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1 AFTERNOON SESSION

2 (September 30, 2013)

3 THE COURT: Please be seated, everyone.

4 Before we resume testimony, let me just make a
5 comment because we have received some inquiries about what
6 happens if the people who work in Washington, D.C., don't come
7 to their senses by midnight tonight, which is looking more and
8 more likely.

9 As far as I can tell, it will not affect this
10 trial in any way. We remain open. We will continue to work
11 and proceed forward. It shouldn't interfere at all with what
12 we are doing. Whether people get paid is another thing, but
13 everyone here will keep working.

14 All right. Go ahead.

15 MR. LI: Your Honor, one quick piece of housekeeping.
16 Luis Li on behalf of the aligned parties.

17 We have checked with the parties, and no one has
18 an objection to fact witnesses being sequestered from the
19 trial. No fact witnesses have been in the trial.

20 THE COURT: I know there are very few fact witnesses
21 in this trial, so I didn't ask earlier. So what was your --

22 MR. LI: Just if we could have an order sequestering.

23 THE COURT: Sequestering those who are fact
24 witnesses? Okay. So just notify your fact witnesses to not
25 come into the courtroom until they are called. Okay. Both

1 sides.

2 **MR. LI:** Thank you, Your Honor.

3 The second thing, this is a slight departure
4 from Phase One procedure where we moved in evidence at the end
5 of the day. I have had a request from a number of folks if we
6 could move in Dr. Wilson's report, and CV in particular, which
7 is Exhibit TREX-11900. And I don't believe we have any --

8 **THE COURT:** Without objection, that's admitted.

9 **MR. LI:** Thank you.

10 **JOHN L. WILSON,**

11 having been duly sworn, testified as follows:

12 **THE COURT:** You may proceed.

13 **CROSS-EXAMINATION**

14 **BY MS. KARIS:**

15 **Q.** Good morning, Dr. Wilson. Hariklia Karis on
16 cross-examination on behalf of BP.

17 You testified about the modeling that you reviewed in
18 connection with rendering your opinions in this case, correct?

19 **A.** Yes. I reviewed hydraulic modeling.

20 **Q.** You have never been retained to assess the amount of oil
21 coming from an oil and gas well in an uncontrolled situation,
22 correct?

23 **A.** I've not been asked to assess the amount of oil coming
24 out.

25 **Q.** You have never, in fact --

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13:06 1 A. Cumulative.

13:06 2 Q. You have never done that in your career, try to figure out
13:06 3 the amount of oil and gas coming from an uncontrolled well?

13:06 4 A. I have never done that in my career.

13:06 5 Q. And likewise you have never been retained to perform any
13:06 6 hydraulic modeling to assess the amount of flow coming from an
13:06 7 uncontrolled well, correct?

13:06 8 A. Only insofar as that refers to an oil and gas well.

13:06 9 Q. So my statement is correct, you have never run hydraulic
13:06 10 modeling to assess how much gas and oil is coming from an
13:06 11 uncontrolled well, correct?

13:06 12 A. From a hydrocarbon well.

13:06 13 Q. Likewise you have never been retained to determine
13:07 14 whether, using the modeling that you are accustomed with, you
13:07 15 can, in fact, assess how much oil is actually coming from an
13:07 16 uncontrolled well, correct?

13:07 17 A. I'm not sure. You may need to repeat that question. I
13:07 18 didn't quite follow it.

13:07 19 Q. Sure. Sure. You have never been retained to model flow
13:07 20 rates of uncontrolled wells?

13:07 21 A. Again, that would be true for an oil and gas or a
13:07 22 hydrocarbon well.

13:07 23 Q. That's what Macondo was, correct?

13:07 24 A. Yes, that's correct.

13:07 25 Q. Now, you spoke a little bit about Momentum Kill, and I

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13:07 1 want to make sure we are in agreement. You have no prior
13:07 2 experience evaluating a Momentum Kill operation, correct?

13:07 3 A. That would be correct.

13:07 4 Q. And you have no experience evaluating the components of a
13:07 5 Top Kill operation, Dynamic Kill, for example?

13:08 6 A. Again, the physical principles here are widely applied in
13:08 7 other things. And so I have had experience with those other
13:08 8 kinds of applications, but I haven't had any experience with
13:08 9 hydrocarbon blowout well where something like that has been
13:08 10 tried.

13:08 11 Q. Am I correct that you have no prior experience evaluating
13:08 12 Dynamic Kills?

13:08 13 A. In oil and gas wells, yes.

13:08 14 Q. Now, you evaluated a number of different models that BP's
13:08 15 engineers ran, correct?

13:08 16 A. Yes. I evaluated their hydraulic modeling efforts.

13:08 17 Q. Some of those models included PIPESIM, correct?

13:08 18 A. Well, in my deposition I distinguished between a
13:08 19 conceptual model of how one views the system and the computer
13:08 20 code used to simulate it, and PIPESIM was one of those computer
13:08 21 codes.

13:08 22 Q. One of the other codes was PROSPER, MBAL, OLGA. Those are
13:08 23 the types of models that BP used in the work that you
13:09 24 evaluated, correct?

13:09 25 A. Those are the type of computer codes they used to run

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13:09 1 models of the well and the reservoir.

13:09 2 Q. And you have never in your professional career at any time
13:09 3 used any of the models that were used by BP's engineers and its
13:09 4 contractors in the April and May time period of 2010, correct?

13:09 5 A. Well, again, we have to distinguish between models and
13:09 6 codes. A model is essentially a conceptual model of something.
13:09 7 A code is a computer program. It's sort of the difference
13:09 8 between having used one computer program or another. I have
13:09 9 not used those particular computer programs.

13:09 10 Q. You have not used those models, correct?

13:09 11 A. Well, again, I made the distinction, as most of my
13:09 12 colleagues do, between models which are conceptual models and
13:09 13 computer code.

13:09 14 A model is something I might conceptualize, say,
13:09 15 doing finance, do it on an Excel spreadsheet or do it on some
13:09 16 other financial package. A code is the package I choose to
13:10 17 use.

13:10 18 Those are software packages that you are referring
13:10 19 to.

13:10 20 Q. If we can look at your deposition, page 49, line 24, to
13:10 21 page 50, line 3, were you were asked by me the following
13:10 22 question:

13:10 23 "QUESTION: Have you ever in your professional career
13:10 24 at any time used any of the models that were used by BP's
13:10 25 engineers and its contractors in April and May of 2010?"

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13:10 1 Did you give the following answer?

13:10 2 "ANSWER: No, I have not."

13:10 3 A. Yes. And I was referring to them at that time in terms of
13:10 4 their being computer codes, and I make that distinction
13:10 5 elsewhere in my deposition quite clear.

13:10 6 Q. Dr. Wilson, I just asked if you gave me that answer.

13:10 7 A. Oh, I gave you that answer.

13:10 8 Q. Thank you.

13:10 9 Now, whatever models, programs, codes you are
13:10 10 accustomed to using, you never used any of those in connection
13:10 11 with performing any hydraulic modeling for the Macondo well,
13:11 12 correct?

13:11 13 A. I never did my own modeling of the Macondo well.

13:11 14 Q. Is it correct that you never attempted to use any of those
13:11 15 models, codes, programs to see if you could generate a flow
13:11 16 rate estimate based on the information that was available in
13:11 17 April and May of 2010?

13:11 18 A. I was reviewing the efforts of BP engineers and
13:11 19 consultants and contractors and the modeling they did. I was
13:11 20 not attempting to do my own modeling of the Macondo's flow
13:11 21 rate.

13:11 22 Q. You agree that at no time in April and May of 2010 did BP
13:11 23 in its modeling attempt to model the flow rate coming from the
13:11 24 Macondo well, correct?

13:11 25 A. No. They attempted to model ranges of flow rates over

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1 this entire period of time. So, yes, they were modeling flow
2 rates from the Macondo well over and over and over again.

3 Q. If we can now look at your deposition, page 173, line 18
4 to 25.

5 MS. KARIS: If we can call that out, please.

6 BY MS. KARIS:

7 Q. Did I ask you the following question:

8 "QUESTION: I'm asking you, do you have an opinion as
9 to when BP engineers had sufficient tools and information
10 to model flow rates of what the actual flow rate was from
11 the Macondo well?

12 "ANSWER: At no time did BP attempt to model the
13 actual flow rate from the well."

14 Correct?

15 A. That's what it said, but we defined the word "actual flow
16 rate" earlier, and I made it very clear that at no time did BP
17 make an attempt to model the daily flow rate from the well, but
18 they modeled ranges of flow rates. And earlier on this page
19 you will see that I make that specifically clear.

20 Q. We'll get to that. But can you tell me, in the BOPD, when
21 we are running models and we get a figure and it says BOPD,
22 what does that acronym stand for? Is it barrels of oil per
23 day?

24 A. BOPD stands for barrels of oil per day, that's correct.

25 Q. What that is modeling is the rate for the day, correct?

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1 A. No. It's modeling a flow rate, and in this case it was
2 ranges of flow rates, indicating the likely range of flow rate
3 that would be coming from the well but not necessarily
4 suggesting that a particular number, one of those dots on this
5 chart over here, was the flow rate on a particular date.

6 Q. Can we agree at least, then, that at no time did anyone at
7 BP ever attempt to model what was the actual flow rate for a
8 particular day?

9 A. Looking over the record, I saw little evidence that they
10 were trying to predict the actual flow rate on a certain day.
11 They were trying to predict ranges of flow rates.

12 Q. We will get to what the ranges reflect, I promise. But at
13 least we can agree nobody attempted to model the actual daily
14 flow rate from the Macondo well, correct?

15 A. That is my understanding.

16 Q. Now, in your report you acknowledge that there were
17 challenges presented to modeling because of uncertainties that
18 existed with respect to the well, correct?

19 A. There was a great deal known about the well, the
20 reservoir, and the fluids, but there were challenges to that
21 knowledge in terms of the connection between the well and the
22 reservoir, the flow path through the well, and conditions of
23 the BOP and riser.

24 MS. KARIS: If we can pull up 11900.8.2, please.

25

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1 13:14 BY MS. KARIS:

2 13:14 Q. This is from your report, correct?

3 13:15 A. Yes. It looks like it.

4 13:15 Q. You begin by saying, "Nevertheless, BP engineers and their
5 13:15 contractors were challenged by some uncertainty, mostly created
6 13:15 by the accident," correct?

7 13:15 A. Yes. And that's what I was just referring to in my
8 13:15 comment.

9 13:15 Q. You go on to say that "during the abandonment procedures
10 13:15 and just before the accident, there was an attempt to cement
11 13:15 the well, to seal it from the reservoir. Without knowing more
12 13:15 about the accident, the degree to which the seal was disrupted
13 13:15 was unknown," correct?

14 13:15 A. That's what it says.

15 13:15 Q. And what, in essence, that is saying is it was unknown how
16 13:15 much of the reservoir was exposed based on the cementing
17 13:15 operations, correct?

18 13:15 A. Well, it's saying there is uncertainty with regard to
19 13:15 that. We know that there was a communication. There wouldn't
20 13:15 have been a blowout. We know that this well was not developed
21 13:15 to the point to which it was the most productive well in the
22 13:16 Gulf of Mexico, although maybe it was. And we know that it was
23 13:16 not closed.

24 13:16 So there was a range of possible connections between
25 13:16 those two end conditions. So it was not unknowable, but there

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1 was uncertainty regarding it.

2 Q. There was a range somewhere between 1 foot exposed to
3 88 feet exposed. That was the range, correct?

4 A. Well, there's more to it than how much was exposed, but I
5 don't --

6 Q. That's one variable?

7 A. I don't think that was a variable that ranged as much as
8 you suggest.

9 Q. Okay. Now, it goes on to say -- and we'll see some
10 communications about what others think about whether the range
11 was in that field, perhaps communications you looked at in
12 reaching your opinions.

13 Depending on the damage there were several possible
14 fluid flow paths, correct?

15 A. Yes.

16 Q. And that was one of what you identified as the challenges
17 of some of the uncertainty created by the accident, correct?

18 A. Yes. Those different flow paths were each evaluated and
19 the flow occurring for each of them was evaluated by running
20 simulations.

21 Q. And then the blowout itself created the uncertainty as to
22 whether the BOP, the blowout preventer, had failed to close,
23 correct?

24 A. Oh, yes.

25 Q. And there was also uncertainty as to how much, if at all,

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13:17 1 obstruction or choke that was causing, correct?

13:17 2 A. There was uncertainty about the obstructions in the BOP
13:17 3 and how that would restrict flow.

13:17 4 Q. It was unknown whether any one of the variable bore rams
13:17 5 had activated, whether the blind shear ram had activated, and
13:17 6 whether all of them together were causing any restriction,
13:17 7 correct?

13:17 8 A. Well, it's probably more complex than that.

13:17 9 Q. But that's a simple way of identifying some of the
13:17 10 unknowns associated with the BOP, correct?

13:17 11 A. There were a series of obstructions in the BOP which were
13:17 12 not clear. As time went on, it became more clear what they
13:17 13 were, and they were represented by some simple equivalent
13:18 14 resistance factors in the modeling.

13:18 15 Q. And we'll talk about what became known. But at least
13:18 16 initially, in these early days where you show the modeling that
13:18 17 BP was doing, those were some of the challenges in connection
13:18 18 with trying to understand the conditions of the well, correct?

13:18 19 A. Yes, they were.

13:18 20 Q. And similarly it was unknown what, if any, restriction the
13:18 21 kink that existed in the riser -- what restriction that was
13:18 22 causing. That was yet another unknown, correct?

13:18 23 A. Well, there was some uncertainty about that restriction.
13:18 24 It was not unknown. The geometry of the kink was modeled by BP
13:18 25 engineers, and they could have done, in fact, did do some

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13:18 1 calculations as to what kind of restriction it was.

13:18 2 Q. That's what they were trying to understand, is, what might
13:18 3 this look like and what effect might it have depending on what
13:18 4 restriction it's causing, correct?

13:18 5 A. They were doing that, plus when they got a pressure
13:19 6 measurement at the bottom of the BOP, they had additional
13:19 7 information that gave them some idea of the extent of the choke
13:19 8 in the BOP and in the riser. The choke is a restriction to
13:19 9 flow we are talking about.

13:19 10 Q. Would you agree with me that in totality the unknowns
13:19 11 included the condition that the cement was in, included the
13:19 12 damage to the architecture of the BOP, the condition of the
13:19 13 kink in the riser, and what, if any, role or restriction any
13:19 14 one of these was playing to flow? Those were some of the
13:19 15 unknowns?

13:19 16 A. Well, I wouldn't call them unknowns in that way. I would
13:19 17 say those are uncertain attributes of this system which were
13:19 18 explored by doing multiple simulations in the scenario analysis
13:19 19 approach to get a range of flow rates that take into account
13:19 20 all of those uncertainties.

13:19 21 Q. Did you look at whether the government, in trying to
13:20 22 understand flow, had identified those uncertainties and
13:20 23 concluded, based on those uncertainties, you cannot know what
13:20 24 the flow rate is?

13:20 25 A. Well, I know the government scientists were concerned with

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1 those same uncertainties.

2 Q. And did they conclude that because of those uncertainties,
3 in their attempt to use modeling, they could not determine what
4 the range of flow was?

5 A. Well, in the period of time I reviewed, to the end of May,
6 there were no serious attempts to model flow rate using the
7 hydraulic model by the government. But there were attempts
8 later by the Flow Rate Technical Group, and they, in fact, did
9 model flow rate using these kind of hydraulic approaches.

10 Q. They modeled the flow rates using these kinds of hydraulic
11 approaches after the capping stack was shut in on July 15 and
12 additional information about these parameters became known,
13 correct?

14 A. That is correct, but they had not spun up to do this in
15 May. It was only after they spun up, and that was later, in
16 June and July, that they were able to attempt something like
17 this. And at that time, as additional information became
18 available, as we talked about earlier this morning, that
19 additional information is valuable. They were going to hardly
20 ignore it and go back to look at things as if they were back in
21 May.

22 Q. Did you look -- you said they hadn't spun up an effort to
23 do that before the capping stack, if I heard you correctly.

24 Did you look at whether the government, using these
25 exact same unknowns that are in your report, had concluded that

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1 modeling was not a useful exercise in attempting to understand
2 the flow coming from the Macondo well based on these unknowns?

3 My only question is whether you looked to see if the
4 government had tried to do that same work.

5 A. I was not reviewing the government's work. I saw it
6 incidentally. I saw comments about the challenges of trying to
7 do something like this in May. Saw no attempt to do it at that
8 time.

9 Q. We'll talk about why they didn't attempt to do it, whether
10 it had to do because they recognized that you cannot use the
11 information known at the time in order to estimate flow.

12 Do you know whether that was their conclusion?

13 A. No, I don't know that that's their conclusion. But I know
14 BP did not include that because they did for weeks model flow
15 rate and got multiple results shown on this diagram. So
16 clearly there was enough information to model flow rate and get
17 a range of flow rates as an outcome to test the uncertainty of
18 their knowledge about this system.

19 Q. Let's look at some of what the government concluded.
20 First of all, you know who Dr. Tom Hunter is, correct?

21 A. Yes.

22 Q. Dr. Hunter, he is the director of the Sandia National
23 Labs, correct?

24 A. He was the director.

25 Q. He was. I'm sorry. He was. And he was the co-lead of

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1 the Federal Science Team, correct?

2 A. Yes. He was involved in that leadership activity.

3 Q. Did you review his deposition in connection with rendering
4 your opinions in this case?

5 A. I don't recall whether I reviewed it in preparation for my
6 opinions, but I've reviewed it certainly since then.

7 Q. You have reviewed it after you rendered your opinions in
8 this case?

9 A. I don't recall whether I had reviewed it before and
10 whether I have cited it in my report, but I certainly reviewed
11 it at some point in time.

12 MS. KARIS: If we can pull up D-24273.8, please.

13 BY MS. KARIS:

14 Q. Again, we are talking about what the government thought
15 about the data and information that existed and whether you can
16 reliably estimate flow.

17 The middle picture there, that's Dr. Hunter, correct?

18 A. Yes.

19 Q. Did you see in his deposition where he was asked:

20 "QUESTION: Based on the data that existed in May of
21 2010, excluding data that came to exist after the fact, do
22 you think you could calculate a credible flow rate for any
23 particular day of May of 2010 just using the data that
24 existed in May of 2010?

25 "ANSWER: In terms of data from the well, there was

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1 not sufficient data from the well to make a flow rate
2 estimate."

3 Correct?

4 A. Well, there we go again. He is talking about -- the
5 question is asking for an actual flow rate for a particular
6 day. BP wasn't trying to do that and the National Labs were in
7 no better position than BP in making such an estimate. So --

8 Q. When the FRTG was --

9 MR. LI: Objection.

10 THE COURT: Go ahead and finish your answer, sir.

11 THE WITNESS: I think I'm done.

12 BY MS. KARIS:

13 Q. Do you know who Dr. Ratzell is, Art Ratzell from the
14 Sandia National Labs?

15 A. It's a familiar name.

16 Q. Was he attempting to estimate the flow rate that existed
17 in the summer of 2010?

18 A. I don't recall.

19 Q. He was asked:

20 "QUESTION: You need both an appropriate model and
21 accurate data to get an accurate result; is that correct?

22 "ANSWER: That would be my position.

23 "QUESTION: And you did not have the accurate data
24 necessary to get an accurate result prior to the capping
25 stack."

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1 13 : 2 5 1 That's July 15.

2 13 : 2 5 2 "QUESTION: Is that correct?

3 13 : 2 5 3 "ANSWER: The team believed that it lacked the data
4 13 : 2 5 4 and the confidence in that data."

5 13 : 2 5 5 Correct?

6 13 : 2 5 6 A. Once again, this is aimed at what sometimes is called by
7 13 : 2 5 7 some BP people a single point estimate, a single number.

8 13 : 2 5 8 The issue here is -- and accuracy refers to that.
9 13 : 2 5 9 And accuracy here is for that kind of estimate of a single flow
10 13 : 2 5 10 rate. But what could be done to handle the uncertainty is to
11 13 : 2 5 11 estimate the range of variability of possible flow rates in
12 13 : 2 5 12 this system which would then constitute the approach that BP
13 13 : 2 6 13 took during this period of time.

14 13 : 2 6 14 Q. Are you familiar with the Flow Rate Technical Group?

15 13 : 2 6 15 A. Yes.

16 13 : 2 6 16 Q. Did you look at the work they did?

17 13 : 2 6 17 A. I looked at some of it, yes; not in preparation of my
18 13 : 2 6 18 report in this case, but for other reasons.

19 13 : 2 6 19 Q. Are you aware that the Flow Rate Technical Group was
20 13 : 2 6 20 convened by the national incident commander, Admiral Allen, for
21 13 : 2 6 21 understanding the flow rate from the Macondo well?

22 13 : 2 6 22 A. Yes. Apparently, for one reason, they were getting very
23 13 : 2 6 23 little flow rate information from BP and so decided they had to
24 13 : 2 6 24 do it on their own. The government could not depend on BP for
25 13 : 2 6 25 this purpose.

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1 MS. KARIS: I'm going to move to strike that.

2 BY MS. KARIS:

3 Q. That's nowhere in your opinions and report, is it?

4 A. I would have to think about that.

5 MS. KARIS: Your Honor, I would move to strike that
6 comment.

7 MR. LI: Your Honor, she opened the door to that.

8 THE COURT: I'm not going to strike it.

9 BY MS. KARIS:

10 Q. Let me ask you this, Dr. Wilson: Do you know who Steven
11 Aoki is?

12 A. He worked for the National Labs, as I recall. I'm not
13 sure what lab or what organization he actually works for, but
14 it could be Sandia. I don't know.

15 MS. KARIS: If we can pull up TRES-9709.1.2.

16 BY MS. KARIS:

17 Q. Is this a communication that you looked at in connection
18 with rendering your opinions in this case -- we put it back,
19 but it's from Mr. Aoki -- dated May 17, 2010?

20 I believe you told me you didn't think the government
21 was trying to understand the flow rate in May of 2010.

22 A. I don't know whether I have seen -- well, I may have seen
23 this e-mail before, but I don't know whether I relied on this
24 for my expert report.

25 Q. Okay. I asked you previously whether the government had

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1 concluded, based on the data that existed, that it could not
2 reliably estimate flow using hydraulic modeling.

3 And let's see what Mr. Aoki says. He begins by
4 saying: "National Laboratory scientists and supercomputers are
5 being used to model conditions of the leaking well."

6 Do you know what those government supercomputers are?

7 A. Yes.

8 Q. And what they are trying to do using those supercomputers
9 is to model the conditions of the well, correct?

10 A. At this point in time, in mid-May, they weren't modeling
11 this whole system or even substantial parts of it but subparts
12 of it in support of questions they got from BP.

13 Q. And what they were trying to do at this point in time is
14 understand what the conditions of the well were, correct?

15 A. Well, they were modeling conditions in the well. Most of
16 their model results seemed to be aimed at validating answers
17 that BP had gotten in their own models on subcomponents of the
18 system.

19 Q. Were they using their own supercomputers to attempt to
20 model the conditions of the well, of the entire system of the
21 well? Do you know? Yes or no.

22 A. Well, according to this, they are doing that, but they
23 weren't doing whole system models that I ever saw.

24 Q. All right. Now, you never looked to see what the
25 government was doing in connection with rendering your opinions

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1 in this case; isn't that correct?

2 A. I never purposely went out and searched for those. There
3 was nothing in the communication at BP hearing about DOE -- let
4 me finish -- DOE things. And the Flow Rate Technical Group,
5 which is not the same as the Federal Scientists Group here,
6 didn't really spin up until later, and they didn't do any
7 modeling until much later.

8 Q. BP wouldn't have had access to this document that the
9 government was creating and communicating internally as to what
10 it was doing, and you never looked to see whether the
11 government was trying to use the same hydraulic modeling to
12 understand the condition of the well and concluded you could
13 not do that because of the lack of information.

14 You didn't look for that, correct?

15 MR. LI: Objection, compound.

16 THE COURT: Can you answer that?

17 THE WITNESS: I'm not sure about the last part of
18 your question because it seemed to be a multiple-part question.

19 THE COURT: Why don't you restate it.

20 MS. KARIS: Sure.

21 BY MS. KARIS:

22 Q. In connection with rendering your opinions in this case,
23 you did not look at the government's internal communication to
24 see whether they were trying to understand flow rate using
25 hydraulic modeling in May of 2010, correct?

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1 A. I did not look at internal communications of the
2 government. I did read government reports. Those government
3 reports referred to the initiation of their modeling efforts.
4 Regarding the Flow Rate Technical Group, that was later than
5 the period we are talking about in terms of hydraulic modeling.
6 Regarding the DOE Federal Scientists Group, they were using
7 models in a much more limited way than BP was doing in doing
8 all of these calculations in April and May.

9 Q. What the government concluded on May 17, as stated here by
10 Mr. Aoki, is that "estimating the rate at which oil is being
11 discharged is a complicated problem. An accurate computer
12 calculation will depend critically on information that we
13 currently do not have about the internal state of the well and
14 the devices attached to it," the blowout preventer, correct?

15 MR. LI: Your Honor, I object to the term
16 "government."

17 BY MS. KARIS:

18 Q. What Mr. Aoki, from the Department of Energy, was doing,
19 correct?

20 A. Yes. This is down in the organizational structure
21 somewhere.

22 But once again, notice this is emphasizing an
23 accurate computer calculation, sort of in BP's words, a single
24 point calculation.

25 Ranges of flow rate, probabilistic assessments of

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1 flow rate is something National Labs do and could have done in
2 this case had they had all the information they needed to have
3 from BP. The simulations we see over here show that kind of
4 information was available and could have been used.

5 National Labs did not have it, apparently. Otherwise
6 why would he have written this?

7 Q. What they conclude there is they didn't have information
8 about the internal state of the well, whether the cement had
9 worked, whether there were restrictions in the BOP, and the
10 like, correct?

11 A. Yes. But had they attempted a probabilistic view of this,
12 one dealing with uncertainty, I'm sure they would have been
13 happy to go ahead, given that opportunity.

14 MS. KARIS: Let's look at TREN-9710.1.2, please.

15 BY MS. KARIS:

16 Q. And to move through this quickly, this is another internal
17 government communication, May 21, 2010.

18 Did you consider this in connection with rendering
19 your opinions in this case?

20 A. Once again, I can't recall whether I did or not. I may
21 have seen this e-mail in the past. I don't recall.

22 Q. You testified that BP had not shared its modeling with the
23 government, correct?

24 A. BP had not shared its flow rate results with the
25 government coming from the modeling effort.

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1 Q. In the second paragraph there it says: "In a telecon with
2 BP yesterday afternoon, they have modeled the porous media flow
3 from the reservoir, through the 'skin,' to estimate a flowing
4 pressure at the bottom of the wellbore."

5 Do you know what information BP shared on this
6 telecon regarding modeling that BP had performed for flow with
7 respect to skin?

8 A. No, I do not. But it obviously wasn't visual information
9 because it was a telecon.

10 Q. It goes on to say that the state of the skin is a big
11 unknown, correct?

12 A. That's apparently how BP characterized it to them.

13 Q. This is Dr. Decroix. He is not BP, correct?

14 A. No, but these are obviously his notes from that meeting
15 and presumably his notes recording to some extent what BP had
16 indicated over the telecon.

17 Q. Do you have any evidence anywhere that it was BP that said
18 the state of the skin is a big unknown, rather than Dr. Decroix
19 reaching that conclusion on his own?

20 A. Well, I think context tells us that, but that's about all
21 I have. He is listening to a telecon. He is not going to go
22 out and extrapolate from that.

23 MS. KARIS: If we can now look at 9710.1.3.

24 BY MS. KARIS:

25 Q. Again, this is Dr. Decroix. In connection with -- by the

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1 way, a title that says "Further on the national incident
2 commander Flow Rate Working Group."

3 He says: "As stated below, there is a lot" -- in
4 capitals -- "that is unknown about the state of the wellbore
5 completion zone. So I don't know if it is that useful to
6 embark upon this type of modeling effort."

7 That's what he writes, correct?

8 A. That's what it says.

9 Q. He goes on to say, "Large uncertainty exists with what
10 data is available and thus calculations/models could vary
11 widely. I don't know how much added value we could contribute
12 here," correct?

13 A. That's what it said.

14 And he is talking about added value. Now, notice, BP
15 presented apparently in this telecon a variety of flow rates
16 which were not conveyed in any form in writing to the
17 government that I have seen.

18 Q. What were those flow rates that BP presented to the
19 government on May 21?

20 A. Well, to this National Lab Group, we don't know. And we
21 don't necessarily know who did it, although I suspect I know.

22 Q. But at least this e-mail suggests or says that BP provided
23 the government on May 21 with some estimates based on modeling
24 it had done around the issue of skin, correct?

25 A. Well, I think information conveyed to government

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13:35 1 scientists who were down in the trenches on the telecon is not
13:36 2 quite the same as conveying that information to government
13:36 3 decision makers, like Secretary Chu or Marcia McNutt of the
13:36 4 USGS or other government decision makers.

13:36 5 Q. Was the Federal Science Team, including Mr. Decroix,
13:36 6 working at the direction of Secretary Chu?

13:36 7 A. This would be within the chain of command with
13:36 8 Secretary Chu at the top.

13:36 9 Q. These folks on this communication were working at the
13:36 10 direction and for Secretary Chu, correct?

13:36 11 A. It's certainly my impression that's -- I can't be certain
13:36 12 from what's here.

13:36 13 Q. BP gave them some modeling about skin. You don't know
13:36 14 what modeling that is, correct?

13:36 15 A. No, they didn't give them modeling. They had a telecon,
13:36 16 and over the telecon they announced certain pieces of
13:36 17 information. They did not provide a written report, e-mail, or
13:36 18 correspondence on this to go into the record. There was no
13:37 19 record of this, as we just talked about.

13:37 20 Q. They gave them some flow rates, but you don't know what
13:37 21 they are because there's no written record of them, correct?

13:37 22 A. It's a telecon, so they conveyed orally certain
13:37 23 information to them. That's completely different than a
13:37 24 written report that actually reaches a decision maker that
13:37 25 matters.

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13:37 1 Q. Let's move on. You did not look at what proprietary data
13:37 2 BP provided to the Minerals Management Service in connection
13:37 3 with the Macondo well, correct?

13:37 4 A. I'm not sure -- would you say that again?

13:37 5 Q. Sure. Did you look at what proprietary data regarding
13:37 6 permeability, porosity, well design BP provided to the
13:37 7 government in connection with the Macondo well?

13:37 8 A. No, I did not go looking for that, although I saw
13:37 9 information to that effect.

13:37 10 Q. You saw information that BP did in fact provide that to
13:37 11 the government, correct?

13:37 12 A. I saw information about -- saying that some information
13:37 13 was provided to the government. I saw depositions regarding
13:38 14 that and some e-mails.

13:38 15 Q. Is it correct that you did not --

13:38 16 A. Oh, by the way, can I just add something?

13:38 17 Q. Go ahead.

13:38 18 A. That information was regarding parameters and properties,
13:38 19 like permeability or thickness of the reservoir or something.
13:38 20 It wasn't regarding flow rate itself.

13:38 21 Q. It was regarding properties of the well, correct?

13:38 22 A. Information about the well and the reservoir.

13:38 23 Q. Now, I think we already covered this, but just to be
13:38 24 clear, you excluded from your consideration any modeling that
13:38 25 had been performed by the United States government and its

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1 agencies in April and May of 2010, correct?

2 A. Yes, that's excluded from my opinions.

3 Q. Now, I believe you testified on direct that you didn't see
4 any evidence that BP gave the government flow rate numbers
5 higher than 5,000 based on all this early modeling that had
6 been performed. Did I hear that correctly?

7 A. Yes. Those are numbers alleged by BP to be best estimates
8 or most likely estimates. BP did give other, worst-case
9 discharge estimates, where worst-case discharge was typically
10 an unconstrained flow from the reservoir to the bottom of the
11 ocean seabed without a BOP in place or without damage to the
12 connection between the reservoir and the well.

13 And then in the original permit application, it had
14 been an open borehole. And subsequently they put in the actual
15 well and had flow up the casing or up the annulus.

16 They did it, some special cases on worst-case
17 discharge. But those worst-case discharge estimates were
18 completely different from the ones marked on here in red, which
19 are mostly likely or best case.

20 Q. You have on here not only most likely or best case; you
21 have on here a bunch of lines that go to worst-case discharge,
22 do you not?

23 A. If the simulation was done, it's on this chart.

24 Q. Right. And that would include worst-case discharge
25 calculations, correct?

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1 A. Yes, it does.

2 Q. And some of these early worst-case discharge calculations,
3 would you agree with me that BP told the government that the
4 worst case could be as high as 100,000 barrels in early May?

5 A. In early May, I believe they did, but I would have to go
6 back and verify that.

7 Q. Thank you.

8 A. They certainly did later.

9 Q. And so when you suggested that they had all these high
10 rate numbers, some of these high rate numbers were the result
11 of worst-case discharge calculations, and BP provided those to
12 the government, correct?

13 A. The numbers toward the top of this chart are the
14 worst-case discharges. The numbers on the bottom of the chart
15 with the big red dots are the most likely discharges, according
16 to BP. And there are an enormous number of discharges between
17 the two much higher than 5,000 or 15,000 that were done in the
18 hydraulic modeling but not provided.

19 MS. KARIS: Your Honor, if I could just get an answer
20 to the question of whether BP provided worst-case discharge
21 numbers resulting from this hydraulic model.

22 THE COURT: Well, I think he answered your question.

23 BY MS. KARIS:

24 Q. Now, the government was aware that the worst-case
25 discharge coming from the Macondo well could be as high as

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1 100,000 barrels throughout the time of these source control
2 efforts, correct?

3 A. Well, there were various estimates of worst-case discharge
4 provided by BP in that order of magnitude.

5 Q. So when the source control decisions were being made, the
6 government had that information that the worst-case discharge
7 numbers could be as high as 100,000 barrels, correct?

8 MR. LI: Your Honor, I object to the term
9 "government." Which branch? Who?

10 MS. KARIS: The United States government that was
11 involved in the response.

12 MR. LI: Same objection, Your Honor.

13 THE COURT: Overruled.

14 BY MS. KARIS:

15 Q. When the United States government was making decisions
16 with respect to source control, it knew or had information that
17 the worst-case discharge could be as high as 100,000 barrels,
18 correct?

19 A. Yes. Numbers of that order or magnitude, which it used
20 primarily to guide operations at the surface regarding the oil
21 that reached the surface. But the -- for that purpose,
22 marshaling resources, just get everything you can. You still
23 have trouble with it. That makes sense. But in terms of the
24 discharge used to guide well control activities at the seabed,
25 that's a totally different story. You want accurate estimates

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1 for that purpose.

2 Q. Admiral Allen was involved both in surface discharge
3 response or surface response, but also in source control
4 response efforts, correct?

5 A. He had that responsibility, but his level of expertise and
6 knowledge was pretty much aimed at the surface and not at the
7 seabed.

8 Q. And as a result, the Federal Science Team was brought in
9 and put at BP's Houston offices to work with BP's engineering
10 teams, correct?

11 A. There were federal scientists there, and there were some
12 BP people there as well.

13 Q. And that Federal Science Team, with its expertise,
14 included folks from the National Labs, correct?

15 A. To the best of my knowledge, yes.

16 Q. It included folks from various universities: LSU, Texas
17 A&M, and a variety of other academic institutions, correct?

18 A. I don't know that.

19 Q. It included folks from the industry, from Exxon, from
20 Shell, and from other members of the industry, correct?

21 A. I don't know that. I know in my review of the record on
22 the modeling, only once was another person from the industry
23 brought in to look at any of the efforts going on.

24 Q. In evaluating source control decisions, were there members
25 of both the industry, academia, and the federal government?

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1 A. I did not review the source control efforts themselves,
2 only the hydraulic modeling which was done in support of that
3 source control effort. So I can't speak to who may have been
4 involved outside of BP and the government in conferring on
5 that.

6 Q. Okay. Now, one of those source control efforts that you
7 did look at, though, and offer opinions about is Top Kill and
8 what effect hydraulic modeling had on Top Kill, correct?

9 A. I looked at hydraulic modeling in reference to Top Kill,
10 not the effect that hydraulic modeling had on Top Kill, but
11 rather what hydraulic modeling said about the probability of
12 success of Top Kill.

13 Q. At least with respect to assessing Top Kill, which you
14 opined about, can we agree that the industry, academia, the
15 United States government, and BP all considered and evaluated
16 Top Kill?

17 A. Again, I did not look at source control efforts themselves
18 such as the Top Kill but rather the hydraulic modeling that was
19 done in support of that. I do know the hydraulic modeling done
20 by BP, by Ole Rygg at ADD Energy, the contractor consultant for
21 the Top Kill, was not provided in any official way to the
22 government decision makers.

23 Q. We are going to talk about Dr. Rygg's modeling, but would
24 you agree with me, Dr. Wilson, that you are not offering any
25 opinions on what the United States government would have done

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1 differently regarding source control had BP provided its flow
2 rate modeling?

3 A. I'm not going to offer an opinion about -- I haven't
4 offered an opinion. I mean, this is -- I have already offered
5 my opinions about what they would have done. What I would
6 offer is that they would have liked to have the opportunity to
7 do something different. This came out very clearly in the
8 depositions of Secretary Chu, Marcia McNutt of the USGS, of
9 Lars Herbst and several other people I reviewed. So they would
10 have liked to have had the chance to know about it.

11 Q. You do not intend to offer any opinions to this Court, in
12 your report or elsewhere, on what the government would have
13 done differently had BP provided the government with the
14 modeling you contend should have been provided; is that
15 correct?

16 A. I will not offer an opinion, have not offered an opinion
17 on what the government would have done differently had they
18 been properly informed.

19 Q. Now, you talked about Top Kill and you referenced
20 Dr. Rygg's modeling. Do you agree that Dr. Rygg's modeling is
21 limited to Momentum Kill?

22 A. Yes, I believe I mentioned that in my direct testimony
23 that that's what he was looking at.

24 Q. Just to avoid any confusion, Top Kill is a two-part
25 component. The first one is Momentum Kill. The second one is

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1 Junk Shot. Correct?

2 A. There are two components, but they are interwoven in the
3 actual execution of the exercise.

4 Q. But at least they are two separate components of the
5 Top Kill aspect, correct?

6 A. Conceptually separate, operationally integrated.

7 Q. Now, Dr. Rygg's modeling, it was limited to Momentum Kill
8 even though you just told us that they were integrated,
9 correct?

10 A. Yeah. The modeling was referring to the Momentum Kill.
11 The operation involves sequentially injecting mud and then a
12 junk and so on. So the mud part of that operation is what he
13 was looking at, that injection of mud.

14 Q. Dr. Rygg's modeling doesn't tell you anything about the
15 success of the Junk Shot operation and flow rates, correct?

16 A. No, that's not quite correct. I believe I mentioned this
17 on direct. If the flow rate is sufficiently high such that the
18 Momentum Kill doesn't work, that also suggests the flow rate is
19 sufficiently high because there's not a lot of obstructions in
20 the BOP and if there are fewer obstructions in the BOP, there's
21 less chance that Junk Shot would succeed just by a matter of
22 physics.

23 Q. Let's look at Dr. Rygg's testimony in this case.

24 MS. KARIS: If we can look at 0491.208.1.

25

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1 BY MS. KARIS:

2 Q. You called him a preeminent expert in modeling, correct?

3 A. Yes, flow modeling.

4 Q. Flow modeling.

5 He was asked by Mr. Lundy:

6 "QUESTION: If you can't stop the flow, assuming it's
7 15,000 barrels a day and the maximum pump rate is
8 50,000 barrels, the Junk Shot would be ineffective as
9 well, correct?

10 "ANSWER: No.

11 "QUESTION: Why not?

12 "ANSWER: The Junk Shot hasn't anything to do with
13 this modeling. The Junk Shot and the whole purpose of the
14 Junk Shot is to reduce the opening of the flow, meaning
15 that the flow rate then is reduced from what it was before
16 they started the operation.

17 "This modeling here doesn't have anything to do
18 with the Junk Shot. So don't deduce anything on the
19 Junk Shot based on this modeling."

20 Correct?

21 A. That's what he says.

22 Q. And then do you know who Mr. --

23 A. But I disagree with him.

24 Q. You disagree with Dr. Rygg, who is the preeminent expert
25 on doing Momentum Kill modeling, correct?

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1 A. I do disagree with him, and let me explain.

2 Q. No, I didn't ask for an explanation. That's fine.

3 A. I would like to offer one.

4 MR. LI: I ask he be allowed to answer.

5 THE COURT: Let him explain.

6 THE WITNESS: In my direct I mentioned that these are
7 two separate things and that the modeling that he did had
8 nothing to do specifically with Junk Shot. He was modeling the
9 Momentum Kill. But that as a fundamental principle, if the
10 flow rate is so high that the Momentum Kill fails, then there
11 are likely to be larger openings, indicating a slightly higher
12 probability the Junk Shot won't work.

13 Now, that's not to say that the Momentum Kill
14 could fail without a Junk Shot but then succeed with it, which
15 is what he is referring to. It's simply a matter of physics
16 that if the Junk Shot -- if the Momentum Kill fails, the flow
17 rate is higher, the flow rate is higher, there's less
18 obstruction, there's less obstruction, there's less stuff for
19 the junk to catch on, and that's what I was referring to. We
20 were referring to two different things here.

21 BY MS. KARIS:

22 Q. Okay. Did you review Mr. Barnett's testimony as to
23 whether he thought that flow rate is a part of evaluating the
24 success of Top Kill?

25 A. Is that Wild Well?

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13:51 1 Q. Correct.

13:51 2 A. Yes.

13:51 3 Q. They are well control specialists, aren't they?

13:51 4 A. Yes.

13:51 5 Q. And you've told us they have expertise in Top Kill,
13:51 6 correct?

13:51 7 A. They have expertise in controlling blowouts, yes.

13:51 8 Q. I believe you testified that you looked at their
13:51 9 conclusions after Top Kill as to what the likely reason for the
13:51 10 failure of Top Kill was, correct?

13:51 11 A. Yes. At the end of May, May 31, they wrote a memo
13:51 12 describing their view on the Top Kill operation.

13:51 13 Q. All right. And let's look at Mr. Barnett's testimony.

13:51 14 MS. KARIS: 022.234.1, please.

13:51 15 BY MS. KARIS:

13:51 16 Q. He was asked:

13:51 17 "QUESTION: And the whole purpose of the Junk Shot
13:51 18 portion of the Top Kill procedure would be to change the
13:51 19 orifice size so that the dynamic kill could be successful
13:51 20 regardless of the initial flow rate, correct?

13:51 21 "ANSWER: Right. The idea was to reduce the flow
13:51 22 path size by plugging it with various materials."

13:51 23 Do you agree with that?

13:51 24 A. Well, I disagree with part of it. Let me look at this
13:52 25 again.

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1 Q. Okay.

2 A. I would disagree with his response, "right," because of
3 the nature of the question itself. It says, "regardless of the
4 initial flow rate."

5 Q. That's what he is being asked about, right?

6 A. That's correct. What you would like is the Junk Shot
7 increases the probability of success for a Momentum Kill
8 because you're still depending on a Momentum Kill, but it is,
9 therefore, tied together with it.

10 So would a flow rate of greater than 15,000 and a
11 successful Junk Shot have led to the successful Top Kill? It's
12 possible, and I think that's what these people are talking
13 about. But the fact that it didn't succeed at 15,000 and with
14 the Junk Shot still didn't -- sorry, since it didn't succeed
15 with the Momentum Kill and still didn't succeed with the
16 Junk Shot, that means the flow rate was even higher than
17 15,000, in all likelihood.

18 Q. You didn't look at why Top Kill failed, correct?

19 A. I looked at the assessments of Wild Well Control and
20 people on-site at the time for their opinions as to why it
21 failed. I did not form my own independent opinion of the
22 failure.

23 Q. Now, you referenced a "circle of trust" e-mail. Do you
24 recall that?

25 A. Yes.

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1 Q. Can we agree that the circle of trust e-mail which you
2 referenced in your direct examination pertains to data
3 regarding Top Kill?

4 A. I recall that it was written after the Top Kill operation
5 and regarded, again, communications with regard to reasons for
6 failure, success or diagnosis of the Top Kill.

7 Q. If we can look at page 48 of your report, just to refresh
8 you. This is in your report. It says, "This e-mail responds
9 to Paul Tooms' e-mail that no one is to receive Top Kill data
10 outside the circle of trust."

11 That's the e-mail you were referencing on your
12 direct, correct?

13 A. I believe so, but I would have to check it out to be
14 absolutely certain. It seems to be.

15 Q. All right. Now, you testified on direct that Dr. McNutt
16 said she was not inside the circle of trust and I think you
17 chuckled a little, correct?

18 A. Yes. Her deposition was the first time that she heard
19 about this 15,000 barrels of oil per minute -- per day limit on
20 the success of the Top Kill -- Momentum Kill part that Ole
21 Rygg's simulations had done and her reaction was similar to all
22 the other senior decision makers in the government who
23 discovered upon deposition only, first time, that there was
24 this limit nobody had ever told them about and they were sort
25 of aghast and this was an example of it. When she was shown

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1 this particular e-mail, she responded with that quote, "I guess
2 I'm not inside the circle of trust."

3 Q. Do you know whether Secretary Chu was inside of that
4 circle of trust and received Top Kill data at the exact same
5 time BP was receiving it?

6 A. I'm not sure about him receiving Top Kill data, but he
7 certainly didn't receive information about the 15,000 barrels
8 of oil per day limit on success of the Momentum Kill.

9 Q. Did the government do their own independent assessments to
10 determine the likelihood of success of Top Kill?

11 A. They did not do hydraulic flow modeling and, therefore,
12 whatever else they might have done, I don't know. But my
13 limited review of the government's modeling efforts, such as it
14 is, suggests there was no modeling of that kind at this time.
15 They depended on BP to do the modeling of things like this and
16 convey it to the government.

17 Q. There was no modeling done based on hydraulic modeling at
18 the same time Dr. Decroix was saying you can't use hydraulic
19 modeling because of the lack of information, correct?

20 A. He was referring to a single point accurate estimations
21 using, again, BP's stuff, not a range of flow rates. Here we
22 have a range of flow rates that exceeds a 15,000 limit, which
23 admittedly is not itself an accurate number, but it gives you
24 an indication that the flow rate for a successful Top Kill is a
25 lot lower than most of the flow rates that BP had been modeling

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1 for weeks.

2 Q. Can we agree Secretary Chu received the data regarding the
3 execution of Top Kill as the data and information was being
4 generated? Yes or no?

5 A. I know he received and -- requested and received some of
6 the data. I don't know what he received in any detail.

7 MS. KARIS: If we can look at 11305.1.1.

8 BY MS. KARIS:

9 Q. This is an e-mail from Secretary Chu to internal
10 government folks dated May 30. This is immediately following
11 Top Kill, correct?

12 A. Yes, it is immediately after.

13 MS. KARIS: If you can go to 11305.2.1, please.

14 BY MS. KARIS:

15 Q. Secretary Chu writes: "On Friday night, I returned from
16 four days in Houston where my team of scientists and I have
17 been monitoring the progress of the Top Kill effort and helping
18 to design the strategies for moving forward.

19 "We have been getting the data at the same time as BP
20 engineers and conducting our own independent analysis of the
21 data so we can verify the conclusions that BP is making at
22 every step."

23 That's what Secretary Chu wrote, correct?

24 A. Yes, but when he learned about Ole Rygg's simulation
25 months, many months, maybe a year later at the time of his

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1 deposition, he was actually very disappointed in the
2 information that BP had withheld. So to say that he was
3 getting all the data available, not to have had that pointed
4 memo available to him that indicated that flow rate threshold,
5 certainly suggests that not everything was being provided.

6 Q. Do you know who the Red Team is?

7 A. Spelled R-E-D?

8 Q. Yes.

9 A. Not without context.

10 Q. Do you know whether the Red Team was a government team
11 that was independently assessing Top Kill prior to approval of
12 Top Kill?

13 A. I don't know of that assessment. As far as I know, that
14 group did not use hydraulic modeling.

15 Q. You don't even know who they are? You don't know if they
16 used --

17 A. I don't know, but I saw no reference to hydraulic modeling
18 in any of the correspondence I've read.

19 Q. Do you know whether the Red Team was informing the Federal
20 Science Team as to its view regarding flow rates, success
21 rates, or any of that prior to the execution of Top Kill?

22 A. No, I don't.

23 Q. So when you referenced Secretary Chu and what you reviewed
24 in his deposition, did you look to see what information
25 Secretary Chu had or at least what his Federal Science Team had

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1 available prior to the execution of Top Kill?

2 A. Well, they didn't have all the flow rate modeling BP had
3 been doing, and they didn't have Ole Rygg's simulation results.
4 That much I know.

5 Q. Did you look to see what data or information they
6 generated internally?

7 A. I did not review, separately from my review of BP's
8 modeling efforts, internal things at the government unless I
9 ran across some incidentally.

10 Q. You are aware, though, that BP had requested, prior to
11 Top Kill, that the government perform an independent review of
12 its procedure, correct?

13 A. I wouldn't be surprised of that. I don't recall.

14 MS. KARIS: We can look at 9131.3.1, please.

15 THE WITNESS: But had they done that, it would have
16 been nice to suggest to the government we are concerned that if
17 the flow rate is too high, the Momentum Kill won't work and our
18 indications are we have high flow rates in many of our
19 simulations that are above what we think is a threshold for
20 success, but they didn't give that pointed information.

21 BY MS. KARIS:

22 Q. But you don't know whether the government had generated
23 that information on its own, correct?

24 A. I think had they generated that information on their own,
25 they probably would have reassessed the procedure of proceeding

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1 with the Top Kill.

2 Q. All right. You think that, but were you aware that BP
3 sent to the government this request for an independent review
4 of the Dynamic Kill pumping schedule which, of course, would
5 have included pump rates and flow rates? Were you aware of
6 that?

7 A. You're going to have to, first of all, show me a date on
8 this.

9 Q. Sure.

10 A. And what the context for this is because I'm not following
11 it.

12 Q. I will represent to you -- and actually, we can look at
13 it.

14 MS. KARIS: 9131.1.1.

15 BY MS. KARIS:

16 Q. This is an e-mail from May 16 from Mr. Tooms of BP to Tom
17 Hunter and several others of the government, National -- Sandia
18 National Labs. And he says: "Please find attached the written
19 questions that we are requesting the labs assist us with."

20 This is the cover to that e-mail, if we can go now to
21 the following page. What he asks from the National Labs
22 assistance with is an independent review of the Dynamic Kill
23 pumping schedule. Top Kill, if successful, would shut off the
24 well more quickly, and then asks for them to undertake an
25 assessment of that, correct?

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1 A. This is referring mostly to the pumping of mud, the
2 injection of mud without reference to its dependence for
3 success on the flow rate of the well itself. And at this time
4 BP was representing the flow rate as being 5,000 barrels of oil
5 per day.

6 Q. Do you know whether the government had internal estimates
7 at that time that suggested that the flow rate could be
8 significantly higher than the 15,000 barrels?

9 A. I think the date we saw on this a few minutes ago was the
10 17th of May.

11 Q. 16th.

12 A. 16th. To the best of my knowledge, they had no
13 substantive estimates to contradict that, to contradict BP's
14 estimate.

15 Q. Prior to Top Kill being executed, had the government
16 determined what it believed to be the flow rate estimate?

17 A. Prior to when?

18 Q. Top Kill being executed.

19 A. On the 27th there was an initial public report of the Flow
20 Rate Technical Group of a consensus of opinion that the flow
21 rate was far higher than 5,000 barrels of oil per day. The
22 consensus was arrived only the day earlier, according to Marcia
23 McNutt's deposition, and also according to her deposition that
24 the -- no pun intended, the momentum forward for the Top Kill
25 was already too strong. But had she known about Ole Rygg's

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1 15,000 limit and the fact it was below the government's new
2 estimate, that they probably still would have proceeded with
3 the Top Kill because BP had not kept them informed early enough
4 to make a difference.

5 Q. Did you see what Dr. Hunter said about whether he would
6 have gone forward with Top Kill even if he had known the flow
7 rate might be higher than 15,000 barrels?

8 A. But he didn't know about the 15,000 barrels of oil per
9 day.

10 Q. Did you see his testimony that he would have gone forward
11 with Top Kill even if he had known because there is the
12 Junk Shot aspect of Top Kill? Did you see that testimony?

13 A. I don't recall that testimony.

14 Q. Okay. Let's talk about some of the models that you talked
15 about. You referenced some modeling performed by Mr. Mason,
16 correct?

17 A. By his group.

18 Q. I'm sorry, by his group. And that would be in mid-May?

19 A. Well, there are a variety of times. So I'm not sure which
20 effort you are referring to.

21 Q. Sure.

22 MS. KARIS: If we can pull up 9156.6.1.

23 THE WITNESS: Yes, this is a May 11 memo, as I
24 recall, a PowerPoint package attached to an e-mail.

25

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1 14:04 BY MS. KARIS:

2 14:04 Q. Mr. Mason generated what he called the key messages from
3 14:04 this exercise, correct?

4 14:04 A. Well, I can't recall how many messages he got out of this
5 14:04 package, but there are quite a few here.

6 14:04 MS. KARIS: 9156.2.2.

7 14:04 THE WITNESS: Yes.

8 14:04 BY MS. KARIS:

9 14:04 Q. The key message from his work on May 15 before Top Kill
10 14:04 was executed is that, "if BOP and wellhead were removed and if
11 14:04 we have incorrectly modeled the restrictions, the rate could be
12 14:04 as high as (approximately) 100,000 barrels per day up the
13 14:04 casing or 55,000 barrels per day up the annulus." Correct?

14 14:05 A. Yes. These are worst case discharge estimates, not like
15 14:05 earlier ones that BP had presented to the government, and they
16 14:05 are buried in those charts we were just looking at.

17 14:05 Q. BP provided this very slide to Admiral Landry before
18 14:05 Top Kill was approved, correct?

19 14:05 MR. LI: Your Honor, I'm going to pose an objection
20 14:05 here that BP is collaterally estopped and judicially estopped
21 14:05 from contradicting admissions in the factual basis of a guilty
22 14:05 plea.

23 14:05 This document here, this key messages slide
24 14:05 appears both in this particular exhibit and also in the letter
25 14:05 to Congressman Markey on May 24, 2010, which is Exhibit 10358,

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1 which form the basis for BP's guilty plea for obstruction of
2 Congress in which it specifically -- at Allocution No. 5, BP
3 acknowledged that BP falsely suggested in its May 24 letter,
4 which attaches this exact document, that Unified Command flow
5 rate estimate of 5,000 barrels per day was the most
6 scientifically informed judgment and that subsequent flow rate
7 estimates have yielded consistent results. The factors set
8 forth above, BP had multiple internal documents for flow rate
9 estimates that were significantly greater than 5,000 barrels
10 per day that it did not share with the Unified Command.

11 If this attached key messages document was
12 enough to inform the government, then there's no factual basis
13 for the plea. BP is judicially and collaterally estopped from
14 contradicting or undermining a sworn admission.

15 **MS. KARIS:** If I may respond, Your Honor?

16 **THE COURT:** Go ahead.

17 **MS. KARIS:** I do not believe the plea, in any way,
18 shape, or form, contradicts the fact that Admiral Landry, on
19 May 19, received this key messages slide. BP wouldn't plead to
20 that. It's directly contrary to facts.

21 Admiral Landry, in her deposition, admitted that
22 she received this information -- this is what Mr. Brock showed
23 this morning. She received this information. She looked at
24 this information, and she did not rely on BP for flow rate
25 estimates at this time, which was prior to Top Kill because at

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1 that point in time, the Flow Rate Technical Group was approved.

2 THE COURT: I'm going to overrule the objection. The
3 plea agreement and the guilty plea is already in the record,
4 correct?

5 MR. LI: Yes, Your Honor.

6 THE COURT: So it says what it says. Let's go.

7 THE WITNESS: Can I respond?

8 BY MS. KARIS:

9 Q. I'm sorry, Dr. Wilson, one simple question.

10 Admiral Landry received this information prior to Top Kill
11 going forward, yes or no?

12 A. She received this slide but not the previous one you just
13 put up there. She did not receive the other 48 or plus
14 simulations that were done that were associated with this
15 slide. She only got this. And this was supposed to be the
16 latest results that BP was providing in that e-mail transmittal
17 to Admiral Landry. So she got and Congress got this as the
18 only thing out of that whole package that Mike Mason did,
19 certainly not the latest.

20 Q. What Mr. Mason gave her is those big numbers, the high
21 numbers that you referenced?

22 A. And he gave her --

23 Q. He gave her the highest numbers, the worst case for
24 what --

25 A. And alleged it to be worst case, low probability worst

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1 cases, discounting it completely relative to continued
2 pronouncements of best estimates or most likely estimates of
3 5,000 barrels of oil per day.

4 Q. Admiral Landry testified, you're aware, that even when she
5 got this, the entire package, she was not looking to BP or
6 relying on this information because the Flow Rate Technical
7 Group had been formed and she was looking to them for flow
8 rate, correct?

9 A. She was looking -- started looking to the Flow Rate
10 Technical Group, among other things, because in the 19th, this
11 was one part of a response to a request for all information you
12 have on flow rate. And I would imagine if I were her, I would
13 be incredibly disappointed at this memo. I mean, have you ever
14 looked at this thing? An undergraduate could do better in
15 terms of preparing quantitative, factual information for me as
16 a decision maker to consider about flow rate.

17 Q. Let's talk about the last topic, the 5,000-barrel
18 estimate. The 5,000-barrel estimate, you understand, that was
19 announced on April 28 was provided by NOAA to Admiral Landry,
20 correct?

21 A. No. On the 28th, Admiral Landry had a meeting with Doug
22 Suttles and he provided this range from one to five with 2,500
23 in the middle, the chart we showed a while ago. She, and in
24 collaboration with one of her assistants, I suppose, whatever
25 you call it, were uncomfortable with that because they had

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1 become convinced from NOAA estimates that the flow rate was
2 higher than 1,000, which had been the previously announced
3 amount, and they were skeptical about this estimate of BP's
4 that 2500 was the best estimate, so they took the high end of
5 the BP estimate and decided to go with an announcement that
6 very day of 5,000 based on this high end that BP had provided.

7 Q. At the time that Admiral Landry announced the 5,000-barrel
8 estimate, the government had internal generated numbers that
9 showed the flow rate could be as high as 64,000 barrels,
10 correct?

11 A. You'll have to point out to me what you are referring to
12 because I'm not sure what that is.

13 Q. Sure.

14 MS. KARIS: If we can look at 144811.2.1.

15 THE WITNESS: You're talking April 28?

16 BY MS. KARIS:

17 Q. Yes.

18 A. Okay.

19 Q. Actually, I'm talking before the April 28 announcement,
20 April 25. Mr. Watabayashi is with the government, correct? He
21 is with NOAA?

22 A. I will take your notice on that. I don't know that.

23 Q. Were you aware that Mr. Watabayashi was writing to
24 Mr. Barker and identifying numbers as high as 64,426 barrels as
25 the flow rate that might exist before Admiral Landry announced

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1 the 5,000-barrel estimate?

2 A. Yes. And this reached people who might have contact with
3 Admiral Landry, but on the other hand, this is a video
4 estimate. It's the kind of thing for the next month BP
5 discounted as being unreliable video evidence based on the fact
6 that it no doubt didn't take into account the gas/oil ratio,
7 gas coming out of solution, and all sorts of other factors.

8 And so May 19 when Doug Suttles sent that e-mail to
9 Admiral Landry, it included explanations for why all the PIV
10 analysis, particle imaging velocimetry analysis, that had been
11 recently done by an academic and similar analyses were
12 unreliable and, therefore, the flow rate was actually much
13 smaller than they showed. So I don't know how this went up
14 through the chain of command, but BP was certainly arguing
15 against this kind of information as being reliable or useful at
16 that time.

17 MS. KARIS: I have no further questions. Thank you.

18 THE COURT: Any redirect, Mr. Li?

19 MR. LI: No, Your Honor.

20 THE COURT: Thank you, Dr. Wilson.

21 Call your next witness.

22 MR. BRIAN: Brad Brian for Transocean and the aligned
23 parties. We propose to play five short deposition clips. They
24 are Admiral Mary Landry, who is the admiral in the
25 U.S. Coast Guard who served as the federal on-scene

1 coordinator, as the Unified Area Commander from April 23
2 through June 1; Dr. Marcia McNutt, who was the director of the
3 U.S. geological survey who has served as the science adviser to
4 Secretary of the Interior Ken Salazar during the response. She
5 then became the chair of the Flow Rate Technical Group when it
6 was formed on May 19, 2010.

7 Tim Lockett, whose current position is BP's
8 subject matter expert for multiphase modeling and discipline
9 lead for flow assurance. He conducted hydraulic modeling for
10 BP during the response. Mike Mason, somebody who you have
11 heard of, who is a former BP vice president who oversaw certain
12 flow rate modeling and estimated the potential range of flow
13 rates during the response. And Secretary of the Energy Steven
14 Chu, who arrived in Houston on May 12 to assist with the
15 response effort and served as co-lead of the Government Science
16 Team during the response. I think there were objections by BP
17 only to Secretary Chu's deposition. I don't know whether
18 Your Honor has had a chance to review that and rule on those
19 objections.

20 **THE COURT:** I've not ruled on those yet. I have
21 looked at it.

22 **MR. BRIAN:** Would you prefer we hold off playing that
23 one?

24 **THE COURT:** Why don't you do that.

25 **MR. BRIAN:** I have a binder with the transcripts and

1 the exhibits that are referenced that I'll give to the clerk
2 now.

3 **MR. GASAWAY:** Your Honor, I was just going to say on
4 behalf of BP, we would be prepared to argue this if that would
5 be helpful in the morning or you can just rule after looking at
6 it overnight.

7 **THE COURT:** I will probably just rule.

8 **MR. GASAWAY:** Thank you, Your Honor.

9 **THE COURT:** By the way, that was Mr. Gasaway. He
10 forgot to identify himself.

11 **MR. BRIAN:** We'll withhold playing Secretary Chu's,
12 and we will play the other four, Your Honor.

13 **THE COURT:** How long do these take altogether?

14 **MS. GOTTLIEB:** About 25 minutes.

15 **MR. BRIAN:** And that was Ms. Gottlieb.

16 (Video deposition clips of Mary Landry, Marcia
17 McNutt, Tim Lockett, and Mike Mason played.)

18 **MR. BRIAN:** That concludes the videotape depo clips,
19 Your Honor.

20 **THE COURT:** Who is the next witness for the aligned
21 parties?

22 **MR. LUNDY:** Gregg Perkin, Your Honor.

23 **THE COURT:** Another expert. Let's take a 15-minute
24 recess.

25 (Recess.)

1 **THE COURT:** Please be seated, everyone.

2 **Gregg Perkin,**

3 having been duly sworn, testified as follows:

4 **THE DEPUTY CLERK:** State your full name and correct
5 spelling for the record, please.

6 **THE WITNESS:** Gregg Perkin, G-R-E-G-G, P-E-R-K-I-N.

7 **THE COURT:** Before we begin Mr. Perkin's testimony, a
8 couple things.

9 I have looked at BP's objections to the portions
10 of the video deposition testimony of Dr. Chu, and I'm going to
11 overrule the objections. The testimony is essentially in the
12 nature of: If you had had this additional information, what
13 would you have done differently? Or would you have done
14 anything differently? I don't think there's anything wrong
15 with that type of testimony. So I overrule the objection.

16 You can play that whenever it's convenient,
17 Mr. Brian.

18 **MR. BRIAN:** May we have a moment, Your Honor?

19 **THE COURT:** Sure.

20 Mr. Irpino, did you have something you wanted to
21 say?

22 **MR. IRPINO:** Your Honor, Anthony Irpino for the PSC.

23 We have our deposition bundles that were to be
24 offered on the first day. We can do that after --

25 **THE COURT:** Why don't we do that at the end of the

1 day.

2 **MR. IRPINO:** Thank you, Your Honor.

3 **THE COURT:** Anything else?

4 **MR. LUNDY:** No, Your Honor.

5 Mat Lundy for the PSC. May we proceed?

6 **THE COURT:** Yes.

7 **DIRECT EXAMINATION**

8 **BY MR. LUNDY:**

9 **Q.** Good afternoon, Mr. Perkin. How are you?

10 **A.** Good afternoon, Mr. Lundy.

11 **THE COURT:** By the way, there was a motion in limine
12 on Mr. Perkin?

13 **MR. LUNDY:** No, I don't think so, Your Honor.

14 **MR. COLLIER:** There actually was a motion in limine,
15 Your Honor. It was relating to a certain opinion --

16 **THE COURT:** It looks like two of the three are
17 essentially moot because the plaintiffs say they do not intend
18 to ask those questions, correct?

19 **MR. LUNDY:** That's true, Your Honor.

20 **THE COURT:** Are you still raising the third issue?

21 **MR. COLLIER:** I believe the issue was whether or not
22 there was a mitigation plan during the Junk Shot procedure to
23 address buildup of pressure.

24 **THE COURT:** To the extent there's a remaining
25 objection, I'm going to overrule it because I went back and I

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1 looked at his report. It seems like, to me, it's fairly within
2 the four corners of his report. He talks about the potential
3 risk of the -- on page 8 of his report, he talks about indirect
4 Top Kill parameters included risk and hazards such as bursting
5 rupture disks in the 16-inch casing; and then later on in his
6 report, he again refers to: If the Junk Shot was successful,
7 it would result in a potentially high shut-in pressure with
8 potential casing failure if these excessive pressures could not
9 be relieved or vented. That's page 18. Page 19, he talks
10 about it again. So I think it's fairly within his report.

11 Go ahead.

12 **BY MR. LUNDY:**

13 **Q.** Mr. Perkin, you have been tendered and accepted as an
14 expert in this case during Phase One?

15 **A.** Yes, sir.

16 **Q.** You have already testified during Phase One; is that
17 correct?

18 **A.** Yes, sir.

19 **Q.** Have you prepared reports that contain your opinions for
20 Phase Two of this case?

21 **A.** Yes, sir.

22 **MR. LUNDY:** Carl, would you pull up, please, the
23 first page of TREX-11464R.

24 **BY MR. LUNDY:**

25 **Q.** Does this show the front page of the report, the original

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1 14:59 report, that you prepared in connection with your work in
2 14:59 Phase Two of this case?

3 14:59 A. Yes, sir.

4 14:59 MR. LUNDY: Carl, would you pull up now for us,
5 14:59 please, TREN-11465.

6 14:59 BY MR. LUNDY:

7 14:59 Q. Does this show the cover page of your expert rebuttal
8 14:59 report that you prepared in this case?

9 14:59 A. Yes, sir, it does.

10 14:59 MR. LUNDY: Your Honor, at this time, the aligned
11 14:59 parties would move to have TREN-11464R and TREN-11465, which
12 15:00 are Mr. Perkin's original Phase Two expert report and rebuttal
13 15:00 report, admitted into evidence.

14 15:00 THE COURT: All right.

15 15:00 MR. COLLIER: No objection.

16 15:00 THE COURT: With no objection, those are admitted.

17 15:00 BY MR. LUNDY:

18 15:00 Q. Would you tell the Court in general what you reviewed in
19 15:00 connection with the work you performed in Phase Two?

20 15:00 A. I reviewed a number of depositions, a number of treatises,
21 15:00 a number of e-mails. It's all spelled out in the addendums of
22 15:00 the two reports.

23 15:00 Q. Can we have an agreement that your opinions will be based
24 15:00 upon your education, training, knowledge, and experience in the
25 15:00 oil and gas industry and upon the documents you've reviewed?

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1 A. Yes, sir.

2 Q. We have heard a lot about flow rates this morning -- or
3 this afternoon from Dr. Wilson, so we are not going to reflow
4 flow rate grounds, but we may have to touch upon it a little
5 bit. And then we are going to go into the Junk Shot in more
6 detail than we've heard this morning.

7 What I would like to ask you about the flow rate in
8 particular with respect to Momentum Kill: From a well control
9 perspective, should flow rate estimates like those discussed by
10 Dr. Wilson this morning be shared with the decision makers who
11 are determining which source control option should be used?

12 A. Most definitely.

13 Q. Why is that?

14 A. Because flow rate has a lot to do with how you are going
15 to control the well. It's going to help you make the best
16 decisions and result in the best chance of success.

17 Q. Likewise, should a source control option that is known
18 that will not work be attempted?

19 A. In my opinion, no.

20 Q. Why not?

21 A. Because it can lead to other problems, it can manifest
22 other risks, and it can create other unsolvable problems.

23 Q. So when there's a potential for no reward and there are
24 risks involved in the operation, it's your opinion it shouldn't
25 be attempted; is that correct?

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1 A. I think all the risks should be evaluated. If there's a
2 low risk of success, then it should not be attempted.

3 Q. Now, let's go into the Junk Shot in more detail than what
4 we have heard this morning.

5 A. I should say "probabilities."

6 Q. What is the Junk Shot and its purpose?

7 A. Well, the Junk Shot is primarily a -- I call it -- it's
8 materials such as -- we call it "junk": Golf balls, ground-up
9 paper, cloth, anything that can find its way into the flow path
10 and plug off flow.

11 Q. How is the junk inserted into the BOP and into the flow?

12 A. It's actually pumped into the BOP and it's pumped into the
13 flow, and the idea is that the junk will disperse in such a
14 manner that it will cling on to something and create a flow
15 restriction, as Dr. Wilson was talking about this morning.

16 Q. What does it go through? What is it inserted through to
17 get to the BOP?

18 A. In this case, it was inserted through the choke and kill
19 lines, which have a very small diameter compared to the blowout
20 preventer.

21 Q. You say a small diameter. What were the size of the choke
22 and kill lines?

23 A. My understanding was they were 3-inch inside diameter; or
24 the acronym is ID.

25 Q. Does the size of the choke and kill lines have an impact

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1 on whether the Junk Shot might be successful?

2 A. I think in this case it does, because you're introducing
3 small materials that are going into a rather large cavity. In
4 this case, it's 18 and 3/4 inches.

5 Q. So you're introducing junk through a small line -- a
6 3-inch diameter line -- into a flow path that is much larger;
7 is that correct?

8 A. Yeah, I think the analogy that I use from time to time is
9 that it's like taking a box of raisins and trying to dam the
10 Colorado River up with it.

11 Q. Are there risks with the Junk Shot?

12 A. The risks are that it won't work. There are also risks
13 that, if it suddenly plugs off a well, the pressure can spike.
14 It can be similar to what we equal a "hard shut-in."

15 Q. What's the result of that?

16 A. In this particular case, you have rupture disks, which,
17 potentially, if they had not ruptured, could rupture in the
18 event of a hard shut-in.

19 Q. That's a risk associated with the Junk Shot?

20 A. That would be a risk associated with the Junk Shot. If
21 you could not control the size of the orifice by virtue of the
22 junk taking hold of whatever is inside the blowout preventer
23 and it suddenly becomes a barrier, the pressure can spike.

24 MR. LUNDY: Carl, would you please pull up D20008?

25

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1 BY MR. LUNDY:

2 Q. As we look at this slide and talk about the risks with the
3 Junk Shot, when the pressure spikes, then what's the
4 possibility -- what can happen after that?

5 A. Well, if the pressure spikes, the well could be sealed or
6 you could damage something that's not capable of sustaining the
7 pressure. So that's the tradeoff.

8 The soft shut-in would be a little different. A soft
9 shut-in would take place over time and you could imagine it.

10 But in this particular case, if the junk and the
11 Junk Shot would take hold and suddenly create restriction of
12 flow, you could create a hard shut-in situation or a rapid
13 shut-in.

14 Q. What might that cause?

15 A. It could cause -- in this particular case, it could cause
16 damage to the rupture disks. If it was severe enough, it might
17 create an underground blowout.

18 Q. You see this slide which is -- the source is TREX-11269.4
19 and it says "MC 252 Junk Shot Peer Assist, 6 May 2010, Report
20 of Findings, Executive Summary." You have seen this document
21 before, have you not?

22 A. I have.

23 Q. You see where the Peer Assist Group concludes that
24 Junk Shots are not often successful; is that correct?

25 A. That's correct.

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1 15:06 Q. Would you explain to the Court what the Peer Assist Group
2 15:06 for the Junk Shot was in this case?

3 15:06 A. I think in this particular case -- and I think it may have
4 15:06 been touched on earlier -- it was college professors from the
5 15:06 University of Texas, Louisiana State University, industry
6 15:06 experts, Wild Well Control, Boots & Coots, other industry
7 15:06 experts. I think it was a lot of people as part of this peer
8 15:06 group.

9 15:06 Q. What was their task?

10 15:06 A. I think their task was to look at whether or not the
11 15:06 Momentum Kill -- excuse me, the Top Kill had a reasonable
12 15:06 chance of success.

13 15:06 Q. For now, I want us to focus on the peer assist for the
14 15:06 Junk Shot, okay?

15 15:06 What is a Peer Assist -- let me ask you: Are Peer
16 15:06 Assist groups created to evaluate a potential operation or
17 15:07 procedure? Look at it; lay the -- weigh the risks, the
18 15:07 benefits; and then make recommendations whether or not to go
19 15:07 forward with it?

20 15:07 A. That's been my experience. Typically, you get the best
21 15:07 minds in the industry to corroborate, talk about the features,
22 15:07 the benefits, the risks, the hazards. They come up with a
23 15:07 fault tree analysis. They try to come up with a way to manage
24 15:07 the problem in a way that would be meaningful.

25 15:07 Q. Let's --

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15:07 1 MR. LUNDY: Carl, pull up for us, please, D20018.

15:07 2 BY MR. LUNDY:

15:07 3 Q. These are excerpts from the deposition of Wild Well
15:07 4 Control's Mr. Pat Campbell; is that correct?

15:07 5 A. Correct.

15:07 6 Q. You understand Mr. Campbell is the president of Wild Well
15:07 7 Control, Inc.?

15:07 8 A. Yes.

15:07 9 Q. Was he part of the Junk Shot Peer Assist Team you just
15:07 10 discussed?

15:07 11 A. Yes, he was on that team.

15:07 12 Q. Have you seen evidence that he was involved in meetings
15:07 13 and discussions regarding the Junk Shot?

15:07 14 A. I've seen evidence to that regard, yes.

15:08 15 Q. Mr. Campbell, if you will look, he says at lines 5 through
15:08 16 14 on page 369 that no one outside of BP involved in the peer
15:08 17 assist thought that the Junk Shot was a good idea.

15:08 18 Do you see that?

15:08 19 A. I do.

15:08 20 Q. You had seen that before today, correct?

15:08 21 A. That's correct.

15:08 22 Q. He goes on to list reasons for not going forward with the
15:08 23 Junk Shot. He says: "The inside diameter of the flexible
15:08 24 lines and the choke and the kill lines were 3-inch ID," inside
15:08 25 diameters; is that correct?

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15:08 1 A. Correct. That's what it says right there.

15:08 2 Q. He goes on to say: "So what we saw was a very generous
15:08 3 flow path."

15:08 4 A. Yes.

15:08 5 Q. In your opinion, is Mr. Campbell describing the conditions
15:08 6 you testified to earlier that Junk Shots seldom work when you
15:08 7 are restricted to shooting small objects, because of the size
15:08 8 of the choke and kill lines, in an attempt to try to stop up a
15:08 9 large flow path?

15:08 10 A. Correct, and you don't know the configuration of the flow
15:09 11 paths, these other amounts.

15:09 12 Q. Let's look at another excerpt of Mr. Campbell's
15:09 13 deposition.

15:09 14 MR. LUNDY: Carl, please pull up 20019.

15:09 15 BY MR. LUNDY:

15:09 16 Q. You have read Mr. Campbell's deposition, correct?

15:09 17 A. I have.

15:09 18 Q. At the bottom portion of 20019, we see Mr. Campbell
15:09 19 stating again: "So it was thought that the combination of the
15:09 20 two elements, the size of the flow path and the nature of the
15:09 21 technical limitations about a Momentum Kill -- your words were
15:09 22 not a good idea."

15:09 23 Then he says: "I think our words were 'had a very
15:09 24 low likelihood of success.'"

15:09 25 Do you see that?

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1 A. I do.

2 Q. Have you seen any evidence in this case, in your opinion,
3 that would lead you to disagree with the conclusion from the
4 Junk Shot Peer Assist Group that the Junk Shot had a low
5 possibility of success?

6 A. I have not seen anything that would suggest it had a high
7 probability of success.

8 Q. Now, we have seen this morning and this afternoon evidence
9 that we just talked about, what was shown to BP about the
10 likelihood of success before the Top Kill was attempted. Now,
11 I want us to look at what BP told Unified Command about the
12 chances of success of the Top Kill before it was attempted.

13 MR. LUNDY: Carl, would you pull up, please, D20004.

14 BY MR. LUNDY:

15 Q. You were in court this morning?

16 A. I was.

17 Q. You heard about the Tony Hayward press release, and you
18 actually saw the clip?

19 A. I did.

20 Q. You have seen this press release before; is that correct?

21 A. I have.

22 Q. You see here where Mr. Hayward says in response to a
23 potential interview question why Top Kill didn't work. He
24 says: "We've always said there was at least a 30 percent
25 chance that this wouldn't work."

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1 Right?

2 A. That's what he said.

3 Q. So conversely, BP was saying -- you heard on the clip that
4 there was a 60 to 70 percent chance that it would work?

5 A. Correct.

6 Q. Do you agree there was a 60 to 70 percent chance that
7 Top Kill would work?

8 A. No, I don't.

9 Q. Have you seen any evidence in your review of this case
10 that would support such a representation by BP to Unified
11 Command?

12 A. No, not with these flow rates, no.

13 MR. LUNDY: Let's pull up D20005.

14 BY MR. LUNDY:

15 Q. We heard about Dr. Chu this morning, correct?

16 A. Correct.

17 Q. You have read his deposition; is that right?

18 A. I have.

19 Q. Do you see in response to a question where he says: "What
20 I remember them telling us was that they wanted to proceed with
21 the Top Kill, that they were confident that it was going to
22 work, and that they were -- had the capability of marshaling
23 counterflows that would overwhelm what was coming up."

24 Did I read that correctly?

25 A. You did.

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1 15:11 Q. You know that Dr. Chu was the secretary of the Department
2 of Energy, right?

3 15:12 A. I do.

4 15:12 Q. He said: "They wanted to proceed with the Top Kill. They
5 were confident that it was going to work."

6 Right?

7 15:12 A. That's what it says.

8 15:12 Q. Have you seen any evidence in your review of this case to
9 support BP's representation to Secretary Chu that the Top Kill
10 would work?

11 15:12 A. No, I have not.

12 15:12 Q. Let's look at another excerpt from Dr. Chu's deposition.

13 MR. LUNDY: Carl, would you please pull up 20006.

14 BY MR. LUNDY:

15 15:12 Q. You have seen this excerpt before today, correct?

16 15:12 A. I have.

17 15:12 Q. You see where he is asked:

18 "QUESTION: Do you have a judgment or a view as to
19 what flow rate the Junk Shot part of the Top Kill would
20 effectively shut-in?

21 "ANSWER: No, I don't. When BP came to us later,
22 they were arguing that they felt confident it would work.
23 I believe the words Kent Wells used, that this is a slam
24 dunk."

25 Did I read that correctly?

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1 A. You did.

2 Q. We've heard testimony about the "slam dunk" representation
3 this morning, right?

4 A. I heard it too.

5 Q. In your opinion, was there any evidence to support the
6 representation by BP that the Junk Shot would be a slam dunk?

7 A. No.

8 MR. LUNDY: Carl, would you please pull up D20007.

9 BY MR. LUNDY:

10 Q. This is a deposition excerpt from BP's Mark Patteson. You
11 recognize that name from reading this deposition, correct?

12 A. Top Kill, later, as I recall.

13 Q. That he was BP's Top Kill team leader?

14 A. Yes, I think that's true.

15 Q. You see where he is asked a question about the probability
16 analysis that was -- whether or not one was done, whether he
17 has ever seen one done; is that correct?

18 A. He says -- the question is: "As the Top Kill team lead,
19 you certainly never asked for a probability analysis to be
20 conducted, did you?"

21 And he says: "I did not."

22 Q. And then he goes on to say or he was asked:

23 "QUESTION: Nobody ever came to you with a
24 possibility analysis, did they?

25 "ANSWER: They did not.

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1 **"QUESTION:** So as far as you -- you have no idea what
2 that 60 to 70 percent is based on, do you?

3 **"ANSWER:** I have no idea."

4 **A.** That's what he says.

5 **Q.** Have you seen any evidence to support BP's representation
6 to Unified Command and to the general public that the Top Kill
7 had a good chance to succeed, even as high as 60 to 70 percent,
8 before the Top Kill was ever attempted?

9 **A.** I have not seen any evidence to support that.

10 **Q.** Let's go on now and talk about what was known during and
11 after the Top Kill was attempted.

12 **MR. LUNDY:** Carl, would you pull up D20014.

13 **BY MR. LUNDY:**

14 **Q.** Now, there's been discussion about the top TREX, 9160, so
15 let's go down and focus on TREX-10622 -- which is a Wild Well
16 Control project memo dated May 31, 2010; is that correct?

17 **A.** Yes.

18 **Q.** We have already discussed Wild Well's involvement in this
19 case, right?

20 **A.** Yes.

21 **Q.** They were one of the experts in helping BP with source
22 control; is that right?

23 **A.** That's correct.

24 **Q.** You see under the summary and conclusions from Top Kill
25 efforts May 26 through 28, May 2010, Wild Well states that:

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1 "Given the lack of response while pumping very large bridging
2 materials (as large as 2 1/2 inch diameter), it is apparent
3 that the geometry of the pathway(s) inside the BOP is quite
4 large."

5 Do you see that?

6 A. I do.

7 MR. LUNDY: Now let's pull up D20007.

8 BY MR. LUNDY:

9 Q. This is a deposition excerpt from Mark Mazzella, correct?

10 A. Correct.

11 Q. You know Mark Mazzella was the BP well control authority
12 for the well control, correct?

13 A. Correct.

14 Q. He was involved in assisting in the well control response,
15 correct?

16 A. He was.

17 Q. You see at the bottom of the page -- when he is asked
18 about what did he attribute to be the reason that the Top Kill
19 was unsuccessful, do you see where he says, "So we think that
20 the hole we were trying to plug up was just too big"?

21 Is that correct?

22 A. That's correct.

23 Q. So all the evidence we have looked at so far indicates
24 that the pathway was just too large to plug; is that right?

25 A. Correct.

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1 15:16 MR. LUNDY: Let's look at D20071.

2 15:16 BY MR. LUNDY:

3 15:16 Q. This is a deposition excerpt from the deposition of David
4 15:16 Barnett. You have seen this before, haven't you?

5 15:16 A. Correct. He is a vice president of Wild Well.

6 15:16 Q. You see where Mr. Barnett says that everyone was in fairly
7 15:16 close agreement that the flow path was too large, and that is
8 15:16 why the Top Kill failed?

9 15:16 A. That's what he says.

10 15:16 Q. He is talking about -- when he says "everyone," he is
11 15:16 talking about everyone in the Peer Assist Group?

12 15:17 A. Yes.

13 15:17 Q. Let me ask you, from a well control perspective, why do
14 15:17 you believe that the Top Kill failed?

15 15:17 A. The Top Kill failed because of the high flow rates that
16 15:17 Dr. Wilson was talking about. And I believe that the flow path
17 15:17 was way too large, as Dr. Wilson indicated. Being too large,
18 15:17 there's less --

19 15:17 MR. COLLIER: Your Honor, if I may object, I think
20 15:17 this is outside the four corners of Mr. Perkin's report.

21 15:17 MR. LUNDY: Your Honor, he talks about all this on
22 15:17 pages 19, 21, 23. I think it's in his report.

23 15:17 MR. COLLIER: Your Honor, during his deposition
24 15:17 Mr. Perkin admitted that he didn't do any kind of analysis of
25 15:17 the Top Kill data, didn't even review all of the data that was

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1 created from the Top Kill analysis.

2 **THE COURT:** Where is it in his report, Mr. Lundy?

3 **MR. LUNDY:** He talks in detail about all the
4 knowledge, about the reason why Top Kill failed was because --

5 **THE COURT:** Is he giving his opinion, or is he
6 relaying or reciting what other people said? You just went
7 through that.

8 **MR. LUNDY:** I think, Your Honor, he is doing both. I
9 think he does relate what evidence was in existence then,
10 but --

11 **MR. COLLIER:** Your Honor, his deposition testimony
12 from Mr. Perkin, the question was: "Have you done any
13 independent analysis of the Top Kill data to evaluate whether
14 any of the scenarios that BP presented were possible or
15 plausible relating to the Top Kill analysis?"

16 And Mr. Perkin's answer was: "I haven't done my
17 own models, and I haven't seen the data in detail."

18 **THE COURT:** So is that right, you didn't do your own
19 analysis, you're basing this on what you read that other people
20 did?

21 **THE WITNESS:** Correct, what I learned from the
22 evidence that was presented to me.

23 **THE COURT:** Then I sustain the objection.

24 **BY MR. LUNDY:**

25 **Q.** Let's go now to what BP actually told Unified Command as

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1 to why the Top Kill failed.

2 Have you seen evidence that after the failed attempt
3 of the Top Kill, BP made a presentation to Unified Command as
4 to why it believed the Top Kill failed?

5 A. Yes. There was a three-part scenario, as I recall.

6 Q. Do you recall that presentation being made on May 29?

7 A. Yes. It was the day after Top Kill operations concluded.

8 Q. Top Kill operations began on the 26th and concluded on the
9 28th; is that correct?

10 A. 26th, 27th, 28th, yes.

11 Q. In that presentation -- I think we have heard a little bit
12 about this morning -- BP offered three scenarios as to why the
13 Top Kill failed, correct?

14 A. That's correct.

15 Q. BP said that each scenario was possible, correct?

16 A. Yes.

17 Q. But it ended up saying that only the third scenario was
18 possible and plausible; is that right?

19 A. Yes, the third one was supposedly possible and plausible.

20 Q. Let's go to the third scenario.

21 MR. LUNDY: Carl, would you pull up D20012.

22 BY MR. LUNDY:

23 Q. Do you recognize this as the third scenario that BP
24 presented to Unified Command on May 29?

25 A. Yes.

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15 : 20 1 Q. Tell us what the third scenario was that BP presented.

15 : 20 2 A. They're showing -- it's kind of hard to see on this
15 : 20 3 diagram, but they are showing the mud flow coming in through
15 : 20 4 the choke/kill lines above the test rams, and it's going down
15 : 20 5 into the annulus. It's going into the -- there we go. It's
15 : 20 6 actually going -- here's what I call the long string. This is
15 : 20 7 the 9 7/8 long string. Then there's a 16-inch liner that has
15 : 20 8 the rupture disks, and they are showing the flow is actually
15 : 20 9 going in this direction and impinging upon the rupture disks.
15 : 21 10 And then back up the drill pipe. There's an arrow right here,
15 : 21 11 going up that way.

15 : 21 12 Q. Is BP essentially saying that the kill mud -- is that what
15 : 21 13 we are talking about, the mud?

15 : 21 14 A. Yeah. They are pumping a heavy mud, a heavy combination
15 : 21 15 of water and solids, which weighed about 16 1/2 pounds per
15 : 21 16 gallon, as I recall, into the well as part of the Momentum Kill
15 : 21 17 to try to stem the flow. And they are showing that it's going
15 : 21 18 down the back side, as I call it, and then back up the drill
15 : 21 19 pipe.

15 : 21 20 Q. In Scenario 3, was it BP's representation that the mud was
15 : 21 21 exiting through the rupture disks?

15 : 21 22 A. Yeah. They were showing that the mud is -- I think during
15 : 21 23 opening statements there was this same picture that showed the
15 : 21 24 mud exiting out the rupture disks and going out into the
15 : 21 25 seabed.

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1 1 5 : 2 2 Q. Why would the failed rupture disks be a concern?

2 1 5 : 2 2 A. If the failed -- if the rupture disks had failed, then
3 1 5 : 2 2 essentially what you are doing is, you have a broach, and that
4 1 5 : 2 2 can compromise well integrity, especially during well control.

5 1 5 : 2 2 Q. Let's look at BP's conclusions and recommendations as to
6 1 5 : 2 2 the path forward during this presentation.

7 1 5 : 2 2 MR. LUNDY: Carl, would you please pull up D20075.

8 1 5 : 2 2 BY MR. LUNDY:

9 1 5 : 2 2 Q. Do you see the second bullet point that says, "If there is
10 1 5 : 2 2 a path open to formation, then the containment is the preferred
11 1 5 : 2 2 option"? Is that correct?

12 1 5 : 2 2 A. That's what it says.

13 1 5 : 2 2 Q. When they talk about the path open to formation, is that
14 1 5 : 2 2 path through the alleged failed rupture disks?

15 1 5 : 2 2 A. Yes.

16 1 5 : 2 2 Q. The next bullet point says, "Shutting the well via
17 1 5 : 2 2 BOP-on-BOP is likely to lead to broaching"; is that correct?

18 1 5 : 2 2 A. I see that.

19 1 5 : 2 3 Q. Then it goes on to say, in the fourth bullet point,
20 1 5 : 2 3 "Relief wells are most likely solution to kill the well
21 1 5 : 2 3 completely," correct?

22 1 5 : 2 3 A. Correct.

23 1 5 : 2 3 Q. So after this presentation, the BOP-on-BOP option was
24 1 5 : 2 3 removed from the table, correct?

25 1 5 : 2 3 A. Correct. Yeah, it was taken off the table.

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1 Q. In your professional opinion, should the BOP-on-BOP option
2 have been taken off the table?

3 A. No, it should not have been.

4 Q. Why not?

5 A. Because the BOP-on-BOP option could have been utilized to
6 mitigate any concerns about the rupture disks. You could
7 incorporate a venting option. You could actually put the
8 BOP-on-BOP system in place. You could have the well vent
9 through the venting option, and you go through the process of
10 controlling the well that way.

11 Q. Could the concerns of the broach have been mitigated with
12 the BOP-on-BOP option?

13 A. It could have been managed. It could have been managed.
14 So if there was concerns that the formation was in jeopardy,
15 that there was a broach in jeopardy, well integrity was in
16 jeopardy, they always had the option to open the well back up.

17 Q. Let's continue talking about what was represented to
18 Unified Command by BP.

19 MR. LUNDY: If you would, Carl, pull up D20013.

20 BY MR. LUNDY:

21 Q. You see these are deposition transcript excerpts from
22 Charles Holt? You see that first one?

23 A. I do.

24 Q. You recognize Mr. Holt as BP's Top Kill operations
25 manager?

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1 A. Correct.

2 Q. You see where Mr. Holt says that these were the only three
3 scenarios presented by BP for possible failure of Top Kill?

4 A. Yes.

5 Q. You see the next deposition excerpt is Rear Admiral Kevin
6 Cook's deposition?

7 A. Correct.

8 Q. Do you know who Rear Admiral Cook was?

9 A. He was advising Admiral Allen, as I recall, in Houston.

10 Q. Do you see, in response to questioning, he says in his
11 answer that he was there, that he was there in the meeting and
12 that this was the only presentation and that BP said the only
13 plausible explanation for the Top Kill failure was the rupture
14 disks? Is that correct?

15 A. Yes.

16 Q. So Admiral Cook is saying that he was in that meeting on
17 the 29th, right?

18 A. Yes.

19 Q. And that the only plausible explanation BP gave him for
20 the Top Kill failure was the rupture disks explanation,
21 correct?

22 A. Correct.

23 Q. Let's look at the third deposition excerpt, from Dr. Lars
24 Herbst. And we have heard about him this morning, correct?

25 A. Correct. He was the regional manager for the MMS in the

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1 Gulf of Mexico.

2 Q. He too says, from what he recalls, that the only
3 explanation given for the Top Kill failure was the rupture
4 disks explanation; is that correct?

5 A. Correct.

6 Q. Mr. Perkin, let me ask you, in your professional opinion,
7 was the rupture disks the only plausible explanation for the
8 failure of the Top Kill?

9 A. No.

10 Q. Why not?

11 A. Because there was other information that was presented to
12 BP that they did not disclose.

13 Q. Were BP's own employees and contractors telling them that
14 the Top Kill failed due to other reasons?

15 A. Yes.

16 Q. Those reasons were flow rate and a large flow path?

17 A. And large orifice size, yes, large flow path.

18 Q. Is there any other evidence you've seen, besides the
19 evidence of BP's own employees and contractors telling them
20 this, that casts doubt on the collapsed rupture disks theory?

21 A. There was another report, written by Add Energy, I think,
22 that was available after this presentation, but it was by
23 Mr. Selbekk, who wrote a report relative to the Momentum Kill.

24 MR. LUNDY: Carl, would you please pull up D20072.

25

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1 BY MR. LUNDY:

2 Q. This is an excerpt from the report that you are referring
3 to; is that correct?

4 A. Yes.

5 Q. You see where Mr. Selbekk says, "Simulating pumping at
6 78 bpm shows a flat pressure curve, fairly low max pressure,
7 and hardly any drop in pressure, consistent with a situation
8 where basically no mud enters the wellbore"; is that correct?

9 A. Yeah, no kill mud enters the wellbore.

10 Q. Then he goes on to say, "There are other combinations that
11 would give the same outcome...nonetheless, comparing the actual
12 pressure curve with the simulations, there are strong
13 indications that a curve with this shape is the result of a
14 situation where there is not enough restriction at the surface
15 to create enough pressure to force the mud into the well"; is
16 that correct?

17 A. That's what it says.

18 Q. How does this show that rupture collapsed disks did not
19 cause the Top Kill failure?

20 A. If we go back to Scenario 3, in the diagram we just looked
21 at, it shows the kill mud going down the back side of the 9 7/8
22 long string and down through the inside of the 9 7/8 long
23 string. But at the same time, if no kill mud got into the
24 well, then that didn't happen.

25 Q. Was BP aware of Mr. Selbekk's conclusions?

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1 15:28 A. I think they were, yes.

2 15:28 Q. Did Mr. Selbekk send this information to BP's Kurt Mix in
3 an e-mail dated May 29?

4 15:28 A. I think he did.

5 15:28 Q. Did you see any evidence that BP then shared this
6 information with Unified Command?

7 15:28 A. I did not.

8 15:28 Q. You have seen the depositions of Lars Herbst and Tom
9 Hunter, have you not?

10 15:28 A. Yes.

11 15:28 Q. When asked about this, what do you recall them saying?

12 15:28 A. They hadn't seen it either.

13 15:28 Q. Is there any other evidence that rupture collapsed disks
14 were not a likely explanation for the Top Kill failure?

15 15:28 A. Add Energy had another gentleman write a paper or write a
16 report -- I think his name is Morten Emilsen -- and he
17 indicated that he believed that all the flow was strictly up
18 the casing or the 9 7/8-inch long string.

19 15:28 MR. LUNDY: Carl, could you pull up, please, D20073.

20 15:29 BY MR. LUNDY:

21 15:29 Q. Is this the report you were referring to, the Add Energy
22 Morten Emilsen report?

23 15:29 A. What he's saying is that it is believed that the initial
24 flow path was through the leaking casing shoe and up inside the
25 casing.

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1 15:29 Q. How is this evidence that the Top Kill did not fail
2 because of failed rupture disks?

3 15:29 A. The kill mud never got there.

4 15:29 Q. Was this information presented to BP?

5 15:29 A. Not that I'm aware of. It was written for BP too.

6 15:29 Q. Well, was it presented to BP? Because we see that
7 Mr. Emilsen is sending it to BP; is that correct?

8 15:29 A. Correct.

9 15:29 MR. COLLIER: Objection, Your Honor. There's been a
10 lot of leading going on.

11 15:29 MR. LUNDY: I'll rephrase it.

12 15:29 BY MR. LUNDY:

13 15:29 Q. Was this report that Mr. Emilsen created sent to BP?

14 15:29 A. Yes.

15 15:29 Q. Do you know if BP then turned around and sent that
16 information to Unified Command?

17 15:29 A. If they did, I don't think it was immediately.

18 15:29 MR. LUNDY: Let's look at D20074, Carl.

19 15:29 BY MR. LUNDY:

20 15:29 Q. You see that this is an excerpt from Mr. Lars Herbst's
21 deposition?

22 15:30 A. Yes.

23 15:30 Q. Look at the highlighted section:

24 15:30 "QUESTION: Did BP inform you in late May or early
25 June of 2010 that one of its contractors had concluded

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1 that the flow path with -- was up the inside of the
2 casing?

3 "ANSWER: I'm not sure which casing they're referring
4 to in this sentence, but I don't recall that statement
5 being made."

6 Do you see that?

7 A. I do.

8 Q. In your opinion, Mr. Perkin, and based upon what you have
9 seen, were flow rate and large flow path equally, if not more,
10 plausible explanations for the Top Kill failure than the
11 rupture disks explanation?

12 MR. COLLIER: Your Honor, again, I think that is
13 outside the scope of Mr. Perkin's report. He is asking him to
14 provide an opinion as to an analysis that he did not do.

15 THE COURT: Is it in the report?

16 MR. LUNDY: The discussions are, Your Honor. And
17 based upon all that he has seen and all he has discussed in his
18 report about all of the reasons that were known why the
19 Top Kill failed -- the flow rate, the large flow path, which is
20 discussed in his report in detail, and then the documents
21 attached to his report -- I'm asking if those two reasons are
22 as equally plausible explanations as the rupture disks failure.

23 MR. COLLIER: Your Honor, all Mr. Perkin is doing is
24 conveying information he is drawing from documents presented
25 around that time. He's not providing any --

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1 THE COURT: I sustain the objection.

2 BY MR. LUNDY:

3 Q. Should BP have presented flow rate and large flow path as
4 plausible reasons for the Top Kill failure?

5 A. Certainly. Yes.

6 Q. Why is that?

7 A. Because that's a factor that goes into the success or
8 failure of well control in whatever shape or form you want to
9 do it.

10 Q. Now, let's talk about -- and you heard Mr. Brad Brian's
11 opening statement this morning, correct?

12 A. Yes.

13 Q. You heard him talking about consequences, correct?

14 A. I did.

15 Q. Let's talk about the consequences Mr. Brian spoke about
16 this morning. Do you have an opinion whether consequences
17 flowed directly from BP representing to Unified Command that
18 the failed rupture disks was the only plausible explanation for
19 the Top Kill failure?

20 A. No. There were others that we just discussed.

21 Q. What's that?

22 A. There were other reasons we just discussed, not just the
23 failed rupture disks or the potential for the rupture disks to
24 fail.

25 Q. As a result of that representation, that the failed

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1 rupture disks was the only reason for the failure of the
2 Top Kill, did consequences flow from that representation?

3 A. Yes. Delays and consequences flowed from that.

4 Q. What consequences flowed from that?

5 MR. COLLIER: Your Honor, I'm going to object to
6 speculating. He's been doing this a lot.

7 MR. LUNDY: Your Honor, this isn't speculation. This
8 is within the four corners of the report where he talked
9 about -- specifically says --

10 THE COURT: I overrule the objection.

11 BY MR. LUNDY:

12 Q. So what were the consequences that flowed from that
13 representation?

14 A. Primarily, I think the BOP-on-BOP option was, as we say,
15 taken off the table, and I think it also delayed the capping
16 stack option.

17 Q. Have you reviewed evidence that supports your opinion?

18 A. I have.

19 MR. LUNDY: Carl, would you please pull up D20016.

20 BY MR. LUNDY:

21 Q. And right now let's discuss the BOP-on-BOP option that was
22 pulled off the table.

23 Do you see these deposition transcripts from Charles
24 Holt and Lars Herbst?

25 A. I do.

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1 15:33 Q. Do you see where Mr. Barr asked Mr. Holt:

2 15:33 "QUESTION: And as a result of what BP offered at the
3 15:33 time as the most likely reason, the BOP-on-BOP option was
4 15:33 removed as an option, correct?

5 15:33 "ANSWER: Yes, that's correct."

6 15:33 Q. Did I read that correctly?

7 15:33 A. He said: "Yes, that was -- that's correct."

8 15:33 Q. Lars Herbst is asked about the reason that the BOP-on-BOP
9 15:34 option was taken off the table. And the question is:

10 15:34 "QUESTION: This conclusion that BP presented about
11 15:34 the burst disks being responsible for the Top Kill's
12 15:34 failure caused decision makers to turn away from the
13 15:34 BOP-on-BOP option at the end of May; is that right?

14 15:34 "ANSWER: I believe that to be correct, yes."

15 15:34 A. I agree with that.

16 15:34 Q. Now, you see the evidence that the BOP-on-BOP option was
17 15:34 removed as a result of the representation about the failed
18 15:34 rupture disks.

19 15:34 Let's talk about other capping devices. Have you
20 15:34 reviewed evidence in this case that other capping devices were
21 15:34 also removed or delayed as a result of the representation by BP
22 15:34 that the failed rupture disks was the reason for the Top Kill
23 15:34 failure?

24 15:34 A. I have.

25 15:34 MR. LUNDY: Carl, would you please pull up D20017.

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1 15:34 BY MR. LUNDY:

2 15:34 Q. You see that this is an e-mail from James Wellings on
3 15:34 May 30 to John Schwebel, subject Re: 3-ram capping stack. Did
4 15:35 I read that correctly?

5 15:35 A. You did.

6 15:35 Q. You recall that Mr. Wellings is a BP employee who was the
7 15:35 Capping Stack Team leader?

8 15:35 A. Yes.

9 15:35 Q. Do you see where he says, "The plan is long-term
10 15:35 containment"? Do you see that, the highlighted portion of the
11 15:35 box?

12 15:35 A. I do.

13 15:35 Q. Then he goes on to say: "No plans to put BOP-on-BOP or
14 15:35 capping stack." Did I read that correctly?

15 15:35 A. Correct.

16 15:35 Q. What is your understanding of what he is talking about
17 15:35 when he says "capping stack"?

18 15:35 A. It would be the BOP-on-BOP from the *Discoverer Enterprise*
19 15:35 or the *Development Driller II* or, as they call it, the *DDII*.

20 15:35 Q. I'm talking about the second -- after he says
21 15:35 "BOP-on-BOP" --

22 15:35 A. Yes.

23 15:35 Q. -- he says "or capping stack." What is he referring to
24 15:35 when he is talking about the capping stack?

25 15:35 A. The capping stack would be what they ultimately plugged

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1 the well -- capped the well with.

2 MR. LUNDY: Carl, would you please pull up for us
3 D20015.

4 BY MR. LUNDY:

5 Q. You see this is an excerpt from the deposition of Rear
6 Admiral Kevin Cook?

7 A. I do.

8 Q. And Admiral Cook is asked:

9 "QUESTION: So based on the potential risk of a
10 subsea broach that's described in this e-mail, there was a
11 recommendation to move to a containment approach, right?"

12 A. That's correct.

13 Q. Then at the bottom, the highlighted portion, he answers:

14 "ANSWER: So that coming out of this meeting, the
15 integrity of the well became a driver."

16 Do you see that?

17 A. Yes. That's what he says.

18 Q. What is your understanding of what he means by the
19 integrity of the well becoming a driver for the path flow?

20 A. If the well was to lose integrity -- and that was the
21 driving factor, according to Admiral Cook -- then it could
22 compromise the relief well efforts and it could compromise the
23 relief well itself.

24 Q. Let me ask you a question about the BOP. Was there a
25 transducer on that BOP?

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1 A. My understanding, from materials that I reviewed and
2 listening to Dr. Wilson this morning, there was a transducer,
3 which measured pressure and temperature in the mud line.

4 Q. What was the purpose of that?

5 A. It would measure pressure and temperature at that point in
6 the flow. So the transducer basically gives a signal that
7 gives -- it's a milliamp signal basically translated into
8 pressure or temperature or both.

9 Q. There were some readings where -- and it was discussed
10 this morning where BP saw less pressure? The pressure dropped?

11 A. Pressure drops.

12 Q. What does that mean?

13 A. That means the restriction of the flow is greater. It
14 means the opening is greater.

15 Q. Does that mean there's less resistance to flow?

16 A. Pressure is resistance to flow, so if there's a pressure
17 drop, there's less resistance to flow.

18 Q. Would that also mean, if there's less resistance to flow,
19 that there's less likelihood of the Junk Shot working?

20 A. That means there's a larger opening in the system that
21 could, yes, compromise the Junk Shot.

22 Q. Because of -- let me finish up with this question.

23 Because of the representation that BP made about the loss of
24 well integrity due to the rupture disks, is it your opinion
25 that all capping options were delayed?

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1 15:38 A. Yes.

2 15:38 MR. LUNDY: That's all the questions I have at this
3 15:38 time, Your Honor. I tender Mr. Perkin.

4 15:38 CROSS-EXAMINATION

5 15:38 BY MR. COLLIER:

6 15:39 Q. Good afternoon, Mr. Perkin.

7 15:39 A. Good afternoon again.

8 15:39 Q. My name is Paul Collier, and I have you on
9 15:39 cross-examination.

10 15:39 A. I realize that.

11 15:39 Q. I'll be asking the questions on behalf of BP.

12 15:39 A. Thank you.

13 15:39 Q. Now, you criticized aspects of the source control strategy
14 15:39 utilized to control the *Deepwater Horizon* blowout, correct?

15 15:39 A. Yes.

16 15:39 Q. You don't consider yourself to be a well control
17 15:40 specialist?

18 15:40 A. I'm a well control -- I consider myself to be a well
19 15:40 control expert. I've been involved in well control operations,
20 15:40 both by active blowouts and after the blowout.

21 15:40 Q. My question is: You do not consider yourself to be a well
22 15:40 control specialist, correct?

23 15:40 A. That's not what I do full time; yes, you are correct.

24 15:40 Q. At another point in your career, have you been retained to
25 15:40 develop strategies for killing an uncontrolled flowing offshore

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1 well? Correct?

2 A. That's correct.

3 Q. At another point in your career, have you had any
4 responsibilities for responding to a deepwater blowout?

5 A. I don't think a lot of people on this project had, but,
6 yes, that's correct.

7 Q. You personally have had no responsibilities for responding
8 to a deepwater blowout prior?

9 A. I have not.

10 Q. You have worked as a consultant for Engineering Partners
11 since 1996; is that right?

12 A. '95 or '96, yes.

13 Q. Prior to your work on this litigation and your work for
14 Engineering Partners, where you have worked since 1996, you
15 have never been asked to evaluate or testify regarding efforts
16 taken to respond to a deepwater blowout, correct?

17 A. That's correct.

18 Q. Now, you're aware that Unified Command approved all of the
19 source control procedures before they were implemented,
20 correct?

21 A. I heard the testimony this morning, and I heard what was
22 said about that, yes.

23 Q. That's your understanding, correct?

24 A. That was my understanding. That was not what I was asked
25 to look at.

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1 15 : 4 1 Q. Now, you were asked some questions relating to Top Kill,
2 15 : 4 1 correct?

3 15 : 4 1 A. I was.

4 15 : 4 1 Q. One of the things you were asked about was with respect to
5 15 : 4 1 the ability to vent off pressure during the Junk Shot
6 15 : 4 1 procedure, correct?

7 15 : 4 2 A. Yes. I think I testified that if the Junk Shot was to
8 15 : 4 2 take hold and plug the well off, it would simulate what I
9 15 : 4 2 called a hard shut-in.

10 15 : 4 2 Q. You opined that BP did not have a strategy for mitigating
11 15 : 4 2 a pressure buildup associated with the Junk Shot procedure,
12 15 : 4 2 correct?

13 15 : 4 2 A. I have not seen one where, if the pressure spiked
14 15 : 4 2 suddenly, they had a way to relieve that pressure. So the
15 15 : 4 2 well, in my opinion, would have been in jeopardy.

16 15 : 4 2 Q. We talked earlier about Mr. Barnett. Do you recall?

17 15 : 4 2 A. Yes.

18 15 : 4 2 Q. He is an employee with Wild Well Control, correct?

19 15 : 4 2 A. Yes.

20 15 : 4 2 Q. In fact, I think he is a vice president of Wild Well
21 15 : 4 2 Control. Is that right?

22 15 : 4 2 A. That's my understanding.

23 15 : 4 2 Q. You understand that he is a well control specialist,
24 15 : 4 2 correct?

25 15 : 4 2 A. Yes.

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1 15 : 4 2 1 Q. So his expertise relates to responding to blowouts; is
2 15 : 4 2 2 that right?

3 15 : 4 2 3 A. Yes. Both onshore and offshore.

4 15 : 4 2 4 Q. You are aware that Mr. Barnett of Wild Well Control
5 15 : 4 2 5 participated in the risk assessing and planning for the
6 15 : 4 2 6 Top Kill, correct?

7 15 : 4 2 7 A. I believe he was on that peer group, yes.

8 15 : 4 3 8 Q. Do you recall that Mr. Barnett was asked during his
9 15 : 4 3 9 deposition whether, in the event of a pressure buildup during
10 15 : 4 3 10 Junk Shot, there was a way to relieve the pressure?

11 15 : 4 3 11 A. I don't recall the specific answer, but I'm sure you're
12 15 : 4 3 12 going to show me.

13 15 : 4 3 13 MR. COLLIER: Okay. Why don't we bring up
14 15 : 4 3 14 DEP 022.184.1. This is the deposition testimony of
15 15 : 4 3 15 Mr. Barnett, page 183, lines 14 through 20.

16 15 : 4 3 16 BY MR. COLLIER:

17 15 : 4 3 17 Q. The question was:

18 15 : 4 3 18 "QUESTION: Would there be -- if you try the
19 15 : 4 3 19 Junk Shot, would there be any well -- any way to relieve
20 15 : 4 3 20 the pressure?"

21 15 : 4 3 21 Do you see that?

22 15 : 4 3 22 A. I do.

23 15 : 4 3 23 Q. Mr. Barnett's answer was:

24 15 : 4 3 24 "ANSWER: I'm trying to recall what we had connected
25 15 : 4 3 25 to the choke and kill lines, but I believe there was a way

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1 to relieve the pressure through the subsea manifold if we
2 had to."

3 Did I read that correctly?

4 A. You did, but he is not describing how that was going to
5 happen.

6 Q. It's your understanding that Mr. Barnett would have known
7 whether or not there was a way to relieve the pressure during
8 the Junk Shot procedure, correct?

9 A. If it would have been through the choke manifold, I think
10 that would be difficult to do. If you had a sudden rise in
11 pressure, you would have to respond to that.

12 Q. You would agree that Mr. Barnett, at least, believed that
13 this was a way to handle relieving the pressure during the Junk
14 Shot procedure, correct?

15 A. He is not recalling either. He is speculating on what he
16 remembered.

17 Q. His testimony is what his testimony is?

18 A. Correct.

19 Q. Are you familiar with the concept of kill well on paper?

20 A. Yeah.

21 Q. When were you first aware of the kill well on paper? Is
22 that during your research relating to this case?

23 A. I have been around killing wells on paper for a number of
24 years.

25 Q. There was a kill well on paper that was conducted for the

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1 *Deepwater Horizon* response, correct?

2 A. I think there was.

3 Q. The kill well on paper that was performed for the
4 *Deepwater Horizon* response -- this was a meeting to discuss the
5 Top Kill methodology and the modeling associated with it,
6 correct?

7 A. Yes.

8 Q. This was a meeting that was attended by industry experts,
9 correct?

10 A. Yes. You're talking about the Peer Assist?

11 Q. I'm talking about the kill well on paper.

12 A. The kill-well-on-paper meeting?

13 Q. Correct.

14 A. I would assume it would be.

15 Q. Have you reviewed any of the materials related to kill
16 well on paper?

17 A. I don't recall.

18 Q. You don't recall who the participants were with respect to
19 the kill well on paper?

20 A. If I have seen it, I don't recall as I sit here today.

21 **MR. COLLIER:** Now, if we can bring up TREX-9245.1.2.

22 **BY MR. COLLIER:**

23 Q. Do you see that this is an e-mail from Kate Baker? Do you
24 see that?

25 A. I do.

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1 15 : 4 5 Q. And it's May 18, 2010; is that right?

2 15 : 4 5 A. Yes.

3 15 : 4 5 Q. Do you see in the "to" line there, there's a number of
4 15 : 4 5 e-mail addresses that are highlighted? Do you see that?

5 15 : 4 5 A. I see that.

6 15 : 4 5 Q. Those e-mail addresses that are highlighted, would that
7 15 : 4 6 indicate to you that those are individuals that are working
8 15 : 4 6 with the federal government?

9 15 : 4 6 A. I would assume so.

10 15 : 4 6 Q. You would understand that those are scientists that were
11 15 : 4 6 working on the *Deepwater Horizon* response, correct?

12 15 : 4 6 A. Correct. And on the subject line it says "Summary points
13 15 : 4 6 from the Kill Well on Paper Discussion."

14 15 : 4 6 Q. Correct. And there's an attachment that reads "KWOP Notes
15 15 : 4 6 from Discussion." Do you see that?

16 15 : 4 6 A. I see that.

17 15 : 4 6 Q. That would be notes from the kill-well-on-paper discussion
18 15 : 4 6 that was held roughly around May 18, right?

19 15 : 4 6 A. Yes.

20 15 : 4 6 Q. This is about eight days before the Top Kill procedure was
21 15 : 4 6 performed, correct?

22 15 : 4 6 A. Yes.

23 15 : 4 6 Q. This would be an e-mail indicating that BP was providing
24 15 : 4 6 to various government scientists working on the response some
25 15 : 4 6 materials relating to the kill-well-on-paper discussions,

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1 correct?

2 A. If Kate Baker is with -- it says "unknown business
3 partner." I don't recall who she is.

4 Q. You will agree this is an e-mail going to government
5 scientists, correct?

6 A. Yes.

7 Q. It's attaching KWOP notes from the discussion of that --

8 A. I agree with that.

9 I think your question was, was BP sending this, and I
10 don't know that Kate Baker is...

11 Q. Do you agree that this is being sent to government
12 scientists working on the *Deepwater Horizon*?

13 A. I agree with that.

14 Q. Have you seen the attachment that's identified here, KWOP
15 notes from discussion?

16 A. I don't recall having seen it, but if you show it to me,
17 it might jog my memory.

18 MR. COLLIER: TREX-925.2.8, please.

19 BY MR. COLLIER:

20 Q. As you see, the title here reads "Summary Points from the
21 Kill the Well on Paper Discussion, 18 May 2010." Do you see
22 that?

23 A. I see it.

24 Q. This discloses those who were present at the
25 kill-well-on-paper meeting, correct?

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1 A. Yes. I recognize this now.

2 Q. You see that there is an individual by the name of Bob
3 Grace? Do you see that?

4 A. I know Bob.

5 Q. You understand that Bob Grace is a well control
6 specialist, correct?

7 A. Yes.

8 Q. He has expertise in responding to a blowout, correct?

9 A. Yes.

10 Q. Now, you also see that there's a name of Jack Bullman? Do
11 you see that?

12 A. I do.

13 Q. He has after him, in parentheses, the initials of NASA?
14 Do you see that?

15 A. Yes.

16 Q. Do you recognize him as being one of the scientists
17 working for the government in relation to the *Deepwater Horizon*
18 response?

19 A. Yes.

20 Q. Underneath him there's a gentleman by the name of Curt
21 Hammerman? Do you see that?

22 A. Yes.

23 Q. Do you also recognize him as being one of the government
24 scientists who was working on the *Deepwater Horizon* response?

25 A. Okay.

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1 15 : 4 8 Q. So you would agree with me that government scientists were
2 15 : 4 8 attending the kill-well-on-paper discussion, correct?

3 15 : 4 8 A. Right.

4 15 : 4 8 Q. If you go to the third bullet point under the summary
5 15 : 4 8 point section, it reads: "Modeling indicates that a Dynamic
6 15 : 4 8 Kill cannot be successfully executed if the oil flow rate is
7 15 : 4 8 15,000 stock tank barrels per day." Do you see that?

8 15 : 4 9 A. That's what it says.

9 15 : 4 9 Q. This would be an indication, then, that during the KWOP
10 15 : 4 9 there was a presentation indicating to the government
11 15 : 4 9 scientists that there was a 15,000 stock tank barrel per day
12 15 : 4 9 limit with respect to the Momentum Kill operation, correct?

13 15 : 4 9 A. That's what it says.

14 15 : 4 9 Q. If we go further into the document --

15 15 : 4 9 MR. COLLIER: If we could pull up TRES-925.2.3,
16 15 : 4 9 please.

17 15 : 4 9 BY MR. COLLIER:

18 15 : 4 9 Q. The KWOP reads: "Also, the maximum pump pressure must be
19 15 : 4 9 chosen so as not to compromise well integrity. For MC 252
20 15 : 4 9 No. 1, the not-to-exceed pressure used in the calculations was
21 15 : 4 9 8000 psi at the wellhead."

22 15 : 4 9 Did I read that correctly?

23 15 : 4 9 A. That's what it says.

24 15 : 4 9 Q. This was an indication that during this KWOP there was
25 15 : 4 9 discussion of implementing mitigation during the Top Kill

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1 procedure so as not to compromise well integrity, correct?

2 A. Only with respect to pump pressure.

3 Q. You would agree that is at least one of the mitigations
4 that was discussed during this meeting, correct?

5 A. There's one that says maximum pump pressure, but there's
6 others.

7 Q. You would agree that this team was reviewing the Top Kill
8 procedure and assessing the potential success and risks, and
9 that included the government scientists in that meeting,
10 correct?

11 A. (No audible response.)

12 Q. Now, we talked before about Mr. Barnett from Wild Well
13 Control, correct?

14 A. Correct.

15 Q. You were aware that Mr. Barnett, again, worked on the
16 Top Kill procedure, correct?

17 A. Yes.

18 Q. You are aware that Mr. Barnett was aware, relating to this
19 15,000-barrel per day limit relating to the Momentum Kill. Do
20 you understand?

21 A. I'm not sure if I know that he was aware of that number.

22 **MR. COLLIER:** If we can bring up DEP022.105.1.

23 **BY MR. COLLIER:**

24 Q. This is page 104, lines 7 through 15. It reads:

25 **"QUESTION:** Were you aware that Add Energy had done

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1 some modeling that said that Top Kill wouldn't succeed if
2 the flow rate exceeded 15,000 standard barrels of oil per
3 day? Does that ring a bell?

4 "ANSWER: I do remember hearing that."

5 A. Yes. Okay. It rings a bell for me.

6 Q. So Wild Well Control, at least during the planning for the
7 Top Kill procedure, was aware with respect to the 15,000-barrel
8 per day limit, correct?

9 A. Correct.

10 Q. Now, before reaching your opinions relating to Top Kill,
11 did you look to see whether the federal government had
12 performed their own independent analysis of the Top Kill
13 procedure?

14 A. That was not something I was asked to do, as I recall. I
15 was asked to look at the procedures themselves.

16 Q. So it's correct that you have not done any evaluations as
17 to whether or not the federal government, through the Federal
18 Science Team, had looked independently at the Top Kill
19 procedure before it was implemented?

20 A. As I recall, they were given the data as the Top Kill was
21 taking place. And I think, subsequent to the Top Kill, they
22 did their own independent analysis. That's what -- I heard
23 testimony in that regard this morning.

24 Q. But I'm talking about, before Top Kill was implemented,
25 are you aware of the federal government performing their own

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1 independent analysis relating to Top Kill?

2 A. That, I don't recall.

3 Q. Now, at the time of the your deposition, you were not
4 familiar with the Federal Science Team or its role with respect
5 to the Macondo response, true?

6 A. I think that's true.

7 Q. At the time of forming your opinions, you were not aware
8 of what analysis the Federal Science Team did or did not do
9 with respect to the Top Kill procedure, correct?

10 A. That was something I don't think I was asked to do.

11 Q. At the time of forming your opinions, you had not done any
12 evaluation determining what exactly the government was
13 reviewing in assessing Top Kill?

14 A. I was told they were reviewing some data. What I recall
15 is what I heard again this morning.

16 Q. You don't recall seeing any documents that indicated that
17 the U.S. government undertook its own independent evaluation of
18 Top Kill before it was implemented, correct?

19 A. I think they were relying on BP, is what I understand.

20 Q. So you weren't given any notes or data that would allow
21 you to evaluate whether the U.S. government did its own
22 independent evaluation of Top Kill before it was implemented?

23 A. That, I don't recall.

24 Q. Now, I believe you talked earlier about Admiral Allen.
25 Correct?

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1 A. Yes.

2 Q. He was the national incident commander for the
3 *Deepwater Horizon* response, correct?

4 A. Yes.

5 Q. Do you recall that Admiral Allen testified that
6 Secretary Chu led a science team to review and comment on the
7 technical issues associated with each new source control
8 method?

9 A. Okay.

10 Q. Do you have any recollection of that?

11 A. Yes.

12 Q. If we go to DEPO-8.341.1, this is testimony from
13 Admiral Allen. Page 340, line 7 through 16, it reads:

14 "QUESTION: And you say here the participants from
15 the government include Secretary of Energy Chu and
16 representatives from the National Labs, those groups we
17 have been talking about?

18 "ANSWER: That's correct.

19 "QUESTION: And these scientists from government
20 reviewed BP's work and questioned BP's assumptions related
21 to the Top Kill technique, correct?

22 "ANSWER: Yes."

23 Is that correct?

24 A. Yes, based upon what BP told him.

25 Q. You would understand that the Federal Science Team is

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1 15:55 1 doing its own independent work; is that correct?

2 15:55 2 A. Yes. I said they were looking at BP's work and questioned
3 15:55 3 BP's assumptions related to the Top Kill technique. And she
4 15:55 4 answered "yes."

5 15:55 5 Q. Now let me show you TREX-11480.1.1. You see that this is
6 15:55 6 an e-mail from Kim Fleckman, dated May 16, 2010? Do you see
7 15:55 7 that?

8 15:55 8 A. I do.

9 15:55 9 Q. The subject line is "Slides for May 16 Science Meeting"?
10 15:55 10 Do you see that?

11 15:55 11 A. I do.

12 15:55 12 Q. The "to" line of this e-mail, do you see that?

13 15:55 13 A. Yes.

14 15:55 14 Q. Do you understand that to be a reference to Dr. Tom
15 15:55 15 Hunter?

16 15:55 16 A. I don't know his e-mail address, but I'll take your word
17 15:55 17 for it.

18 15:55 18 Q. The covering e-mail reads: "Tom, attached are the slides
19 15:55 19 James Dupree will review with you at 10:30 a.m. CST. Kind
20 15:56 20 regards, Kim." Did I read that correctly?

21 15:56 21 A. You did.

22 15:56 22 Q. Do you know who James Dupree is?

23 15:56 23 A. Off the top of my head, I don't.

24 15:56 24 Q. Do you understand that he is a BP employee who worked
25 15:56 25 during the *Deepwater Horizon* response?

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1 15:56 A. I'll take your word for it.

2 15:56 Q. This is an indication that Mr. Dupree was going to meet
3 15:56 with Dr. Hunter to review certain issues relating to the
4 15:56 *Deepwater Horizon* response, correct?

5 15:56 A. Yes.

6 15:56 Q. Do you recall that Dr. Hunter was the co-head of the
7 15:56 Federal Science Team with Secretary Chu? Correct?

8 15:56 A. Yes.

9 15:56 MR. COLLIER: If we go to the slide deck, I would
10 15:56 like to bring up Slide 22, TREX-11480.22.1.

11 15:56 BY MR. COLLIER:

12 15:56 Q. Do you see the title there reads "Governing Question"?

13 15:56 A. I do.

14 15:56 Q. It reads: "What are the implications of the latest
15 15:56 pressure data at the top of the LMRP and base of the BOP?"

16 15:56 A. I do.

17 15:56 Q. Beneath that, it has the heading "Calculate." Do you see
18 15:56 it?

19 15:56 A. Yes.

20 15:56 Q. It reads: "The likelihood of a successful dynamic or
21 15:56 momentum kill increased significantly." Do you see that?

22 15:56 A. I see that.

23 15:56 Q. And beneath that it says "Review," and it reads: National
24 15:56 Lab (Red Team) expected to conduct a dynamic kill pumping
25 15:56 schedule review as early as Monday." Do you see that?

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1 A. Yes.

2 Q. This would be an indication -- or let me take a step back.

3 National Lab refers to one of the government science
4 teams that was working on the *Deepwater Horizon* response?

5 A. Yes.

6 Q. This would be an indication that at least one of the
7 national labs was conducting an independent assessment relating
8 to the Top Kill, correct?

9 A. Correct. What they are saying is, there's less pressure,
10 so I would agree that there was less momentum to try to kill.

11 Q. My point is that the government scientists who were
12 working on the *Deepwater Horizon* response were doing their own
13 independent analysis relating to issues of the Top Kill,
14 correct?

15 A. If they were taking the data and they were using it, yes.

16 Q. Now, we were just talking about issues before Top Kill,
17 correct?

18 A. Yes.

19 Q. Now I would like to talk about issues after Top Kill
20 concluded.

21 A. All right.

22 Q. Now, you allege that BP made misrepresentations and
23 withheld data after the Top Kill was concluded, correct?

24 A. Correct.

25 MR. COLLIER: If we can bring up TREN-11464R.22.1.

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1 15:58 BY MR. COLLIER:

2 15:58 Q. This is a page from your expert report; is that correct?

3 15:59 A. Yes.

4 15:59 Q. It reads from your expert report: "BP withheld data from
5 the post Top Kill analysis from the U.S. government and
6 misrepresented the reason for the failure of the Top Kill."

7 15:59 A. Correct.

8 15:59 Q. As we have established earlier, you have not reviewed all
9 of the data that was collected during the Top Kill procedure,
10 correct?

11 15:59 A. I have looked at the culmination of the reports of the
12 data, what the data told the experts that were interpreting the
13 data.

14 15:59 Q. You have not looked at the data that was actually
15 generated for Top Kill?

16 15:59 A. I didn't crunch the data.

17 15:59 Q. Along those lines, you have not performed any independent
18 analysis of the Top Kill data, correct?

19 15:59 A. Correct.

20 15:59 Q. You have not set up your own models or reviewed the
21 Top Kill data in any detail, correct?

22 15:59 A. No, I was not asked to do that.

23 15:59 Q. Prior to working on this matter, you had never been
24 involved in evaluating well integrity for a deepwater well,
25 correct?

GREGG PERKIN - CROSS

1 15:59 A. Not for a deepwater well, no.

2 16:00 Q. Prior to working on this matter, you had no experience
3 working with rupture disks that were used in a deepwater well?

4 16:00 A. Not in a deepwater well, no.

5 16:00 Q. Now, with respect to the contention you have that BP
6 withheld data from the post Top Kill analysis from the
7 U.S. government, you understand that your scientists, including
8 Secretary Chu, were reviewing in realtime the pressure and pump
9 data that was being collected from the Top Kill operation,
10 correct?

11 16:00 A. They were getting the data as I understand it, yes.

12 16:00 Q. So you understand your scientists were conducting their
13 own independent analysis of the conclusions that BP was making
14 relating to the Top Kill effort?

15 16:00 A. They were getting the data, that's all I know.

16 16:00 Q. So you have not done any assessment as to whether or not
17 the government scientists and the Federal Science Team were
18 performing their own independent analysis of the Top Kill data?

19 16:00 A. I would presume if they are getting the data, they are
20 doing something with it. I'm not sure what they did with it.

21 16:01 Q. You never took on any effort to look at that issue?

22 16:01 A. I wasn't asked to do that.

23 16:01 MR. COLLIER: Now, if we can bring up TRES-11305.

24 16:01 BY MR. COLLIER:

25 16:01 Q. Do you see at the top of the page there, this is an e-mail

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16:01 1 from S. Chu? Do you see that?

16:01 2 A. Steven Chu, yes.

16:01 3 Q. That would be Secretary Chu, correct?

16:01 4 A. Yes.

16:01 5 Q. And it was dated May 30; is that right?

16:01 6 A. Yes.

16:01 7 Q. If you go to the body of the e-mail, it reads: "I have
16:01 8 made additions and changes for future communications."

16:01 9 Do you see that?

16:01 10 A. I see that.

16:01 11 Q. Do you see that there is an attachment to this e-mail that
16:01 12 Secretary Chu sent, correct?

16:01 13 A. Yeah, riser cut, Q and A, etc.

16:02 14 MR. COLLIER: Let's go to the attachment. If we can
16:02 15 go to 11305.2.2.

16:02 16 BY MR. COLLIER:

16:02 17 Q. This is from the attachment to Secretary Chu's e-mail, and
16:02 18 it reads: "On Friday night, I returned from four days in
16:02 19 Houston where my team of scientists and I have been monitoring
16:02 20 the progress of the Top Kill efforts and helping to design the
16:02 21 strategy for moving forward."

16:02 22 Did I read that correctly?

16:02 23 A. You did. That was shown this morning.

16:02 24 MR. COLLIER: If you go to TREX-11305.2.3.

25

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1 16:02 BY MR. COLLIER:

2 16:02 Q. And it reads: "We have been getting the data at the same
3 16:02 time as BP engineers and conducting our own independent
4 16:02 analysis of the data so that we can verify the conclusions that
5 16:02 BP is making at every step."

6 16:02 Did I read that correctly?

7 16:02 A. You did.

8 16:02 Q. Secretary Chu is saying in his e-mail that your scientists
9 16:02 were conducting their own independent analysis of the
10 16:02 conclusions that BP was making relating to the Top Kill
11 16:03 procedure, correct?

12 16:03 A. That's what it says.

13 16:03 Q. Now, you understand that during the Top Kill procedure,
14 16:03 pump rate and pressure data was collected, correct?

15 16:03 A. I'm sure it was.

16 16:03 Q. You agree that that pump rate and pressure data was
17 16:03 provided to the U.S. government, correct?

18 16:03 A. I have not seen anything to the contrary.

19 16:03 Q. Now, you contend that BP misrepresented the reason for the
20 16:03 failure of the Top Kill, correct?

21 16:03 A. Yes.

22 16:03 MR. COLLIER: We can pull up TREG-11464R.30.4.

23 16:03 BY MR. COLLIER:

24 16:03 Q. This, again, is a page from your report?

25 16:03 A. Yes.

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1 Q. It reads: "BP explained the only possible and plausible
2 reason for the failure of the Top Kill was that the mud flowed
3 through burst rupture disks in the 16-inch OD casing and that
4 further intervention efforts would lead to a subsea blowout."

5 A. That's what it says.

6 Q. That's your opinion; is that right?

7 A. That's what BP said, yes.

8 Q. You're relying on the May 29 presentation that we saw
9 earlier, correct?

10 A. Correct.

11 Q. And this is the May 29 presentation that BP gave to the
12 United States one day after the Top Kill procedure was
13 finished, correct?

14 A. Correct.

15 Q. You talked about earlier there were three scenarios that
16 BP presented in that presentation, correct?

17 A. Yes.

18 Q. For all three of those scenarios, BP represented that they
19 were all possible, correct?

20 A. They did.

21 Q. For one of those scenarios, they identified it was
22 possible and plausible, correct?

23 A. Right, this one.

24 Q. The one that they identified as being possible and
25 plausible was that mud was flowing through the burst rupture

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1 disks?

2 A. Yes.

3 Q. It was based on that conclusion that there was a concern
4 with respect to well integrity, correct?

5 A. Correct.

6 Q. Now, in communications with the government, BP had
7 represented that there could be alternative explanations for
8 Top Kill failure besides the rupturing of the burst disks,
9 correct?

10 A. Say that again, please.

11 Q. In communications with the government, shortly after
12 Top Kill concluded, BP had represented that there could be
13 alternate explanations for Top Kill's failure besides the
14 rupturing of the burst disks?

15 A. Okay.

16 Q. Would you agree with that?

17 A. I'm sure there was communications.

18 MR. COLLIER: Why don't we bring up TREN-9696.1.3,
19 please.

20 BY MR. COLLIER:

21 Q. This is an e-mail from Christina Verchere. Do you see
22 that?

23 A. I do.

24 Q. And it's dated May 31, 2010, correct?

25 A. Correct.

GREGG PERKIN - CROSS

1 Q. This is shortly after the Top Kill operation concluded,
2 right?

3 A. Yes.

4 Q. And the "to" line there is to S. Chu. Do you see that?

5 A. Yes.

6 Q. That would be Secretary Chu, right?

7 A. Yes.

8 Q. You also see in the copy line there's Marcia McNutt and
9 Tom Hunter, correct?

10 A. I see that.

11 Q. And both of them, obviously, are with the government,
12 right?

13 A. Correct.

14 MR. COLLIER: If we can bring up TREX-9696.1.1,
15 please.

16 BY MR. COLLIER:

17 Q. If we can go back up where it says the "from" line. Do
18 you see that?

19 A. I'm sorry?

20 Q. If we go to the "from" line in the e-mail.

21 A. Okay. I'm sorry. I see it.

22 Q. And it's Christina Verchere on behalf of Andy Inglis. Do
23 you see that?

24 A. I see that.

25 Q. Andy Inglis was one of the BP executives at that time,

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1 correct?

2 A. Yes.

3 Q. Mr. Inglis' e-mail reads: "Mr. Secretary, I agree there
4 are two scenarios that could explain the observations from the
5 Top Kill: A, collapsed disk failure during the initial event;
6 B, mud down the well to the reservoir with counterflow of
7 oil/gas upwards."

8 Correct?

9 A. Correct.

10 Q. And so during this e-mail, Mr. Inglis is representing that
11 there is more than one explanation for the failure of the
12 Top Kill, correct?

13 A. Well, he is suggesting that if the collapsed disk failed
14 during the initial event, then there was flow out the rupture
15 disks at the time the blowout occurred. And if that wasn't the
16 case, then he is saying kill -- I'm assuming he is saying kill
17 mud down the well to the reservoir with a counterflow of oil
18 and gas upwards sort of flies in the face of the conclusion
19 that was presented on May 29 because May 29, the slide showed
20 that the casing hanger seal had unseated and that the mud was
21 flowing through that seal down to the rupture disks. So it's a
22 little different.

23 Q. My point is that BP is presenting to the government
24 alternative reasons as to why the Top Kill failed other than
25 the rupture disks, correct?

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1 A. They are not stating the one they said on the 29th. This
2 is something else.

3 Q. This would be an indication that the analysis with respect
4 to why the Top Kill failed was progressing at this time,
5 correct?

6 A. Well, if the rupture disks failed, it had to fail -- if it
7 failed during the initial event, that suggests that there was
8 pressure -- if the casing hanger didn't unseat and the seal
9 would have integrity, then the wellbore pressure caused it to
10 rupture.

11 Q. You would agree with me that this e-mail from Andy Inglis
12 to Secretary Chu is an indication that BP was presenting to the
13 government information about alternative theories as to why the
14 Top Kill failed?

15 A. I don't know what they are telling the government. It
16 looks to me like they are just giving another scenario. It
17 doesn't represent to me what they told them on the 29th.

18 Q. Now, in your report you allege that on May 29, BP
19 contractor Thomas Selbekk concluded from pressure data
20 gathering during the Top Kill that no mud entered the wellbore,
21 correct?

22 A. Yes, and I said that on direct.

23 Q. This is what you discussed earlier, correct?

24 Now, you contend that that conclusion made it
25 implausible that Top Kill failed because of the rupture disks,

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1 correct?

2 A. Well, if the kill mud didn't get in the wellbore, it
3 didn't rupture the disks.

4 Q. You are aware that after May 29 when Mr. Selbekk submitted
5 this report on which he relied, Mr. Selbekk continued to run
6 models and simulations using the Top Kill data to determine why
7 Top Kill failed?

8 A. I'm sure he did.

9 Q. You understand that on June 1 and June 12, Mr. Selbekk
10 forwarded the results of these initial analyses that he did,
11 correct?

12 A. Yes.

13 Q. Have you reviewed those additional models and analyses
14 that Mr. Selbekk conducted on June 1 and June 12?

15 A. I haven't crunched the numbers myself or looked at those
16 analyses, no.

17 Q. So you don't know whether those subsequent analyses that
18 Mr. Selbekk conducted actually provided more detail and more
19 reasons as to why Top Kill failed, correct?

20 A. I'm sure he did a more refined analysis if he had better
21 data or more data.

22 Q. You have an understanding that Mr. Selbekk, in those
23 June 1 and June 12 analyses, provided other reasons as to why
24 Top Kill failed other than loss of mud through the rupture
25 disks?

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1 A. Yes.

2 Q. Now, you also mentioned Mr. Emilsen's analysis during your
3 direct examination, correct?

4 A. Yes.

5 Q. You referenced that as another basis for support as to why
6 the rupture disk scenario was not plausible, correct?

7 A. He said the flow was straight up the casing or the long
8 string.

9 Q. Now, I believe you stated that Mr. Emilsen ran this
10 analysis and you agree that that was shared with the
11 government, correct?

12 A. I don't recall who it was shared with, but I know it was
13 done for BP.

14 Q. In your report you referenced work that was conduct -- you
15 referenced this work that was conducted by Mr. Emilsen,
16 correct?

17 A. Yes.

18 MR. COLLIER: Why don't we bring up TREN-11464R.24.1.

19 BY MR. COLLIER:

20 Q. Now, if you look at the first line there, it says: "On
21 May 31, 2010, BP contractor Mr. Morten Emilsen concluded that
22 the uncontrolled hydrocarbon flow path was up inside the
23 innermost casing, not the annulus."

24 Do you see that?

25 A. Yes.

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1 16:11 Q. And this is dated May 31, his report, correct?

2 16:11 A. Yes.

3 16:11 Q. If you go down to the last line of this paragraph from
4 your report, correct?

5 16:11 A. Yes.

6 16:11 Q. It reads: "BP had not disclosed Mr. Emilsen's report to
7 the U.S. government until late May or early June 2010."

8 16:11 Correct?

9 16:11 A. Correct.

10 16:11 Q. Well, if it was late May, there was only one day left,
11 correct?

12 16:11 A. That's true.

13 16:11 Q. So you agree that at the time that Mr. Emilsen conducted
14 this report, it was very shortly thereafter that it was
15 provided to the U.S. government, based on your own words,
16 correct?

17 16:12 A. Correct.

18 16:12 Q. Now, in your report and on direct examination, you opined
19 that BP's misrepresentations about Top Kill directly led to the
20 discontinuation of the BOP-on-BOP option and further delayed
21 the capping stack?

22 16:12 A. Yes.

23 16:12 Q. Before we talk about the capping stack, Mr. Perkin, I
24 would like to bring up another e-mail relating to government
25 scientists and the work that they were conducting.

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1 MR. COLLIER: If we can bring up TREN-144757.1.1.

2 BY MR. COLLIER:

3 Q. You see the "from" line there reads Marcia McNutt?

4 A. I do.

5 Q. You know who Marcia McNutt is, correct?

6 A. Yes.

7 Q. She was head of the Flow Rate Technical Group during the
8 response, correct?

9 A. Yes, USGS.

10 Q. This is dated Tuesday, May 25, 2010, correct?

11 A. Yes.

12 Q. Now, if you see down in the highlighted section, it reads:
13 "Multiple lines of scientific evidence agree that the rate of
14 release is at least 14,000 to 20,000 barrels of oil per day."

15 Do you see that?

16 A. Yes.

17 Q. This would be an indication at this point in time on
18 May 25 that Dr. McNutt had identified that there were multiple
19 pieces of evidence that indicated that the flow rate could be
20 between 14,000 to 20,000 barrels of oil per day, correct?

21 A. Correct. If you read the rest of this, it says: "We
22 believe that a statement like this will be much more helpful to
23 emergency responders than the current 5,000 barrels of oil per
24 day. It is honest and yet is not as alarmist as the
25 70,000 barrels that has been picked by the media and is

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1 demonstrably wrong."

2 Q. You agree at this point in time, May 25, which is before
3 the Top Kill was performed, that Marcia McNutt, head of the
4 Flow Rate Technical Group, had sent around an e-mail to other
5 government scientists that said the rate of release is at least
6 14,000 to 20,000 barrels of oil per day from the Macondo well,
7 correct?

8 A. She says multiple lines of scientific evidence, so that's
9 what she is reporting.

10 Q. In fact, she is identifying it's not just one line of
11 scientific evidence but there are multiple lines of scientific
12 evidence, correct?

13 A. Correct.

14 Q. This would be an indication that she had done some type of
15 meaningful analysis at this point in time relating to the flow
16 rate?

17 A. I'm not sure she has done meaningful analysis. I think
18 she's taking what has been reported to her.

19 Q. You would agree that this is an e-mail that's being sent
20 from Dr. McNutt to other government scientists that were
21 working on the *Deepwater Horizon* response, correct?

22 A. Looking at the e-mail chain, yes.

23 Q. Have you done any evaluation yourself as to the flow rate
24 estimates that the government had conducted of its own prior to
25 pumping?

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1 A. You asked me that question; and I said, no, I have not
2 done any independent analysis. That was not what I was asked
3 to do.

4 MR. COLLIER: Now, if we can go to TREX-11477. If we
5 can pull up the top part there.

6 BY MR. COLLIER:

7 Q. You see this is an e-mail from Secretary Chu. Do you see
8 that?

9 A. Correct, May 30.

10 Q. This is an e-mail from Secretary Chu dated May 30,
11 correct?

12 A. Yes.

13 Q. It's to other members of the Federal Science Team,
14 correct?

15 A. Correct.

16 Q. Including Marcia McNutt. Do you see that?

17 A. I see her.

18 Q. You also see that Dr. Tom Hunter is copied on the e-mail,
19 correct?

20 A. He's the first one. It's apparently directed to him.

21 Q. This was sent on May 30; and this would have been one day
22 after the May 29 presentation that you discussed during your
23 direct examination, correct?

24 A. Correct.

25 Q. It was the May 29 presentation in which BP presented the

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1 three scenarios as to why Top Kill may have failed, correct?

2 A. Yes.

3 Q. Now, if we can go to the second paragraph in Dr. Chu's
4 e-mail, it begins, "I would like." Do you see that paragraph?

5 A. I would like to read the first -- let me read the -- let
6 me read it first. Can you go back one? Okay.

7 MR. COLLIER: If we could focus on the paragraph that
8 begins with "I would like to," TREN-11477.1.3, please.

9 BY MR. COLLIER:

10 Q. Dr. Chu writes: "I would like to get the lab analysis
11 folks to independently analyze the Top Kill data and see if
12 they come to the same conclusion as BP, namely, the fact that
13 at 70 plus bpm, the pressure in the BOP never exceeded 6300 psi
14 is reasonable evidence that mud was likely flowing through the
15 seal assembly and out the rupture disks."

16 Did I read that correctly?

17 A. Right. He is asking them to look at the data to see if
18 they would come to the same conclusion as BP.

19 Q. This is an indication that Dr. Chu is asking the Federal
20 Science Team to evaluate the reasons why Top Kill failed?

21 A. On May 30.

22 MR. COLLIER: If we can go to TREN-11296.1.1.

23 BY MR. COLLIER:

24 Q. Before we look at the documents, you have not seen any of
25 the government's independent analysis of the Top Kill data,

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1 correct?

2 A. No, I have not. I have seen other analysis of the
3 Top Kill data, but not the government's that I recall.

4 Q. So you are not aware of what analysis the government did
5 with respect to evaluating why Top Kill failed, correct?

6 A. I don't recall seeing it. I would have to check, but I
7 don't recall seeing it.

8 Q. It's here in front of us, we have TRES-11296; and the
9 presentation is by Ron Dykhuizen and Charlie Morrow. Do you
10 see that?

11 A. I do.

12 Q. Do you recognize them as being government scientists who
13 worked on the Federal Science Team?

14 A. All right.

15 Q. Is that your understanding?

16 A. Yes.

17 Q. Do you see the date there, June 1, 2010?

18 A. Yes.

19 Q. So this is after -- at least one or two days after Dr. Chu
20 had requested that the Federal Science Team look into why
21 Top Kill failed, correct?

22 A. Quick response.

23 Q. The title is "Mud Flow During Kill," correct?

24 A. Yes.

25 Q. You understand that Dr. Dykhuizen and Dr. Morrow put

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1 16:19 1 together an analysis and a presentation as to the reasons why
2 16:19 2 Top Kill may have failed?

3 16:19 3 A. Yes.

4 16:19 4 MR. COLLIER: If we can go to TREN-11296.2.1.

5 16:19 5 BY MR. COLLIER:

6 16:19 6 Q. The question that's presented in this slide by
7 16:19 7 Dr. Dykhuizen and Morrow is "Where did the mud flow," correct?

8 16:20 8 A. Yes.

9 16:20 9 Q. That was the question that was being asked or being
10 16:20 10 presented by BP during the May 29 presentation, correct?

11 16:20 11 A. Correct.

12 16:20 12 Q. So this is an indication that the Federal Science Team
13 16:20 13 with Dr. Dykhuizen and Morrow were asking the same question of
14 16:20 14 where did the mud flow during the Top Kill procedure, correct?

15 16:20 15 A. Yes.

16 16:20 16 Q. So you agree that the government, through the Federal
17 16:20 17 Science Team, was conducting its own independent analysis of
18 16:20 18 the reasons why Top Kill failed, correct?

19 16:20 19 A. Apparently so.

20 16:20 20 Q. Now, on direct examination you provided an opinion that BP
21 16:20 21 misrepresented that Top Kill's failure was caused by the
22 16:20 22 bursting of the rupture disks in the 16-inch OD casing,
23 16:20 23 correct?

24 16:20 24 A. Correct.

25 16:20 25 Q. We have talked before; but you have reviewed the

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1 deposition testimony of Admiral Allen, the National Incident
2 Commander, correct?

3 A. Yes.

4 Q. Do you recall Admiral Allen being asked at his deposition
5 whether BP had convinced the government that the rupture disks
6 in the casing had blown out? Do you recall him being asked
7 that question?

8 A. I do recall that.

9 MR. COLLIER: So why don't we bring up DEPO-8.62.2.

10 BY MR. COLLIER:

11 Q. This is page 61, lines 13 through 25 of Admiral Allen's
12 deposition testimony, and the question is:

13 "QUESTION: And one of the primary reasons for that
14 discussion was because BP convinced the government that
15 the rupture disks in the casing had blown out, correct?

16 "ANSWER: Not to my memory."

17 Correct?

18 A. Yes.

19 Q. The question is:

20 "QUESTION: You don't remember that?

21 "ANSWER: No, I don't believe that. If you restate
22 the question, I'll respond to it again. But most of the
23 issues related to well pressure were affirmatively raised
24 by the Government Science Team."

25 Did I read that correctly?

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1 A. Yeah, he was referring it to the Government Science Team.

2 Q. So Admiral Allen is indicating here that it was the
3 Federal Science Team that was indicating that there were issues
4 with well pressure and well integrity and not BP, correct?

5 A. I think he is saying that he is relying upon the
6 Government Science Team for that answer.

7 Q. You understand that Admiral Allen, with respect to well
8 integrity issues, is relying on the Government Science Team,
9 correct?

10 A. The question was -- one of the primary reasons for that
11 discussion was because BP convinced the government that the
12 rupture disks in the casing had blown out, correct? And if I
13 read this response, he says, "I don't believe that." But it
14 looks to me like he is relying upon the Government Science Team
15 to give him that answer or to corroborate what BP is saying.

16 Q. You understand that Admiral Allen is saying that with
17 respect to the rupture disks in the casing being blown out,
18 that he is relying on the Government Science Team?

19 A. That's what I am interpreting this line of questioning to
20 say.

21 Q. Do you also recall Admiral Allen further testified that
22 after Top Kill, it was the combined recommendation of BP and
23 the Federal Science Team that it was too risky to proceed with
24 the BOP-on-BOP option?

25 A. I do remember that, and I disagree with that.

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1 MR. COLLIER: If we can bring up DEPO-8.376.1.

2 BY MR. COLLIER:

3 Q. The question posed to Admiral Allen was:

4 "QUESTION: And were you involved in the
5 decision-making process not to go forward with the
6 BOP-on-BOP as a methodology for shutting in the well?

7 "ANSWER: Well, there were discussions regarding the
8 feasibility of that and the risk involved in it and that
9 the combined recommendation of the BP and the science team
10 and the counsel I was getting was that it was too risky to
11 proceed."

12 Correct?

13 A. Yeah, that was the belief, that the rupture disks had
14 rupture.

15 Q. It was based on information that was provided not only by
16 BP but also the science team that it was too risky to proceed
17 with BOP-on-BOP after Top Kill --

18 A. Based on BP's recommendations, yes.

19 Q. You also understand that Admiral Allen was relying on the
20 science team to provide him data and analysis, correct?

21 A. Well, the science team is what is doing the analysis; but
22 I haven't seen anything where the science team says, yes, we
23 agree with BP.

24 MR. COLLIER: Let's go to TREN-11478.

25

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1 BY MR. COLLIER:

2 Q. This is an e-mail from Dr. McNutt to Secretary Chu and
3 Secretary Salazar, correct?

4 A. Yes.

5 Q. And it's dated May 29, 2010, correct?

6 A. Yes.

7 Q. The e-mail from Dr. McNutt reads -- taking it a step back,
8 this is after Top Kill is concluded, correct?

9 A. Yes.

10 Q. It reads: "Evidence from the Top Kill operation strongly
11 suggests that the original blast ruptured the 18-inch rupture
12 disks in the 16-inch casing."

13 Correct?

14 A. Yes.

15 Q. Then Dr. McNutt goes on: "The best way forward is flow
16 containment and bottom kill."

17 Correct?

18 A. That's what it says.

19 Q. So in this e-mail Dr. McNutt is expressing to
20 Secretaries Chu and Salazar that the preferred way to go
21 forward is with respect to flow containment and not BOP-on-BOP,
22 correct?

23 A. I believe she's parroting what BP told her.

24 Q. Have you seen any evidence to indicate Dr. McNutt was
25 relying on BP and not her own Federal Science Team?

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1 A. It almost parrots what the BP presentation said.

2 Q. Would this document be an indication that the government
3 concluded independent of BP that the 16-inch casing rupture
4 disks had collapsed?

5 A. This would not tell me that the government had made that
6 conclusion.

7 Q. So your testimony is that that is not what you would draw
8 from this?

9 A. No. It looks like they are parroting what BP told the
10 government.

11 Q. And let's go to your deposition.

12 MR. COLLIER: If you can bring up page 349, lines 11
13 through 25, please.

14 BY MR. COLLIER:

15 Q. This is from your deposition and the question was:

16 "QUESTION: And so the e-mail reads: 'Evidence from
17 the Top Kill operation strongly suggests that the original
18 blast ruptured the 18-inch rupture disks in the 16-inch
19 casing, which means that the mud pumped in the Top Kill is
20 merely escaping into shallow formations well above the
21 reservoir; is that correct?

22 "ANSWER: That's what it says."

23 This is the e-mail we just looked at from Dr. McNutt,
24 correct?

25 The next question is:

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1 **"QUESTION:** And this would be an indication that the
2 government was concluding, independent of BP, that the
3 16-inch casing rupture disks had collapsed?

4 **"ANSWER:** That's what it says."

5 A. That's what it says. It is what it is, but I interpret it
6 being that they are parroting what BP told them.

7 Q. But you have no independent support for that conclusion?

8 A. I have not gone to Dr. McNutt or Marcia McNutt and asked
9 her.

10 Q. Now, you provided some testimony during direct examination
11 that the BOP-on-BOP option should have been pursued after the
12 Top Kill procedure concluded, correct?

13 A. Yes.

14 Q. Now, I want to be clear that the capping stack that was
15 installed on July 15, that was attached to a piece of equipment
16 known as the flex joint flange?

17 A. Right.

18 Q. It was not attached to the lower BOP stack of the
19 *Deepwater Horizon*?

20 A. That's correct. It was attached to the flex joint
21 connection at the top of the LMRP. As I understand it, it's
22 the flange on top of the annular.

23 **MR. COLLIER:** If we can bring up D-23274A, please.

24 **BY MR. COLLIER:**

25 Q. Now, do you recognize that to be a schematic drawing of

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1 the *Deepwater Horizon* BOP stack?

2 A. Yeah.

3 Q. At the top there is the flex joint. Do you see that?

4 A. Yes.

5 Q. Then below that is the LMRP, correct?

6 A. Yeah, and then there's the *Horizon* BOP.

7 Q. And the LMRP is the upper part of the *Deepwater Horizon*
8 stack, right?

9 A. Yeah, the LMRP is right there.

10 Q. Then below the LMRP is the lower BOP stack?

11 A. Correct.

12 Q. Below that is the wellhead casing, correct?

13 A. Correct.

14 Q. Now, with respect to the BOP-on-BOP operation, you agree
15 that the BOP would be attached to the lower BOP stack, correct?

16 A. Attached, right. If they don't pull the LMRP, yeah, they
17 have to attach it right there.

18 Q. So you would have to remove the LMRP in order to complete
19 the BOP-on-BOP operation?

20 A. Not necessarily. You could build a crossover between
21 the -- if you cut off the riser, you remove the flex joint, you
22 can make an adapter between the two.

23 Q. So you're suggesting you could attach the BOP for the
24 BOP-on-BOP operation above the LMRP?

25 A. If you had an adapter, yeah.

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1 16:29 Q. Did you see any indication in the response that anyone on
2 16:29 the Well Capping Team had investigated attaching a BOP on top
3 16:29 of the LMRP?

4 16:29 A. No. What I understood was they were going to remove the
5 16:29 LMRP.

6 16:29 Q. You understand, however, that the risks associated with
7 16:29 removing the LMRP were deemed too great and -- were deemed too
8 16:29 great and, therefore, the capping stack was attached to the top
9 16:29 of the flex joints?

10 16:29 A. The capping stack that was used to contain the well, yes.
11 16:29 But what I'm saying is that if you wanted to pursue the
12 16:30 BOP-on-BOP option -- and I heard in the opening statement about
13 16:30 the structural instability, which I disagree with -- you could
14 16:30 create essentially an adapter, if you will, that would sit on
15 16:30 top of the LMRP and would allow, say, the *Discoverer Enterprise*
16 16:30 BOP to be attached to it.

17 16:30 Q. You agree that on June 3, the riser on top of the BOP was
18 16:30 cut away?

19 16:30 A. Yes.

20 16:30 Q. You understand when they cut away the riser and the kink
21 16:30 in that riser, they found two pieces of drill pipe side by
22 16:30 side, correct?

23 16:30 A. They did.

24 16:30 Q. You understand that there was a concern among the Response
25 16:30 Team at that point in time that there might be side-by-side

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1 1 6 : 3 0 1 drill pipe through the LMRP and in the lower BOP stack,
2 1 6 : 3 0 2 correct?

3 1 6 : 3 0 3 A. I get it.

4 1 6 : 3 0 4 Q. You understand that there was then concern about removing
5 1 6 : 3 0 5 the LMRP from the lower BOP stack?

6 1 6 : 3 0 6 A. I get that part too.

7 1 6 : 3 0 7 Q. So you understand the team decided to pursue a capping
8 1 6 : 3 1 8 stack on top of the flex joint as opposed to pursuing removal
9 1 6 : 3 1 9 of the LMRP, correct?

10 1 6 : 3 1 10 A. That's my understanding. But you could have looked at a
11 1 6 : 3 1 11 BOP-on-BOP with an adapter spool between the flex joint and the
12 1 6 : 3 1 12 bottom of the -- you would have a connector that would be on
13 1 6 : 3 1 13 top of that spool.

14 1 6 : 3 1 14 Q. You would agree that that would require a substantial
15 1 6 : 3 1 15 amount of engineering, correct?

16 1 6 : 3 1 16 A. I don't think so. You would have to talk with people who
17 1 6 : 3 1 17 are probably a little closer to that design project, but you
18 1 6 : 3 1 18 are talking about a flange like this one on the right; you're
19 1 6 : 3 1 19 talking about a connector, and that is something that can be
20 1 6 : 3 1 20 done, I think, rather quickly.

21 1 6 : 3 1 21 Q. You have not conducted your own independent evaluation as
22 1 6 : 3 1 22 to whether or not it would be possible to attach a BOP on top
23 1 6 : 3 1 23 of the LMRP, correct?

24 1 6 : 3 1 24 A. Well, I wasn't asked to do that; but if the LMRP was voted
25 1 6 : 3 1 25 to be left on, there are alternatives.

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1 Q. Would you agree that as far as attaching a capping device
2 above the LMRP, it would be preferred to use a capping stack, a
3 much lighter device than a full BOP?

4 A. Well, that's true; but you have to understand that if you
5 land the -- say you land the *Discoverer Enterprise's* BOP on top
6 the LMRP, that has to be in tension; in other words, the
7 systems on the *Discoverer Enterprise* have to keep the riser and
8 the BOP in tension. There's no compression. There's no -- you
9 are not squashing or structurally impeding the *Horizon's* BOP.

10 Q. You understand, however, that the capping device that was
11 installed on July 12 was above the flex joint, correct?

12 A. Yes.

13 Q. And you understand that during the response, there was a
14 substantial amount of engineering that went into attaching the
15 capping device to the flex joint flange, correct?

16 A. I watched it, yes.

17 Q. One of the issues that the team had to contest with with
18 respect to attaching a capping device above the flex joint
19 flange was straightening out the flex joint flange from the
20 incline that it was on?

21 A. I recall that.

22 Q. To do that, the team had to develop tools, correct?

23 A. Yes.

24 Q. They had to perform testing, correct?

25 A. I don't know exactly how much testing was done, but I'm

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1 1 6 : 3 3 1 sure they did.

2 1 6 : 3 3 2 Q. You would agree it would be prudent to do testing before
3 1 6 : 3 3 3 attempting this type of connection subsea, correct?

4 1 6 : 3 3 4 A. You want to take all the risks out of the equation that
5 1 6 : 3 3 5 you can.

6 1 6 : 3 3 6 Q. So you want to make sure you finish all your testing and
7 1 6 : 3 3 7 make sure you have as much chance of success before attempting
8 1 6 : 3 3 8 to connect the capping stack above the flex joint, correct?

9 1 6 : 3 3 9 A. That's correct. That's what we talked about earlier with
10 1 6 : 3 3 10 Mr. Lundy.

11 1 6 : 3 3 11 Q. You understand that a specially built flange was developed
12 1 6 : 3 3 12 in order to attach the capping stack above the flex joint,
13 1 6 : 3 4 13 correct?

14 1 6 : 3 4 14 A. That's my understanding.

15 1 6 : 3 4 15 Q. You don't know how long it took to design and develop the
16 1 6 : 3 4 16 flange needed to connect the capping stack to the flex joint,
17 1 6 : 3 4 17 correct?

18 1 6 : 3 4 18 A. You're going to have to ask somebody who -- I don't know
19 1 6 : 3 4 19 how long it took. If -- if it was something that was going to
20 1 6 : 3 4 20 take time, it should have been given some priority.

21 1 6 : 3 4 21 Q. As far as you know, it was given a priority, correct?

22 1 6 : 3 4 22 A. Well, I think it should have been given a priority from
23 1 6 : 3 4 23 day one.

24 1 6 : 3 4 24 Q. You would agree that there was a Well Capping Team that
25 1 6 : 3 4 25 was looking at connecting a capping device above the flex joint

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1 flange very early on in the response?

2 A. Correct, but my understanding was that those processes
3 became delayed as a result of the failure of the Top Kill.

4 Q. And do you have any independent basis for suggesting that
5 the connecting of the capping stack to the flex joint became
6 delayed after the Top Kill decision?

7 A. I think there's evidence that shows that it was delayed
8 some.

9 Q. Are you familiar with Trevor Smith?

10 A. Yes.

11 Q. Trevor Smith, as you understand, was the team lead for
12 connecting the capping device to the flex joint flange?

13 A. Yes.

14 Q. Do you recall Mr. Smith testifying in his deposition about
15 the many engineering challenges the team had to face in order
16 to attach the capping device to the top of the flex joint
17 flange?

18 A. Well, I get that part because of the complexities in the
19 flex joint and how it attaches to the LMRP.

20 Q. Now, you stated that the BOP-on-BOP option should have
21 been pursued after Top Kill, correct?

22 A. I think it should have been -- it was being pursued before
23 Top Kill. It could have continued to have been pursued during
24 Top Kill and it would not have, in my mind, impeded Top Kill.
25 If Top Kill failed, you still had the BOP-on-BOP option going

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1 forward.

2 Q. Now, at the time the Top Kill -- take a step back.

3 The BOP-on-BOP option was being developed with the
4 *DDII* BOP, correct?

5 A. No, I think it was initially with the *Discoverer*
6 *Enterprise*. I think after the decision was made to go to
7 containment, the *Discoverer Enterprise* was relegated to
8 hoovering, as we say. But in my mind, that BOP was ready to
9 go. If BP had specified they wanted a venting feature on that
10 BOP, they should have made it known early on and that could
11 have been accommodated.

12 Q. You agree that there was a Well Capping Team that set
13 up -- sorry, there was a Well Capping Team that was set up
14 early on in the response, correct?

15 A. Yes.

16 Q. That Well Capping Team was directed towards developing a
17 capping solution for the *Deepwater Horizon* incident?

18 A. There was a BOP-on-BOP solution and a Capping Team, as I
19 understand it.

20 Q. They were also looking at capping stack, correct?

21 A. Correct, but the BOP-on-BOP solution was virtually ready
22 to go.

23 Q. Now, I would like to talk about the status of the
24 BOP-on-BOP option at the time of Top Kill.

25 A. Okay.

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1 Q. At the time of Top Kill, you understand that the BOP at
2 that point was the *DDII* BOP?

3 A. As I recall, it was the *Discoverer Enterprise*.

4 Q. At the time of Top Kill, it's your memory that --

5 A. If it was late May, I think it was *Discoverer Enterprise*.

6 Q. Do you recall when the *Discoverer Enterprise* was assigned
7 to do -- to work on the collection efforts?

8 A. I don't recall its specific date, but my recollection was
9 that it got relegated to containment after the Top Kill failed.

10 Q. Now, during the course of the development of the
11 BOP-on-BOP option, you understand that there was a Peer Assist
12 that took place?

13 A. Yes.

14 Q. You understand that Peer Assist was conducted on May 13
15 and 14, correct?

16 A. I don't recall the date.

17 Q. I'm sorry?

18 A. I don't recall the date.

19 Q. You talked about Peer Assist in your direct examination,
20 correct?

21 A. I did.

22 Q. Peer Assist is a meeting of industry experts to assess the
23 feasibility and risk associated with various operations,
24 correct?

25 A. Right.

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1 16:39 Q. You agree that performing a Peer Assist is a good idea
2 16:39 when you are attempting an operation that is unfamiliar or not
3 16:39 normal, correct?

4 16:39 A. Well, yeah, I agree with that.

5 16:39 Q. You agree it was a good idea to perform the Peer Assist
6 16:40 relating to the capping solutions, correct?

7 16:40 A. Correct.

8 16:40 MR. COLLIER: If we can go to TREN-10522.1.1.

9 16:40 BY MR. COLLIER:

10 16:40 Q. You see this is an e-mail from Jon Turnbull. Do you see
11 16:40 that?

12 16:40 A. I do.

13 16:40 Q. And it's dated May 15, 2010?

14 16:40 A. Correct.

15 16:40 Q. And the subject is "Top Preventer Peer Assist
16 16:40 Recommendations." Do you see that?

17 16:40 A. I do.

18 16:40 Q. The attachment was an attachment to this e-mail?

19 16:40 A. PowerPoint.

20 16:40 Q. The PowerPoint presentation had the title "Top Preventer
21 16:40 Peer Assist Recommendations Final," correct?

22 16:40 A. Correct.

23 16:40 MR. COLLIER: If we can go to the cover e-mail. And
24 16:40 this is TREN-10522.1.4.

25

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1 16:40 BY MR. COLLIER:

2 16:40 Q. This is a paragraph in the cover e-mail that Jon Turnbull
3 16:40 was sending around on May 15, 2010. Do you understand this is
4 16:40 after the Peer Assist for the capping solution was conducted,
5 16:41 correct?

6 16:41 A. Correct. I have seen this before.

7 16:41 Q. Mr. Turnbull's e-mail reads: "On this date, May 15, 2010,
8 16:41 there is much to be done for the BOP-on-BOP to be implemented
9 16:41 with confidence and the move to get additional resource into
10 16:41 your team to assist is important to maximize the probability of
11 16:41 this operation being successful."

12 16:41 Correct?

13 16:41 A. Correct.

14 16:41 Q. So you would agree at the time that the Peer Assist was
15 16:41 concluded on May 15 that one of the conclusions of the Peer
16 16:41 Assist Team was that there was still much work to be done for
17 16:41 the BOP-on-BOP solution?

18 16:41 A. I'm not sure what he means by "much work." My
19 16:41 information, at least the information that I reviewed, implied
20 16:41 to me or told me that it was going to be another week or so
21 16:41 away.

22 16:41 MR. COLLIER: Now, if we can go to the list of
23 16:41 participants -- well, actually, if we can go to the attachment
24 16:41 to Mr. Turnbull's e-mail. And if we can go to the --

25 16:41 Q. There's a list of the Peer Assist participants. Do you

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1 1 6 : 4 2 see that?

2 1 6 : 4 2 A. I do.

3 1 6 : 4 2 MR. COLLIER: This is TREN-10522.50.1.

4 1 6 : 4 2 BY MR. COLLIER:

5 1 6 : 4 2 Q. Do you see there that it lists out the members of the
6 industry who participated in this Peer Assist?

7 1 6 : 4 2 A. I see that.

8 1 6 : 4 2 Q. It has members from BP, from Wild Well Control,
9 ExxonMobil, Transocean, MMS, Oceaneering, and Cameron Iron
10 Works. Do you see that?

11 1 6 : 4 2 A. I do.

12 1 6 : 4 2 Q. You would consider those entities to have individuals who
13 have expertise relating to subsea operations, correct?

14 1 6 : 4 2 A. Correct, particularly TO and Cameron Iron Works.

15 1 6 : 4 2 Q. And I'd like to discuss a few of the recommendations and
16 action items that came out of the Peer Assist. Now, one of the
17 risks that was discussed during that Peer Assist was the risk
18 of hydrate formation during the landing of the BOP, correct?

19 1 6 : 4 2 A. I remember that.

20 1 6 : 4 2 Q. You agree that with respect to evaluating the source
21 control method, mitigating hydrate formation is a factor you
22 would have to consider?

23 1 6 : 4 2 A. Correct.

24 1 6 : 4 2 MR. COLLIER: Let's bring up Slide 9 from the Peer
25 Assist, please.

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1 16:43 BY MR. COLLIER:

2 16:43 Q. Do you see there are general recommendations, BOP-on-BOP?

3 16:43 Do you see that?

4 16:43 A. I do.

5 16:43 Q. The bullet point is: "Focus on Hydrate Risks and
6 Mitigations."

7 16:43 A. Correct.

8 16:43 Q. If you go two bullet points down, it says: "Decide on
9 which new ideas we need to pursue and which should be dropped?
10 (e.g., shroud around base of BOP)."

11 16:43 Correct?

12 16:43 A. Correct.

13 16:43 Q. You agree at this point in time that the Peer Assist was
14 identifying hydrate formation as a potential risk of the
15 BOP-on-BOP operation, correct?

16 16:43 A. Correct.

17 16:43 Q. At this point in time, you would agree that the hydrate
18 mitigation was in its planning stages, correct?

19 16:43 A. It was.

20 16:43 Q. You understand that the modeling and assessments of
21 hydrate formation were not completed before the Top Kill had
22 started on May 26?

23 16:43 A. That I don't recall, but you would have to show me.

24 16:43 MR. COLLIER: Carl, let's bring up TREN-10647.

25

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1 16:43 BY MR. COLLIER:

2 16:43 Q. This is an e-mail from Chris Matice of Stress Engineering.
3 16:44 Do you see that?

4 16:44 A. I do.

5 16:44 Q. It's dated May 27, correct?

6 16:44 A. Yes.

7 16:44 Q. He is talking about heat transfer and he is talking about
8 16:44 10,000-barrel per day flow to assess hydrates via CFD of BOP
9 16:44 stack placement?

10 16:44 A. Correct.

11 16:44 Q. This would be an indication that Mr. Matice is conducting
12 16:44 heat transfer modeling relating to hydrate formations in the
13 16:44 BOP and BOP operation, correct?

14 16:44 A. Based on a 10,000-barrel per day flow.

15 16:44 MR. COLLIER: If we can go to TREN-10647.2.1.

16 16:44 BY MR. COLLIER:

17 16:44 Q. And Chris Matice says: "Attached is our heat transfer
18 16:44 analysis for the case of 10,000-barrel per day flow. Please
19 16:44 let me know if there are additional images that would be
20 16:44 helpful to you in assessing the formation of hydrates."

21 16:44 Correct?

22 16:44 A. Yes.

23 16:44 Q. At this point in time, assessment of hydrate formation was
24 16:44 still in the works as far as the BOP-on-BOP option?

25 16:45 A. Correct. And they were working on other models.

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1 Q. Mr. Matice also identifies: "We are working on the
2 20,000- and 70,000-barrel per day cases."

3 Correct?

4 A. Correct.

5 Q. He had additional models that he was going to run relative
6 to hydrate mitigation; is that correct?

7 A. Correct.

8 Q. Now, we discussed earlier that the BOP-on-BOP option was
9 being pursued where you would remove the LMRP, correct?

10 A. Yes.

11 Q. And you understand that the Peer Assist that identified
12 LMRP removal as one of the key risks with respect to the
13 BOP-on-BOP option, correct?

14 A. You and I talked about that.

15 Q. You understand that, by May 24, that the procedure for
16 removing the LMRP had not been approved, correct?

17 A. I don't recall.

18 MR. COLLIER: If we go to TREX-144989.1.3, please.

19 BY MR. COLLIER:

20 Q. You see that there's an e-mail from Iain Snedden; do you
21 see that?

22 A. I do.

23 Q. And it's dated May 24, 2010, correct?

24 A. Right. And it says, "Revised LMRP Removal Procedure:
25 *Deepwater Horizon.*"

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1 16:46 Q. This would be attaching a draft LMRP removal procedure,
2 correct?

3 16:46 A. Correct.

4 16:46 Q. Do you recognize the individuals Iain Snedden and Eddy
5 Redd and Asbjorn Olsen and John Mackay as being Transocean
6 employees?

7 16:46 A. This ring a bell.

8 16:46 Q. This would be an indication that, on May 24, 2010,
9 Transocean was providing comment and feedback regarding LMRP
10 removal, correct?

11 16:46 A. Correct.

12 16:46 Q. This would be an indication on May 24 that the procedure
13 for LMRP removal had not been approved?

14 16:46 A. I don't know what the e-mail says. He has a revised
15 removal procedure, but you need to show me the rest of the
16 e-mail.

17 16:47 MR. COLLIER: If we go to TREN-144989.1.9.

18 16:47 BY MR. COLLIER:

19 16:47 Q. This is the earlier e-mail in the chain, an e-mail from
20 John Mackay; do you see that?

21 16:47 A. I do.

22 16:47 Q. And John Mackay is a Transocean employee?

23 16:47 A. Yes.

24 16:47 Q. Subject is "Revised LMRP Removal Procedure *DWH*"?

25 16:47 A. Yes.

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1 16:47 Q. It reads: "DWH LMRP removal document checked and changes
2 noted."

3 Correct?

4 A. Correct.

5 16:47 Q. This would be an indication that John Mackay of Transocean
6 is providing feedback relating to the LMRP removal procedure
7 for the BOP-on-BOP option, correct?

8 A. Correct, that there was a procedure that's been looked at.

9 16:47 Q. Now, you understand that there were risks that the Peer
10 Assist identified with respect to installing the BOP-on-BOP
11 option, correct?

12 A. Yes. There's always risks.

13 16:47 MR. COLLIER: Let me pull up the May 13-14 Peer
14 Assist. If we go to TREG-10522.39.2, if we can go to the
15 bullet point fourth from bottom.

16 BY MR. COLLIER:

17 16:47 Q. Would you agree that this is a list of issues that the
18 Peer Assist Team had identified with respect to installing the
19 BOP for the BOP-on-BOP option, correct?

20 A. Yes. I've seen this.

21 16:48 Q. One of the issues they identify is a "Guidance system such
22 that BOP is positively in place before landing assuming loss of
23 visibility, involving ROV operators and consider how *Horizon*
24 stack could be utilized."

25 16:48 Correct?

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1 A. Yes.

2 Q. You understand the Peer Assist recommended a guidance
3 system for landing the BOP because of visibility issues
4 associated with the hydrocarbon --

5 A. I think that's true.

6 Q. You understand that a guide frame was designed and was
7 manufactured during the month of May, correct?

8 A. I know that one was designed and I know it was
9 manufactured.

10 Q. You understand that Wild Well Control, the well control
11 specialist company, was the one that designed and manufactured
12 that guide frame?

13 A. I think that's true.

14 Q. You understand they were still working on that guide frame
15 at the end of May, correct?

16 A. I think that's true too.

17 Q. Now, you talked earlier about a venting solution with
18 respect to the BOP-on-BOP option?

19 A. Right.

20 Q. And you understand that the Peer Assist identified the
21 need for a venting option with the BOP-on-BOP option, correct?

22 A. I don't think they identified it early on; I think it was
23 identified later.

24 Q. If we go to the May 13, 14 Peer Assist and we go to
25 TREX-10522.40.1, this is one of the slides of the Peer Assist

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1 16:50 reports, and it reads "Shut-in Well." Do you see that?

2 16:50 A. It says: "Shut-in well."

3 16:50 Yes.

4 16:50 Q. And you agree it reads: "BOP-on-BOP"?

5 16:50 A. It does.

6 16:50 Q. So this would be in reference to BOP-on-BOP operation?

7 16:50 A. Right.

8 16:50 Q. The Peer Assist identified that one of the issues was:
9 "Pressure buildup when well shut-in, how to manage bleed of
10 pressure risks to rig."

11 16:50 Correct?

12 16:50 A. Correct.

13 16:50 Q. That would be an indication for the need for a venting
14 option, correct?

15 16:50 A. What's the date on this?

16 16:50 Q. This is from the Peer Assist May 13-14?

17 16:50 A. My understanding was that, when the BOP-on-BOP option was
18 being -- was coming to fruition, that it was right after the
19 blowout, and this is almost a month later.

20 16:50 Q. Now, you understand the Well Capping Team that was created
21 shortly after the explosions on the rig comprised of
22 Transocean, Wild Well Control, and Cameron employees, correct?

23 16:51 A. Correct. My understanding is they were doing what BP
24 wanted them to do, and I would think a venting option was
25 specified until about this time.

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1 16:51 Q. Do you see any evidence that the individuals from
2 16:51 Transocean, Wild Well Control, or Cameron, prior to May 13 and
3 16:51 14, had been recommending a venting option for use in the
4 16:51 BOP --

5 16:51 A. They were being driven to put a BOP-on-BOP solution
6 16:51 together, and BP gave them no indication that they also needed
7 16:51 a venting solution.

8 16:51 Q. So you agree that the first time a venting solution came
9 16:51 about as a feature for the BOP-on-BOP option was with respect
10 16:51 to the Peer Assist on May 13 and 14?

11 16:51 A. It seems like mid-May, yes.

12 16:51 Q. Now, did you understand that, as of the end of May, there
13 16:51 still was not a venting option that was ready for the
14 16:52 BOP-on-BOP option, correct?

15 16:52 A. I think there was work -- I think efforts were sidetracked
16 16:52 with the Top Kill operation.

17 16:52 Q. But you agree that, at the end of May, there was still
18 16:52 work being done with respect to the venting option for the
19 16:52 BOP-on-BOP option?

20 16:52 A. Yeah, but that wouldn't take a long time. There was
21 16:52 plenty of places to vent that BOP on that BOP.

22 16:52 Q. Now, you understand that, with respect to the BOP-on-BOP
23 16:53 option, there was a time when the *DDII* was considered for use?

24 16:53 A. Yes.

25 16:53 Q. And its BOP would be used with the BOP-on-BOP option,

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1 16:53 correct?

2 16:53 A. Correct.

3 16:53 Q. You understand that, at the end of May, it was the *DDII*
4 16:53 BOP that was to be used with the BOP-on-BOP option?

5 16:53 A. Correct.

6 16:53 Q. And you are aware that West Engineering was conducting an
7 16:53 audit of the *DDII* BOP at the end of May, correct?

8 16:53 A. Yes.

9 16:53 **MR. COLLIER:** If we can go to TREX-145079.1.3,
10 16:53 please.

11 16:53 **BY MR. COLLIER:**

12 16:53 Q. Do you see that this is an e-mail from Asbjorn Olsen; do
13 16:53 you see that?

14 16:53 A. I do.

15 16:53 Q. And it's dated May 25, 2010?

16 16:53 A. I do, yes.

17 16:53 Q. You recognize Mr. Olsen as being a Transocean subsea
18 16:54 engineer?

19 16:54 A. Yes.

20 16:54 Q. He is sending that to Eddy Redd, who is a Transocean
21 16:54 employee also, correct?

22 16:54 A. Uh-huh.

23 16:54 Q. He is also copying Rob Turlak?

24 16:54 A. He is.

25 16:54 Q. Rob Turlak is a Transocean subsea engineer?

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1 A. I think so.

2 Q. And the subject line is: "Status BOPs."

3 Correct?

4 A. Correct.

5 Q. This was sent on May 25, 2010, correct?

6 A. Yes.

7 Q. This is right before Top Kill was being implemented; is
8 that correct?

9 A. Yes, the day before.

10 Q. I would like to draw your attention further down into the
11 e-mail, TRES-145079.1.4, and there's a heading that reads "*DDII*
12 Stack MODs"; do you see that?

13 A. I do.

14 Q. This is work that was being conducted to get the *DDII*
15 ready to be used with the BOP-on-BOP option?

16 A. Listing out the things they need to do.

17 Q. There, it says: "Test ram changeover will take one to two
18 days from when it is confirmed and all other BOP activities are
19 complete. Spool, FSV, etc. will be ready to ship on Tuesday
20 (June 1) to the rig. (BP should be given Tuesday to Thursday
21 PM shipping.)"

22 Correct?

23 A. Yes.

24 Q. At this point in time, you agree there were still
25 modifications being made to the *DDII* with respect to the

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1 BOP-on-BOP option?

2 A. Correct.

3 Q. If you go further down into the e-mail, there's a section
4 that reads "DDII Testing"; do you see that?

5 A. Yes.

6 Q. This is dated May 25, correct?

7 A. Right.

8 Q. The first line there reads: "Autoshear and deadman failed
9 the testing."

10 A. I knew that.

11 Q. This is an indication that the DDII BOP from the
12 Transocean rig the DDII had failed autoshear and deadman
13 testing on this date, correct?

14 A. Yes.

15 Q. It also notes underneath there: "SPM leaking. Hydril are
16 there with the Rig Team."

17 Correct?

18 A. Yes.

19 Q. You would agree, at this point in time on May 25, 2010,
20 that the DDII BOP was not ready to be implemented with the
21 BOP-on-BOP option?

22 A. I agree with that.

23 Q. You agree there's still work to be done in order to get
24 the DDII BOP ready?

25 A. Correct. I'm still a little puzzled as to why they went

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1 from that -- from the *Enterprise* to the *DDII*.

2 Q. You understand the *Discoverer Enterprise* was being used as
3 a rig collection --

4 A. I get that part, but there were efforts to use that BOP on
5 the *Horizon* BOP. And it was my understanding that it was
6 almost ready to go.

7 Q. Now, with respect to the *Discoverer Enterprise*, have you
8 evaluated the West report that was being performed on the
9 *Discoverer Enterprise* BOP?

10 A. The West report?

11 Q. Correct.

12 A. I don't recall seeing it.

13 Q. You are not aware of any West report that was prepared
14 relating to an inspection of the *Discoverer Enterprise* BOP in
15 May?

16 A. I think I do recall seeing something like that.

17 Q. Now, you understand that the West Engineering report with
18 respect to the *Discoverer Enterprise* BOP identified that there
19 were several issues with the BOP, correct?

20 A. Yes.

21 Q. At the time of your deposition, you didn't recall exactly
22 what issues were raised by the West Engineering report,
23 correct?

24 A. Correct.

25 Q. That was not something you considered in forming your

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1 16:57 opinions relating to the BOP-on-BOP option, correct?

2 16:57 A. I would have to see the report.

3 16:57 Q. You don't -- when you formed your opinions as to the
4 16:57 *Discoverer Enterprise* BOP being used with the BOP-on-BOP
5 16:57 option, you weren't considering the West report, correct?

6 16:57 A. I don't think I recall what the West report said when you
7 16:57 asked me these questions during the deposition. I was relying
8 16:57 upon what information I had been given and been provided with
9 16:57 relative to the availability and the usefulness of the
10 16:57 enterprise BOP-on-BOP.

11 16:57 Q. In forming your opinions, you don't recall reviewing the
12 16:57 West Engineering report relating to the *Discoverer Enterprise*
13 16:57 BOP?

14 16:57 A. I don't recall as I sit here today.

15 16:57 MR. COLLIER: If we can go to TREN-11677.

16 16:57 BY MR. COLLIER:

17 16:57 Q. Do you see that as a West Engineering report?

18 16:57 A. Yes.

19 16:58 Q. The subject is "*Discoverer Enterprise*"?

20 16:58 A. Correct.

21 16:58 Q. This is the rig that was -- BP was going to -- the BOP was
22 16:58 going to be used for the BOP-on-BOP option?

23 16:58 A. Correct.

24 16:58 Q. If we could go to the "Project Summary" page, the third
25 16:58 page of the document, it's TREN-11677.3.5. You see there that

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1 Transocean is the owner of the *Discoverer Enterprise*?

2 A. Correct.

3 Q. The dates of assessment that West performed the inspection
4 of the *Discoverer Enterprise* BOP was from the 28th of April
5 through the 16th of May, correct?

6 A. Correct.

7 Q. You understand that West recorded the work and findings
8 that it made in daily reports that were attached to this
9 report, correct?

10 A. Correct.

11 **MR. COLLIER:** Let's go to the daily report from May
12 9, please, and this is TREX-11677.129.2.

13 **BY MR. COLLIER:**

14 Q. You see that's dated May 9, 2010, correct?

15 A. Yes.

16 Q. If we can go further down into that daily report, on
17 May 9, it reads: "West was informed tonight that a potential
18 problem with the forward casing shear ram bonnet may exist."

19 If you go further down: "The subsea engineer
20 informed West that he has a call in to Hydril. His plan is to
21 have Hydril come to the rig and investigate this issue."

22 Correct?

23 A. Correct.

24 Q. On this date, the casing shear bonnet for the
25 *Discoverer Enterprise* BOP was leaking; is that correct?

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1 A. He said no leaks were observed. He said there was a
2 potential problem for the forward casing shear ram bonnet.
3 Let's see. He said on April 29: "While performing an EDS, the
4 rod seals were leaking and had to be replaced." That's
5 O-rings.

6 "The rod seals were replaced and the bonnet was
7 tested. No leaks were observed."

8 I mean, they were working on it.

9 Q. You agree that was an issue that was being worked on?

10 A. Yes.

11 Q. And that Hydril was coming to the rig to investigate?

12 A. They were moving forward with the *Enterprise* BOP.

13 Q. If we can go to West's May 16 daily report, which is
14 TREN-11677.145.5. You see that's dated May 16, 2010, correct?

15 A. I do.

16 Q. If you can go to the "Daily Report" section there, which
17 is TREN-11677.146.3, do you see the projected work scope?

18 A. I do.

19 Q. This would be identifying the work that still needed to be
20 done with respect to the BOP on that date of May 16, correct?

21 A. Correct.

22 Q. What it identifies on that date of May 16 with respect to
23 the *Discoverer Enterprise* BOP is that there was to be performed
24 end of work maintenance procedures on the BOP, correct?

25 A. Correct. And it's listing out the scope of work.

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17:00 1 Q. And there would be pressure testing that would be
17:00 2 conducted of various components, correct?

17:00 3 A. Correct. Number 7 said, "The rebuilt casing shear ram
17:01 4 bonnet was delivered to the rig."

17:01 5 Q. Right. If you go down to -- Item 7 identifies that a
17:01 6 rebuilt casing shear ram bonnet was delivered to the rig,
17:01 7 correct?

17:01 8 A. Correct.

17:01 9 Q. This would be in relation to the issue we just talked
17:01 10 about, about the problem that had been found with the casing
17:01 11 shear ram bonnet?

17:01 12 A. Correct.

17:01 13 Q. And so, as of this date, that was sort of an issue that
17:01 14 was still being worked out?

17:01 15 A. Correct, but they were still working on it.

17:01 16 Q. Right above this, it also identifies that on this date,
17:01 17 May 16th, they were still working on rebuilding the 5K to 4K
17:01 18 high pressure casing shear ram regulator, correct?

17:01 19 A. Yep.

17:01 20 Q. You would agree that these were items that would need to
17:01 21 be completed before the *Discoverer Enterprise* BOP would be
17:01 22 ready to be implemented with the BOP-on-BOP option?

17:01 23 A. I get that part, but they are working on it.

17:01 24 Q. Now, I would like to go back to a couple of issues we just
17:01 25 discussed relating to the rupture disks and the issues about

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1 the government's independent analysis relating to the rupture
2 disks.

3 **MR. COLLIER:** I would like to bring up TREX-9146,
4 please.

5 **BY MR. COLLIER:**

6 **Q.** You see this is an e-mail from Carol Browner; do you see
7 that?

8 **A.** Yes.

9 **Q.** This is dated May 29, 2010, correct?

10 **A.** Correct.

11 **Q.** The subject is "Important News"; do you see that?

12 **A.** Yes.

13 **Q.** Do you know -- Carol Browner is a government employee,
14 correct?

15 **A.** I take your word for it.

16 **Q.** Do you understand that the individuals that are in the
17 "To:" section of this e-mail are also government employees,
18 correct?

19 **A.** Yes.

20 **Q.** If you look at the subject matter or you go to the body of
21 the e-mail, it reads: "Our scientists have determined that the
22 risks are too great to shut in the well from the top. For
23 example, with the addition of a new BOP, that means that, until
24 the relief well is completed (mid-August at best), we will be
25 in the position of capturing the leaking oil with a cap and new

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1 riser to a vessel on the surface."

2 Did I read that correctly?

3 A. You did.

4 Q. It's true on this date that Carol Browner, a government
5 employee, is identifying to other government employees that
6 government scientists have determined that there are too great
7 a risk of shutting-in the well at this date of May 29?

8 A. If that's what they determined. It looks to me like they
9 are parroting what BP told them. Because there is a venting
10 option you put on a BOP, and you can mitigate -- you can manage
11 the pressure.

12 Q. But you would agree with respect to Ms. Browner's e-mail,
13 she is identifying that it is the government scientists who
14 have determined what risks are too great?

15 A. I'm not sure how the government scientists determined that
16 the risks are too great. They are not BOP experts. They don't
17 understand how BOPs are designed, used, manufactured, tested.
18 But you can put a venting option, plural, on a BOP and you can
19 vent and manage pressure.

20 Q. You would agree that, at this point in time, Ms. Browner
21 from the government is identifying that the government
22 scientists have determined the risks are too great to shut in
23 the well with the BOP --

24 A. My answer is: I don't know how they determined that.

25 Q. You would agree that's what she wrote?

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17:04 1 A. That's what she wrote, but I don't know how they
17:04 2 determined that.

17:04 3 Q. Now, earlier, we discussed an e-mail that Secretary Chu
17:04 4 sent on May 30, shortly after the Top Kill procedure was
17:04 5 completed, correct?

17:04 6 A. Yes.

17:04 7 MR. COLLIER: If you would bring up TRES-11477,
17:04 8 please.

17:04 9 BY MR. COLLIER:

17:04 10 Q. You recognize that was the e-mail that we discussed
17:05 11 earlier, correct?

17:05 12 A. Yes.

17:05 13 Q. Do you recall that Dr. Chu -- or Secretary Chu represented
17:05 14 that he would like to get the lab analysis folks to
17:05 15 independently analyze the Top Kill data and see if they come to
17:05 16 the same conclusion as BP, correct?

17:05 17 A. We talked about that.

17:05 18 MR. COLLIER: If I could bring up TRES-144847,
17:05 19 please. If you can pull up the top part.

17:05 20 BY MR. COLLIER:

17:05 21 Q. This is an e-mail from Tom Hunter to Sheldon Tieszen; do
17:05 22 you see that?

17:05 23 A. I do.

17:05 24 Q. Dated May 31, 2010, and the subject is "Flow"; do you see
17:05 25 that.

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17:05 1 A. "Flow."

17:05 2 Q. If we can go to an earlier e-mail in that chain and you
17:05 3 see there's an e-mail from Secretary Chu to Tom Hunter and
17:06 4 Sheldon Tieszen; do you see that?

17:06 5 A. I do.

17:06 6 Q. And it's dated May 31, 2010; is that right?

17:06 7 A. Yes.

17:06 8 Q. Again, this is shortly after the Top Kill concluded?

17:06 9 A. Let me read it.

17:06 10 Okay. Is there a question?

17:06 11 Q. If you go to the paragraph that begins "I discussed"; do
17:06 12 you see that? The second paragraph?

17:06 13 I'd ask you to pull up TRES-144847.1.2. This reads:
17:06 14 "I discussed with Tom Hunter yesterday afternoon the importance
17:06 15 of doing a completely independent analysis of the Top Kill
17:06 16 data. The BP scenarios are reasonable, but I see a number of
17:07 17 other scenarios. While it will not influence the strategy
17:07 18 going forward, it is necessary for the communications to the
17:07 19 American public the likely state of the BOP and well and the
17:07 20 risks going forward."

17:07 21 Did I read that correctly?

17:07 22 A. You did.

17:07 23 Q. This is what Secretary Chu was writing on this date,
17:07 24 May 31, 2010, to other government scientists?

17:07 25 A. Correct.

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17:07 1 MR. COLLIER: Thank you, Mr. Perkin. At this time, I
17:07 2 have no further questions.

17:07 3 THE COURT: Redirect.

17:07 4 MR. LUNDY: Briefly, Your Honor.

17:07 5 REDIRECT EXAMINATION

17:07 6 BY MR. LUNDY:

17:08 7 Q. Mr. Perkin, I just have a few questions. I think we need
17:08 8 to clear something up. I was hoping maybe even establishing a
17:08 9 timeline here about questions asked by Mr. Collier regarding
17:08 10 e-mails by Dr. McNutt and Dr. Chu. You recall that long litany
17:08 11 of questions?

17:08 12 A. I do.

17:08 13 Q. Let's go back. We know that BP's presentation about why
17:08 14 the Top Kill failed was May 29, correct?

17:08 15 A. Correct.

17:08 16 Q. That's the day where it told the government Top Kill
17:08 17 failed because the rupture disks had collapsed?

17:08 18 A. Yes.

17:08 19 MR. LUNDY: Will you pull up TRES-4478, Carl.

17:08 20 BY MR. LUNDY:

17:08 21 Q. This is the McNutt e-mail. Do you recall the questions
17:09 22 about that and you were shown the McNutt e-mail where she said,
17:09 23 "Strong -- there's strong evidence of failed rupture disks"?

17:09 24 A. Yes. I recall that.

17:09 25 Q. She -- that e-mail, if you recall, was dated May 29,

GREGG PERKIN - REDIRECT

17:09 1 correct?

17:09 2 A. Correct.

17:09 3 Q. We also know that the BOP-on-BOP option was pulled off the
17:09 4 table on May 29 after the presentation, correct?

17:09 5 A. That's my understanding, yes.

17:09 6 MR. LUNDY: Could we pull up what BP showed earlier,
17:09 7 which was TREX-11477. Can you pull it up for us, please?

17:10 8 BY MR. LUNDY:

17:10 9 Q. This is the e-mail that you were shown where Secretary Chu
17:10 10 was requesting an independent analysis, correct?

17:10 11 A. Correct.

17:10 12 Q. And it's dated what?

17:10 13 A. May 30.

17:10 14 Q. So given the fact that Secretary Chu didn't even request
17:10 15 an independent analysis until May 30, what was Dr. McNutt
17:10 16 relying upon when she said "There's strong evidence of
17:10 17 collapsed rupture disks"?

17:10 18 A. BP.

17:10 19 Q. And all the other documents that you were shown about
17:10 20 communications between scientists before May 30 and before the
17:10 21 analysis was done had to be relying upon what?

17:10 22 A. BP.

17:10 23 MR. LUNDY: No further questions. Thank you.

17:11 24 MR. MILLER: At the pretrial, you mentioned possibly
17:11 25 shutting down a little early because of the Saints game. Is

17:11 1 that still the Court's intention? We are trying to figure out
17:11 2 the best use of our time left. Do we have 20 minutes left or
17:11 3 45 minutes left? That's the question.

17:11 4 **THE COURT:** Who's the next witness?

17:11 5 **MR. MILLER:** The issues are these, Your Honor. We
17:11 6 definitely would want to do the video of Secretary Chu next.
17:11 7 It's actually Chu, Mr. Patteson, and Admiral Cook. That's
17:11 8 about 11 minutes. It would make most sense to follow them up
17:11 9 with the videos of Vargo and McWhorter. BP has pending
17:11 10 objections on those. I don't know if you looked at those at
17:11 11 the break too. That's another 10 or 11 minutes.

17:11 12 **THE COURT:** Why don't you just play the Chu ones now
17:11 13 and then recess for the evening?

17:11 14 **MR. MILLER:** That's fine by me. I didn't know if the
17:11 15 Court wanted to go to 6:00 or break at 5:30. It matters not to
17:12 16 us, but we definitely want to play Chu, Patteson, and Cook
17:12 17 next --

17:12 18 **THE COURT:** Since I have already ruled on the Chu
17:12 19 objections, why don't we play that. It's about 10 minutes, 11
17:12 20 minutes?

17:12 21 **MR. MILLER:** Chu, Patteson, and Cook are 11 minutes
17:12 22 altogether.

17:12 23 **THE COURT:** Let's play those and then we'll recess
17:12 24 for the day.

17:12 25 **MR. MILLER:** Are you going to look at Vargo and

1 McWhorter before tomorrow morning?

2 **THE COURT:** I'll look at those this evening in
3 between watching --

4 **MR. MILLER:** Halftime.

5 **MR. BRIAN:** Your Honor, Brad Brian for Transocean and
6 the aligned parties.

7 I also have a small binder of the transcripts
8 and the exhibits. They include the two McWhorter and Vargo in
9 the binder as well.

10 Your Honor, I think I already introduced
11 Secretary Chu. Mr. Patteson is a former BP employee who served
12 as a BP lead in the Top Kill effort. And Admiral Kevin Cook
13 was a rear admiral in the U.S. Coast Guard who served as a
14 National Incident Commander's representative to the Houston
15 Incident Command post and attended BP's May 29 Top Kill
16 analysis presentation.

17 **THE COURT:** Okay.

18 (Video deposition clips of Steven Chu and Mark
19 Patteson played.)

20 **MR. BRIAN:** That concludes the videotapes,
21 Your Honor.

22 **THE COURT:** What's going to be the lineup of the
23 witnesses tomorrow for the aligned parties?

24 **MR. BARR:** Your Honor, Mr. Turlak will be the first
25 witness.

17:25 1 **THE COURT:** He is a fact witness, correct?

17:25 2 **MR. BARR:** He's the first fact witness. Next live
17:25 3 witness is Bea, followed by the next live witness, Ziegler.
17:25 4 And I think there might be some video clips in between.

17:26 5 **THE COURT:** Okay. Anything else before we recess for
17:26 6 the evening?

17:26 7 **MR. O'ROURKE:** Your Honor, Steve O'Rourke for the
17:26 8 United States.

17:26 9 During the examination by BP of Mr. Perkin, the
17:26 10 personal home e-mail of Secretary Dr. Chu was read into the
17:26 11 record, which may be a violation of the Privacy Act. So I want
17:26 12 to make a motion --

17:26 13 **THE COURT:** Let's just strike that.

17:26 14 **MR. O'ROURKE:** Thank you.

17:26 15 **THE COURT:** You had something, Mr. Irpino?

17:26 16 **MR. IRPINO:** We had our depo bundles. The PSC just
17:26 17 needs to move those into evidence for the record, and inData
17:26 18 has the list and the thumb drive.

17:26 19 **THE COURT:** Why don't you just have the list ready
17:26 20 and we can introduce that in the morning. We will introduce
17:27 21 them like we did last time. The depositions will go in subject
17:27 22 to any objections that have been made.

17:27 23 **MR. IRPINO:** BP has objections. I know at least some
17:27 24 of their objections are stated in the bundle, but I invite them
17:27 25 tomorrow morning, when we put them in, to state precisely what

17:27 1 they want.

17:27 2 **MR. LANGAN:** Andy Langan for BP. Mr. Irpino is
17:27 3 correct: Tomorrow would be great.

17:27 4 **MR. BROCK:** I have one issue, Judge Barbier, and that
17:27 5 was just, maybe, if we could get some guidance at some point
17:27 6 this week on what Your Honor is thinking about in terms of
17:27 7 post-trial briefing or argument or whatever you think the right
17:27 8 approach would be for the quantification case. Obviously, we
17:27 9 have a Quantification Team that's here that's a little
17:27 10 different -- we have a Source Control Team here that's a little
17:27 11 different than our Quantification Team. I would just like to
17:27 12 let them know, sort of, what the schedule would be by the end
17:27 13 of the week, if that's possible.

17:28 14 **THE COURT:** Well, I haven't really given any thought
17:28 15 to that. So if you all have some suggestions, I'll consider
17:28 16 it.

17:28 17 **MR. BROCK:** Sure, sure. Okay. Thank you.

17:28 18 **THE COURT:** Anything else? Everyone have a good
17:28 19 evening and we'll be back at 8:00 in the morning.

17:28 20 **THE DEPUTY CLERK:** All rise.

17:28 21 (Proceedings adjourned.)

17:28 22 * * *

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CERTIFICATE

I, Toni Doyle Tusa, CCR, FCRR, 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 matter.

s/ Toni Doyle Tusa
Toni Doyle Tusa, CCR, FCRR
Official Court Reporter

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