I'm fine, Your Honor. Sorry.

11:54:29 THE COURT: All right. The government doesn't have any money, you know, so.

11:54:35 MR. BROCK: Get some duct tape.

11:54:37 MS. KARIS: I thought it was the answer knocked him off his chair.

11:54:46 MR. GODWIN: Got some good plaintiffs' lawyers in here, Judge.

11:54:50 THE COURT: He could probably get a card or two.

11:54:53 EXAMINATION BY MR. DOYEN:

11:54:53 Q. You see where in here it says, "Current analysis suggests a leak area .4 inches to .64 inches based on 5,000 barrels per day total flow." Do you see that?

11:55:04 A. I do see that. But, again --

11:55:08 Q. All I've asked, sir, so far is do you see that.

11:55:08 A. Yes, I see it.

11:55:12 Q. Let me frame the questions. That's how this works.

11:55:12 A. Sorry.

11:55:13 Q. You're not saying that because it says that in the introduction, it's not true, are you? It's a yes or no question. Is that your testimony that because it's just in the

11:55:22 introduction, it's not really true?
11:55:24 A. No. I'm not saying that.
11:55:25 Q. How big is -- .4 inches about -- about that big, isn't it?
11:55:36 Half an inch, PVC pipe, internal diameter?
11:55:40 A. Pretty small.
11:55:41 Q. So if a hole through the blind shear rams is no bigger
11:55:46 than that, and the well's only flowing at 5,000 barrels per
11:55:50 day, then the junk shot might work; you agree with that, don't
11:55:55 you?
11:55:58 A. The junk shot might work depending on the size of the junk
11:56:01 and a whole variation of hole sizes and junk sizes; but, yes,
11:56:07 it could work in a small hole or a big hole.
11:56:10 MR. DOYEN: Your Honor, this the probably as good a
11:56:12 place as any to break for lunch.
11:56:14 THE COURT: How much more do you have left?
11:56:16 MR. DOYEN: You know, my friends over here told me that
11:56:18 I cannot spend the entire four and a half hours that they have
11:56:22 so diligently provided me. An hour, maybe.
11:56:26 THE COURT: All right. Let's break for lunch. We'll
11:56:28 come back at 1:15, okay.
11:56:34 (WHEREUPON, at 11:56 a.m., the Court was in luncheon
recess.)

* * *

REPORTER'S CERTIFICATE

I, Cathy Pepper, Certified Realtime Reporter, Registered Merit Reporter, Certified Court Reporter of the State of Louisiana, Official Court Reporter for the United States District Court, Eastern District of Louisiana, do hereby certify that the foregoing is a true and correct transcript to the best of my ability and understanding from the record of the proceedings in the above-entitled and numbered matter.

s/Cathy Pepper

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