

Deposition Testimony of:

Galina Skripnikova

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Page 359:10 to 359:12

10 Q. Good morning, Ms. Skripnikova.
11 My name is Paul Thibodeaux, and this is my
12 colleague, Mary Kate Klinefelter. We

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16 If you don't mind, please turn
17 to tab 1 in the binder that I handed you.
18 I've marked this as Exhibit 3533. It bears
19 Bates Nos. BP-HZN-BLY00082874 through 914.
20 A. Yes.
21 Q. This is a -- I think what it is
22 is a -- is a -- is a different draft of the
23 technical memorandums we looked at yesterday.
24 Yesterday we looked at a July -- I'm sorry,
25 May 25th version. It was marked as
1 Exhibit 3375.
2 A. Yes.
3 Q. We also looked at a July 26th
4 version marked as Exhibit 3532. Both
5 Exhibit 3532 and the May 25th version have
6 "Draft" written across the front.

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10 Q. The -- the Exhibit 3533 which I
11 handed you, which is July 26th, does not have
12 the "Draft" marking on it. And what I want
13 to know is, is this the final version --
14 Exhibit 3533, is it the final version --
15 A. I don't know.
16 Q. You don't know. As far as you
17 know, when was the final version of this
18 technical memorandum prepared?
19 A. The last time I worked on this
20 memorandum was -- I don't know exactly. I
21 suppose shortly before the 26th, because I
22 provided my part and the other people
23 provided my part. We looked through the
24 documents and then -- through this document
25 all together as a team, and then it was
1 submitted, I sup- -- I guess the team -- the
2 team leader, Bryan Ritchie, I don't know what
3 the date he put on this, was it the same day

4 or he worked on that more and did it next
5 day. I -- I don't know.

Page 363:01 to 366:21

1 Q. (BY MR. THIBODEAUX) I think you
2 testified yesterday that you prepared
3 Pages 13 through 36 of the technical
4 memorandum, correct, which is the
5 petrophysics section?
6 A. Yes.
7 Q. Based on Exhibit 3533 which you
8 have before you, which is the July -- the
9 July 26th version, were there any additions
10 made to your section, petrophysics section,
11 after July 26th?
12 MR. LANCASTER: Object to form.
13 A. I don't know. I did not make
14 that.
15 Q. (BY MR. THIBODEAUX) Okay. You
16 didn't make them?
17 A. I did not.
18 Q. Okay. Is there anybody else --
19 A. I --
20 Q. -- that you're aware of that
21 would be making changes to your section of
22 that document?
23 A. I don't know.
24 Q. You don't -- you don't know?
25 A. (Shaking head.)
1 Q. Did anybody else help you work
2 on that section?
3 A. There were colleagues of pe- --
4 the team -- one of -- of the versions of the
5 document was submitted for re- -- for --
6 submitted to this team, Kate Baker, Cindy
7 Yeilding, Jay Thorseth and Peter Carragher.
8 Then we had the feedback and I had a feedback
9 from Kate Baker with the questions on the --
10 on the side.
11 Q. Uh-huh.
12 A. And the word document, like,
13 clarify this --
14 Q. Uh-huh.
15 A. -- what do you think about that?
16 That is not clear. This is not -- so there

17 was bunch of things she wanted me to clarify,
18 rephrase, or give more explanation, and I
19 did.

20 So then when we got -- after --
21 after that we had -- and I -- I suppose other
22 people had as well, but I don't know about
23 that.

24 Q. Sure.

25 A. And so after that the document
1 was put together, not again, but update --
2 updated sections. So we sat all together as
3 a team and went through the -- I wanted to
4 make -- to make sure to the team before we
5 submitting it back again to Kate Baker the
6 addition that I make are clear, because
7 English isn't my -- not my --

8 Q. Sure.

9 A. -- first language. That's why I
10 did not -- the people did not participate in
11 the numbers and parameters and changing them,
12 but they were -- they help me a little bit to
13 rephrase it to make it clear, so I will say,
14 like, English language-wise.

15 Q. Okay. After you resubmitted it
16 to Ms. Baker again did you get any more
17 feedback from her?

18 A. I did not.

19 Q. Okay. What -- what's the
20 purpose of -- of preparing Exhibit 3533?

21 A. It was requested from those
22 people for the technical memorandum.

23 Q. Okay. And by "those people" you
24 mean Ms. Baker, Ms. Yeilding, Mr. Thorseth,
25 and Mr. Carragher?

1 A. Yes, because I would not hold my
2 report -- technical memorandum. I was asked
3 for the -- better physics feedback. But who
4 requested it, I don't know. May -- I guess
5 it's sending to them. I guess they requested
6 it. I mentioned yesterday I put a summary
7 like that --

8 Q. Sure.

9 A. -- in any case.

10 Q. Had you ever prepared a
11 post well subsurface description of a well
12 prior to Exhibit 3533?

13 A. Yes.
14 Q. Is that something you typically
15 do on -- on all wells that you work on?
16 A. I did it when I worked Sakhalin,
17 yes. The -- those operation wells.
18 Q. Uh-huh.
19 A. I also did the petrophysical
20 evaluation of leased wells, partner wells,
21 and I always put the presentation in my work.

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3 Q. All right. Please turn to
4 Page 23 of Exhibit 3533. Do you see the
5 section in the middle of the page that's
6 titled "Permeable Intervals"?
7 A. Yes.
8 Q. All right. In -- in preparing
9 this report, you did an analysis to determine
10 the permeability of the sands, sand intervals
11 that are set forth on Page 24 in Figure 20,
12 right? Yeah, right there. Page 24, you got
13 it.
14 A. Yes, I -- yes.
15 Q. Is that right?
16 A. Yes.
17 Q. Okay. Any hydrocarbon sand or
18 any -- I'm sorry.
19 Any sand that is hydrocarbon
20 charged is a permeable sand, right?
21 MR. LANCASTER: Object to form.
22 A. Not necessary.
23 Q. (BY MR. THIBODEAUX) Okay. When
24 is -- when is a hydrocarbon charged sand not
25 permeable?
1 A. If the viscosity of hydrocarbons
2 are too high to flow through formation, like
3 bitumens.
4 Q. Excuse me?
5 A. Asphalt bitumens, they kind
6 of --
7 MR. LANCASTER: B-i-t-u-m-e-n.
8 A. (Continuing) They stuck in the
9 formation. They can't flow without
10 additional, like, fracturing or there is
11 special treatments of those reservoirs, then

12 the hydrocarbons can get -- if you -- if you
13 meet in, like, the very viscous oils, in
14 heavy oils, there is lots of paraffins. So
15 if you warm it up, right, the paraffin, they
16 melt and can flow. So those kind of
17 treatments can be applied to -- to that.
18 So --

19 Q. (BY MR. THIBODEAUX) Okay. So
20 that would not include hydrocarbon sands that
21 are charged by gas, then, correct?

22 A. No.

23 Q. So any sand that is charged by
24 gas is a permeable zone, right?

25 A. Permeable sands can be charged
1 with hydrocarbon, including oil and gas or
2 water.

3 Q. Okay. It was your job with
4 respect to the Macondo well to inform the
5 Macondo drilling engineers of the permeable
6 zones in the Macondo production interval;
7 isn't that right?

8 MR. MONICO: Objection; form.

9 MR. LANCASTER: Object to form.

10 A. It was my responsibility to
11 determine the zone, but I did not inform
12 drilling engineer directly.

13 Q. (BY MR. THIBODEAUX) Okay.
14 Well, walk me through the process of when you
15 make that determination of what the permeable
16 zones are. Who do you give that information
17 to who then relays it to the drilling
18 engineers?

19 A. In this case it was operation
20 geologists who ask me about shallow
21 hydrocarbon-bearing zones.

22 Q. And that would be Mr. Bodek,
23 correct?

24 A. Yes.

25 Q. Take a look at Figure 20 on
1 Page 24, please.

2 A. Yes.

3 Q. And I just want to go through
4 the different columns so you can explain to
5 me what each column represents. The column
6 to the far left looks like it represents
7 certain depths, but there is no title on the

8 top. What is that -- what does that column
9 represent?

10 A. It's a topple.

11 Q. It looks to me like it might be
12 a measured --

13 A. It's a -- it's a --

14 Q. Is it the measured depth?

15 A. The first -- was first -- yes,
16 it's measured depth, you're right.

17 Q. So the first column is measured
18 depth?

19 A. Yes. Yes.

20 Q. Okay. And then next two columns
21 from the left indicated as "Tops Sand TVD 1"
22 and "Tops Sand TVDSS 1," what is the
23 distinction between TVD and TVDSS?

24 A. TVD is true vertical depths.

25 Q. Excuse me?

1 A. TVD is true vertical depths.

2 Q. True vertical depth?

3 A. So you know what true vertical
4 depth is?

5 Q. Uh-huh.

6 A. So the TVD subsea, if the kelly
7 bushing is obstructed from -- from the TVD.

8 Q. Okay.

9 A. Kelly bushing elevation.

10 Q. Okay. And then the next column,
11 which is fourth from the left, is "Tops Sand
12 Formation." What does that mean?

13 A. It's assigned -- or agreed, the
14 names for the sands. We were working
15 together as a subsurface team. The 57 or 56
16 is an age. It's Miocene 57, Miocene 56.

17 Q. So the "M" stands for Miocene?

18 A. Yes. M57 -- Miocene, M57;
19 Miocene, M56. And A, B, C -- A -- those --
20 it was just alphabetical order, alpha- --
21 like they're assigned to the sands --

22 Q. To the various --

23 A. -- to communicate.

24 Q. Yeah, just the various zones
25 that you --

6 A. (Continuing) They do not
7 represent H.
8 Q. (BY MR. THIBODEAUX) Okay. So
9 the -- the -- the A, B, C lettering simply
10 represents the various intervals, correct?
11 A. We use those letters to dif- --
12 differentiate that the sands, and it's not
13 related to the age.
14 Q. Okay. In -- in the last column,
15 Tops Sand, I think it says "Cumulative Gross
16 Sand"?
17 A. Yes.
18 Q. Is that simply the depth of the
19 actual interval?
20 MR. LANCASTER: Object to form.
21 Q. (BY MR. THIBODEAUX) I'm sorry,
22 the thickness?
23 A. Yes, it is.
24 Q. And all of the numbers that are
25 on -- that are in this Figure 20 are all in
1 feet, correct?
2 A. Yes.
3 Q. All right. All right.
4 Yesterday you touched briefly on a -- on a
5 conclusion that was reached on April 20th
6 wherein I believe you testified that various
7 other petrophysicists and other people
8 determined that -- that the determination of
9 the location of the most shallow hydrocarbon
10 sand was different than what was originally
11 determined on April 13th, I believe; is that
12 right?

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14 A. Yes, that...
15 Q. (BY MR. THIBODEAUX) My only
16 question about that is did you -- did you
17 inform the Macondo drilling engineers that
18 a -- a shallower hydrocarbon sand was
19 identified?
20 A. That change was done after
21 the -- the date after the incident. So
22 the -- we did these permeable zones and we
23 gave it to -- I -- I don't know exactly.
24 There were several people asking for the

25 information about the possible permeable
1 zones. Some of them probably were drilling
2 engineers.
3 Q. Do you recall if Mr. Morel asked
4 you for that data?
5 A. Not -- not directly me. He
6 would possibly call Mr. Bobby Bodek, but I
7 don't recall.
8 Q. And who came to you and asked
9 you for that information?

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11 A. I don't recall right --
12 somebody -- exact -- the person come -- came
13 to me and ask -- ask. We were sitting in a
14 room working and all together sitting at a
15 table like that, but also including the upper
16 permeable interval in the well. And I do not
17 recall whom I gave it -- I gave it to.
18 Q. (BY MR. THIBODEAUX) Was it your
19 understanding that that information would be
20 passed along to the Macondo drilling
21 engineers?

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25 A. I don't know.
1 Q. (BY MR. THIBODEAUX) Okay.
2 Please turn to -- to Page 34 of Exhibit 3533.
3 If you look in the first paragraph, it
4 states, "A pressure reading of 14.19 ppg was
5 obtained in the M57C Sand (17,700 feet
6 MD)" --

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10 Q. Okay. Do you see that first
11 paragraph --
12 A. Yes.
13 Q. -- where it states, "A pressure
14 reading of 14.19 ppg was obtained in the M57C
15 sand" --
16 A. Uh-huh.
17 Q. -- "(17,700 feet MD) using
18 logging while drilling (LWD) real-time Geotap

19 tool. During formation evaluation testing,
20 MDT pressure readings in the sand failed to
21 seal. The Geotap test of 14.19 ppg was
22 deemed acceptable and can not be
23 disregarded."

24 Did you write that sentence that
25 states "The Geotap test of 14.19 ppg was
1 deemed acceptable and can not be
2 disregarded"?

3 A. I did it to the reference of the
4 people who did the -- who validate the test.
5 I did not validate it myself.

6 Q. Okay. And what -- what does it
7 mean that it cannot be disregarded?

8 A. I do not know. As I said, I --
9 I put it here as a reference to -- to -- I
10 did not validate the test myself. I guess
11 there is several reservoir engineers who were
12 validating it. There is also Schlumberger.
13 MBT Champions -- not -- not MBT. Geotap
14 Champions tried to validate it. Not tried.
15 Participated in it on their side and -- but I
16 didn't do it myself. So I guess they
17 considered as a valid test -- valid test.

18 Q. Who were the reservoir engineers
19 that you referred to?

20 A. The reservoir engineer in my
21 team was Kelly McAughan, but I think most of
22 the validations done by -- by Schlumberger.

23 Q. So you think the support for
24 that statement comes from the Schlumberger
25 analysis that was done?

1 A. Yes.

2 Q. Okay. When you went on vacation
3 and you came back and you no longer had
4 access to -- to the technical memorandum,
5 were there any --

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7 Q. (BY MR. THIBODEAUX) -- were
8 there any projects with respect to that
9 memorandum that were ongoing that you
10 couldn't complete?

Page 381:12 to 384:10

12 A. I don't -- well, I don't
13 remember. I need to look at my calendar,
14 what my vacation was. I don't remember it
15 now. So if it -- if it was before the 26th
16 or after, that concerns me now. I can verify
17 it for you. It's probably in my calendar.

18 After this last draft, I did not
19 participate in changing anything that was a
20 physical part of the document. Was that your
21 question?

22 Q. (BY MR. THIBODEAUX) Yeah.
23 Well, basically, what I want to know is, are
24 there -- were there any -- in preparing
25 Pages 13 through 36, were there any
1 conclusions that you reached that you wanted
2 to change that you were not able to change
3 because you didn't have access to the
4 memorandum?

5 A. I didn't want to change anything
6 in this memorandum. I kept working, as -- as
7 I mentioned yesterday, because of my own
8 scientific curiosity. But I'm not sure, I
9 don't know if it should have been included in
10 this memorandum. I -- I don't know,
11 honestly.

12 Q. Okay. Okay. So -- but any
13 changes that you wanted to make to the
14 memorandum are included in the supplemental
15 paper that you prepared; is that right?

16 MR. MONICO: Objection; form.

17 A. Can we go to Page 27, please?

18 Q. (BY MR. THIBODEAUX) Sure.
19 Okay.

20 A. If you look at the paragraph,
21 the second from the bottom saying, "The SW
22 evaluation will be re-visited after
23 Electrical properties and Mercury Injection
24 Capillary Pressure measurements are
25 finished."

1 Q. Uh-huh.

2 A. "SW is a subject to some
3 uncertainty currently."

4 So I don't -- I can't say I want
5 to visit and -- because there is -- will be
6 huge changes into SW. But since when I wrote

7 the report, those parameters measured on
8 core, they're not available. And after I
9 came back from vacation, the data was
10 subpoenaed, the core data. So we didn't
11 receive any more reports from OMNI Lab,
12 right. So the -- you understand that all
13 the --

14 Q. Sure.

15 A. -- it was in the -- all the core
16 data was in OMNI Lab. So, theoretically, for
17 the -- having in mind there is -- there is
18 uncertainty because the parameters were for
19 analogs. If someone -- if I have to work on
20 it again, on this memorandum, that's what I
21 would revisit.

22 Q. Okay. And that's the only thing
23 you would revisit?

24 A. This was the first thing I would
25 start doing and then see what other
1 information I get from OMNI, from those
2 measurement they done. It probably would
3 involve more work, but that's -- talking
4 about this memorandum, that's what I would
5 visit as a -- this was uncertain at the
6 moment of fracking.

7 Q. Okay. Would any of that work
8 that you would like to continue doing relate
9 to the identification of any of the sands as
10 being hydrocarbon bearing?

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12 A. I don't know.

13 Q. (BY MR. THIBODEAUX) So it's
14 possible that -- that it could?

15 A. Possible.

16 Q. Okay. All right. Let's move to
17 what was marked yesterday as Exhibit 3529.

Page 385:04 to 385:24

4 Ms. Skripnikova, we went through this a
5 little bit yesterday, and you're identified
6 as a contributor to this Macondo technical
7 note, correct?

8 A. According to this document, yes.

9 Q. Do you recall contributing to
10 this document?

11 A. Yes, I provided the information
12 for this table, yes.

13 Q. Okay. All right. The title of
14 the document is "Shut-In Pressures Range in
15 Likelihood."

16 This document was prepared to
17 assist in evaluating the pressures to shut in
18 the Macondo well that was -- that was
19 currently leaking oil into the Gulf of
20 Mexico, correct?

21 MR. MONICO: Objection; form.

22 A. According to this title of the
23 document, its shut-in pressure range in
24 likelihood.

Page 386:01 to 386:02

1 Let's take a look at -- if you look at the
2 key conclusions, note 1, the second sentence

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7 Q. I'm sorry. I'm on Page 1, Key
8 Conclusions, No. 1. And the second sentence
9 there states, "This range considers the
10 impact of shallower high-pressure gas zones
11 which are found at depths between 17467 to
12 17806 feet MD-RKB."

13 Do you see that?

14 A. Yes.

15 Q. Okay. What is "MD-RKB"?

16 A. Measured depths.

17 Q. What does "RKB" stand for?

18 A. Well, is a -- it recognize the
19 depths of the sands. It is -- they just
20 verifying -- RKB means that it's not -- the
21 KB is not "subtracted," otherwise it would
22 be subsea. Why they put it here, I don't
23 know what they -- MD is usually MD, but
24 probably they use some different --

25 Q. Okay. The first bullet -- I'm
1 sorry, I didn't mean to cut you off. Go
2 ahead.

3 A. So I don't know why they use RKB

4 together with MD, what -- what they mean with
 5 it. I mean, I can -- I can guess, but why
 6 they -- they need to put it there, I don't
 7 know.

8 Q. Okay.

9 A. It's requirement for the
 10 document probably. I don't know why they do.

11 Q. Okay. The first bullet point
 12 underneath that says, "There was consensus
 13 that these gas zones were likely to be
 14 open" --

15 A. Okay.

16 Q. -- "but the contribution and
 17 depletion of these zones was an area of
 18 uncertainty."

19 "These gas zones" refers to the
 20 gas zones found at depths between 17467 to
 21 17806, correct?

22 A. That's what they say here.

23 Q. Okay. Were you part of that
 24 consensus that the gas zones were likely to
 25 be open?

1 MR. LANCASTER: Object to form.

2 A. I provided table with permeable
 3 zones, and those -- with zones there is a
 4 fluid type assigned to every zone. So from
 5 my input, they knew the top and bottom of the
 6 zone and its -- its fluid typing.

7 Q. (BY MR. THIBODEAUX) Did you
 8 make a determination that the zones between
 9 17467 and 17806 were likely to be open?

10 A. No, I did not.

11 Q. Who made that determination?

12 A. I don't know.

13 Q. Out of the contributors that are
 14 listed at the heading, whose respons- --
 15 whose responsibility was it to determine
 16 which gas zones were likely to be open?

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18 A. I don't know.

Page 390:02 to 393:15

2 Q. Okay. Is -- is your testimony

3 that if you -- if you turn to the Bates
4 number that ends in 156. Do you see the
5 numbers at the bottom? If you look at the
6 last -- yeah, I think it's -- yeah -- it's
7 Page 6.

8 A. This?

9 Q. Correct.

10 A. Okay.

11 Q. Is it your testimony that that
12 table "Layer Properties Used For
13 Calculations" was your contribution to the
14 technical note?

15 A. Some of the parameters, yes.

16 Q. Okay.

17 A. It's not every column in there.

18 Q. Okay. Which columns did you
19 contribute?

20 A. Would you have a better version
21 of this?

22 Q. I don't, sorry.

23 A. No?

24 Q. I can blow it up for you on our
25 computer, if you'd like to look at it like
1 that.

2 A. So -- thank you very much. Do
3 you want to see, too?

4 Q. No, if you can just identify
5 your contribution, that would be fine.

6 A. The first -- the first two
7 columns, the top and bottoms, I provided it.
8 The fluid content was done with a team of
9 petrophysicists.

10 Q. Uh-huh.

11 A. This column I did not provide.

12 Q. Which column was that?

13 A. This column next to "Fluid
14 Type," between the "Fluid Type" and maybe --

15 MR. MONICO: Galina, I think your
16 microphone needs to be raised a bit.

17 Q. (BY MR. THIBODEAUX) Are you
18 pointing to the "Expected to Flow" column?

19 A. Yes, this, I did not provide
20 this.

21 Q. Okay. Who provided that -- that
22 column?

23 A. I don't know.

24 Q. Okay.
25 A. "Gross Net" and "Base End," I
1 provided that.
2 Q. Okay.
3 A. Average parameters of gross
4 porosity, net porosity, and pay porosity,
5 average water saturation, average arithmetic
6 and geometric permeability.
7 Q. You provide -- you provided
8 those columns, correct?
9 A. I typed the -- yes.
10 Q. Okay.
11 A. That's it.
12 Q. Okay.
13 A. The temperature and the
14 pressures are not mine.
15 Q. Okay. Who -- who provided the
16 temperatures and pressures?
17 A. I don't know.
18 Q. Okay. And you provided that
19 information for Exhibits 3529, 3530, and
20 3531?
21 A. Is it in -- is it the one in
22 between?
23 Q. Yeah, I believe -- I believe
24 they're all just a few days apart, but
25 they're building on each other.
1 A. So I -- I did not put this
2 document together. So if they -- I was in
3 the -- kind of when there were several
4 meetings of -- of this team sitting and
5 working together, and I was present in the
6 room kind of, like, to -- to up -- to be
7 available immediately if they have any
8 question about petrophysics, about the
9 parameters. So not, like, contributing in
10 the discussion, because I don't understand
11 much about it.
12 And then there was three
13 meetings, three memorandums released. I
14 can't -- so there was a table, like, on a
15 screen always, this table --

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17 A. -- right, and then they put it

18 in the first document. Then they -- I don't
19 know if they copy and pasted to another
20 document, then to another document. I don't
21 know, because it -- I don't think I changed
22 it, these parameters for these three --
23 three -- three different documents.

Page 394:18 to 397:09

18 If you look in our binder to
19 tab 3, I've marked that as Exhibit 3534, and
20 it's Bates No. BP-HZN-BLY00105592 through 96.
21 If you look on the -- on the
22 second page at the bottom, there is an e-mail
23 from Kelly McAughan to you --

24 A. McAughan.

25 Q. -- which states that, Galina,
1 would -- would 8:00 be good time tomorrow to
2 meet with these guys on the investigation?

3 A. Uh-huh.

4 Q. "I won't respond to them until I
5 hear back from you."

6 A. Uh-huh.

7 Q. Did you meet with Allen Pere?

8 A. Allen Pere came to my desk, and
9 we talked because Kelly is -- she's saying
10 she was out. So it was not, like, a formal
11 meeting of us sitting and discussing all
12 these questions together.

13 He came to my desk and asked his
14 questions about the sands, about my
15 evaluation, why I did base on -- why I did
16 that. That's how it was.

17 Q. What did he ask you about the
18 sands?

19 A. I don't remember exactly what --
20 what -- it probably is here what he wanted to
21 discuss.

22 Q. Take a look at that document,
23 see if it refreshes your recollection as to
24 what you discussed.

25 A. So he -- he says in his
1 document, the bold red, and we probably
2 discussed all --

3 Q. Okay. You're -- you're --
4 you're referring to BP-HZN-BLY00105595 where

5 there is a table of various sands and there's
6 three bolded ones; do you see that?
7 A. Yes.
8 Q. Okay. So he wanted to talk to
9 you about the M57B, M56B, and M56C sands?
10 A. Yes.
11 Q. Okay. What -- what did he ask
12 you about the M57B sand?
13 A. He was asking me why -- what --
14 why -- he asked me to show him the data and
15 my explanation why -- it's gas.
16 Q. Okay. And what did you tell
17 him?
18 A. I told him that this interval,
19 "250" interval is very uncertain
20 post-incident. We had a meeting, it was all
21 petrophysicists available. And having data
22 on the big screen, we decided there was --
23 there was just long discussion in the room.
24 Everyone contributed and was saying that
25 there's high uncertainty, but for -- for that
1 un- -- uncertainty highlighting we decided
2 to -- to change the saturation of this sand
3 to gas.
4 Q. Okay.
5 A. I also showed him my
6 interpretation on the rig and what was my
7 reasoning for putting hydrocarbon. So I
8 explained to him, and there was no formal
9 feedback. I was listening --

Page 397:25 to 398:06

25 please. I believe tab 5 was previously
1 marked as Exhibit 3380. We looked at this --
2 I believe you looked at this e-mail
3 yesterday.
4 It's an April 2nd e-mail from
5 Mr. Albertin to you and others regarding the
6 Macondo 9-and-7/8s --

Page 398:09 to 398:10

9 Q. (BY MR. THIBODEAUX) -- the Gulf
10 test.

Page 398:12 to 398:16

12 A. This?
13 Q. (BY MR. THIBODEAUX) Yes.
14 I'm refer- -- I'm referring to the e-mail at
15 the bottom from Mr. Albertin to --
16 A. Yes, I see that e-mail.

Page 399:06 to 399:11

6 Q. Okay. And my question is, at
7 any point after you received this e-mail from
8 Mr. Albertin, did you notify the MMS that BP
9 did not consider the FIT result to be an
10 accurate indication of the formation fracture
11 gradient?

Page 399:13 to 399:14

13 A. I did not because it's not my
14 responsibility.

Page 399:16 to 399:22

16 Whose responsibility --
17 A. I don't know.
18 Q. -- would you consider --
19 A. I don't know.
20 Q. Okay. Please take a look at
21 tab 6 -- I'm sorry, tab 5. Yeah, you're on
22 it.

Page 400:06 to 400:07

6 turn -- you got it right. Yeah, that page
7 with the daily PPFG report.

Page 400:11 to 401:11

11 Do you recognize this daily PPFG
12 report from April 5th?
13 A. I don't recognize this report
14 exactly that is from April 5th. I can turn
15 to it. It was exact one day, May -- May of
16 5th. I see the format of the daily pore
17 pressure reports in team "Gulf."

18 Q. In the normal course of
19 business, would you receive the daily PPFG
20 reports for the Macondo well?
21 A. I don't recall if it was daily
22 or not or --
23 Q. If -- if a -- if a PPFG report
24 was produced, would you receive it?
25 A. I don't know for sure. I
1 suppose I would be cc'd on the e-mail as a
2 part of subsurface team.
3 Q. And what -- and -- and what data
4 would you be looking for or interested in in
5 these reports?
6 A. Any.
7 Q. Excuse me?
8 A. Any data --
9 Q. Any data?
10 A. -- I'm looking for in this
11 report.

Page 401:23 to 402:12

23 Q. Yeah. In the "Additional
24 Observations" section --
25 A. Uh-huh.
1 Q. -- where it says, "Geotap at
2 18079 TVD 12.58" --
3 A. Yes.
4 Q. -- "ppg, which has a
5 corresponding sand fg of 14.4 ppg."
6 A. Yes.
7 Q. Fg is a -- is a reference to
8 fracture variant, correct?
9 A. I suppose so.
10 Q. At any point did you notify the
11 MMS that the Macondo production interval had
12 a fracture gradient of 14.4 ppg?

Page 402:14 to 402:15

14 A. I did not notify MMS about that
15 and about anything else --

Page 402:17 to 402:18

17 A. -- because it was not my

18 responsibility.

Page 408:06 to 409:16

6 Q. Okay. And I don't think anybody
7 asked you what type of degree you have.
8 A. It's an engineering degree in
9 petrophysics.
10 Q. Okay. Is it -- is it a master's
11 degree? Is it a Ph.D.?
12 A. No, I have Ph.D. from -- it's
13 like -- my -- I think it's integral with
14 master. So my Ph.D. is from another
15 category.
16 Q. So you have essentially the
17 equivalent of a master's degree in
18 petrophysics?
19 A. In petrophysics and a Ph.D. in
20 technical science.
21 Q. And a Ph.D. in technical
22 science. Where did you obtain the Ph.D.
23 degree from?
24 A. From Moscow State Academy. It's
25 Moscow State Geology Prospecting Academy.
1 Q. Okay. Is that related to
2 geology?
3 A. Yes.
4 Q. Okay.
5 A. It's geology.
6 Q. So is it fair to say that you
7 have a doctorate degree in geology in the --
8 A. No.
9 Q. What is your doctorate degree
10 in?
11 A. Petro -- technical science.
12 Q. Technical sciences. Was there
13 an emphasis on geology?
14 A. It was an emphasis on
15 development software for geology -- for
16 building geological models.

Page 409:18 to 409:21

18 models. Your degree was focused on the
19 software for building geological models?
20 A. Geological models and

21 petrophysical part of it.

Page 410:03 to 410:20

3 agree or disagree with me. Would you agree
4 with me that when we talk about hydrocarbons
5 we're talking about both oil or gas?
6 A. Yes.
7 Q. So gas is a hydrocarbon,
8 correct?
9 A. In our conversation gas is a
10 hydrocarbon.
11 Q. Okay. I understand from your
12 prior testimony that there was a period of
13 time prior to the incident, and I believe you
14 said it was April 9th to the 15th or
15 somewhere in that range. You can clarify the
16 dates, if you like, where you actually went
17 out to the Deepwater Horizon for the purposes
18 of witnessing wireline logging operations; is
19 that correct?
20 A. Yes.

Page 410:22 to 411:02

22 to ask -- for the room, it's at tab 17. I'm
23 going to hand you a document that's been
24 marked Exhibit 3536 and I'll tell you that
25 that came out of your custodial file and I'd
1 like to know if you prepared this document or
2 if you're familiar with it at all?

Page 411:14 to 412:08

14 A. Yes, I'm familiar with it.
15 Q. Okay. I understand this to be
16 the wireline work order that's dated
17 March 29th 2010, correct?
18 A. Yes.
19 Q. And as I look through it it
20 looks like this is the work order where BP
21 ordered the wireline logging services that
22 were provided by Schlumberger; is that
23 correct?
24 A. Yes.
25 Q. Okay. If you would please turn

1 to -- it doesn't have a page number, so I'm
2 going to give you a Bates number at the
3 bottom and it ends in 713. Now, at the top
4 there in Figure 1 it says decent 1. And I
5 understand that this work order was for
6 60 cents of wireline logging tools, correct?

7 A. This order was for RT scanner
8 and density neutron log tool.

Page 412:10 to 412:18

10 A. Two tools.

11 Q. So at least with respect to
12 decent 1 in the wire logging one of things BP
13 had ordered was RT scanner, density, and
14 neutron?

15 A. Yes.

16 Q. And in the industry that's
17 called a triple combo, right?

18 A. Yes.

Page 412:23 to 415:08

23 expert in, but just to explain, the triple
24 combo has a number of plots, one of them
25 being gamma ray, correct?

1 A. It's not triple combo has plots,
2 triple combo measures gamma rays.

3 Q. Okay. One of the things -- one
4 of the things that triple combo measures is
5 gamma ray, right?

6 A. One of the sensors in the water.

7 Q. Another one it measures is
8 resistivity, correct?

9 A. There's several -- multiple
10 amount of receivers that measures
11 resistivity.

12 Q. And I'm just trying to make sure
13 we're on the same page when I say we're
14 talking about triple combo gamma measurement
15 or the resistivity measurement that we are
16 talking about the same triple combo log, so
17 far are we on the same page?

18 A. Yes.

19 Q. Okay. And the other -- one of
20 the other sensors or one of the other things

21 that the triple combo can measure is
 22 something called the density neutron
 23 crossover, correct?
 24 A. No, no, not crossover.
 25 Q. I'm sorry?
 1 A. It doesn't -- it doesn't measure
 2 crossover.
 3 Q. What does it measure?
 4 A. It measures density of the
 5 formation and neutron porosity formation.
 6 Q. Okay. And where the graphs for
 7 density and neutron actually crossover you've
 8 never referred that -- never heard that
 9 referred to as crossover?
 10 MR. LANCASTER: Object to form.
 11 A. These two plots you mentioned
 12 can be plot together in one --
 13 Q. (BY MR. HILL) Track?
 14 A. In one track in the scale that
 15 they overlay each other.
 16 Q. Right.
 17 A. There is negative crossover and
 18 positive crossover.
 19 Q. Okay. And positive cross --
 20 A. Or no crossover.
 21 Q. Okay. So where they -- where
 22 those two data graphs do crossover there is a
 23 crossover there that helps indicate the
 24 potential for hydrocarbons, correct?
 25 A. One is positive crossover, which
 1 is -- I reference as a to positive crossover,
 2 its low density and low density measurement
 3 and low porosity -- relatively new -- low
 4 neutral porosity measurement. The shade, the
 5 zone between them plotting in special scale
 6 you can identify hydrocarbon --
 7 Q. Okay.
 8 A. -- hydrocarbons.

Page 417:04 to 417:07

4 before we broke, I had handed you a document
 5 that had been marked as Exhibit 3537,
 6 correct, down there at the bottom?
 7 A. Yes.

Page 417:09 to 417:12

9 think you testified this is the diary that
10 you wrote yourself about the logging runs
11 prior to the incident, the wireline logging
12 runs prior to the incident, correct?

Page 417:14 to 417:14

14 A. The document --

Page 417:16 to 417:18

16 A. -- was compiled together by me
17 until -- every time stated in this document
18 and Stuart Lacy --

Page 417:20 to 418:01

20 A. -- the well site geologist,
21 while being on the rig. I'd like to clarify
22 that I arrived on April 10. So I didn't type
23 all that -- everything.
24 Q. Understood.
25 A. Yes, and I left the rig on
1 April 13.

Page 418:03 to 418:08

3 So just to make sure the record
4 is clear, Exhibit 3537 was written by a
5 combined effort by you and did you say Stuart
6 Lacy?
7 A. Stuart Lacy, because the
8 wireline operations are 24/7.

Page 418:10 to 418:22

10 A. So we work, like, shifts.
11 Q. Okay.
12 A. So he and me, he and me. So we
13 compiled the file, it's a word document, and
14 passed to each other.
15 Q. Very good. Okay. And so
16 looking at Exhibit 3537 has refreshed your
17 memory that you arrived on the rig, the

18 Deepwater Horizon, on April 10th, 2010, and
19 you departed on April 13th, 2010; is that
20 correct?

21 MR. LANCASTER: Object to form.

22 A. To my best memory, yes.

Page 418:25 to 419:09

25 I'm just trying to figure out, there was a
1 several-day period where you were on the rig
2 during the April 10th, April 13th time period
3 personally monitoring or personally
4 witnessing the wireline logging operations,
5 correct?

6 A. Yes, there was sometime --

7 Q. Okay.

8 A. -- during that period of time I
9 was on the rig witnessing --

Page 419:11 to 419:11

11 A. -- the wireline operations.

Page 419:24 to 420:01

24 After the wireline logging
25 operations are complete, data has been
1 generated from those operations, correct?

Page 420:09 to 420:24

9 A. I don't know exactly, like, what
10 you call mean with the data. So when
11 wireline data is in -- wireline job in the
12 process. So going in hole, pulling out of
13 the hole, when it's pulling out, there is
14 a --

15 Q. (BY MR. HILL) A data stream?

16 A. Yes, thank you.

17 Q. Okay.

18 A. -- the data stream. So when --
19 when you see you're witnessing -- I'm --
20 while witnessing, I was in Schlumberger unit
21 sitting with the Schlumberger engineer, and
22 there is a -- there is a Schlumberger
23 technician on the wireline wheel, if you want

24 to --

Page 421:01 to 422:18

1 A. -- controlling wireline going in
2 and out and also reporting any pulls or
3 tension on the cable, which part of the tool
4 going down or going in, out -- going in hole
5 and going out of hole. And so it's finished,
6 right?

7 Q. Uh-huh.

8 A. Let's say -- so there is also,
9 like, calibration -- calibrations surround,
10 there is requirements for the engineers
11 familiar when to run the calibration, you
12 just sit and check that everything is done.
13 So when it's finished, so it's
14 finished, and there is a common to -- to
15 start tripping out hole. I didn't have the
16 data on -- in my hands. So I have to go to
17 the office and wait for some time while
18 they're processing, there is some processing
19 of the data. Not processing the digits
20 itself, but putting them -- putting it in
21 depths.

22 Q. Okay.

23 A. All this, that's what
24 Schlumberger is supposed to do. And then the
25 first data you get -- I -- you get from them
1 is basically a printout.

2 Q. Okay.

3 A. I'm talking about one wireline
4 run, right? So in some time they put their
5 preliminary file on interact. Well, on
6 the --

7 Q. They put it in WellLink?

8 A. On the WellLink or so -- you --
9 you usually don't use it same -- don't use
10 sending via e-mail unless it's very
11 sensitive. So we have the WellLink for that
12 because it's there for us and for partners.
13 So then in some -- in -- in some
14 time, they produce digits to LS file and also
15 printout. The printout is supposed to be the
16 same that I've got.

17 Q. All right.

18 A. LS file is compiled later.

Page 422:22 to 424:14

22 After -- during the wireline
23 operations, each -- the sensors on each -- on
24 the tool for each run collect data in
25 realtime, correct, and that data is gathered
1 on a computer, right?

2 A. Run wireline log, yes, the
3 receivers of every tool while passing every
4 point of that, collecting the data and save
5 it somehow on server.

6 Q. Okay.

7 A. On server and machine of
8 Schlumberger engineer. I don't know where.

9 Q. At some point at the end of
10 every run, data is gathered on a -- on a
11 computer somewhere, and Schlumberger then
12 takes it and processes it before presenting
13 it to BP, correct?

14 A. The processing -- it's not the
15 final processing that there was -- I was
16 going to as a result -- kind of raw data and
17 the printout, which you have on the rig, and
18 then same time, I don't know, sometime can --
19 it should be within 24 hours. Those
20 procedures actually should be stated directly
21 in the contract we have with Schlumberger,
22 and then they have a final LS file.

23 Q. Okay. So when you say that a --
24 this data is processed and a printout is
25 created, is that printout the actual log for
1 the run or for whatever wireline tool you ask
2 to be used?

3 A. It's -- it's a printout of
4 the -- of the run. So this is the first data
5 you get with a printout of the current run
6 which has just finished.

7 Q. And is that printout a piece of
8 paper like this or is it one of those long
9 accordion type log?

10 A. Yes, it's accordion.

11 Q. Okay.

12 A. It's a folded log.

13 Q. Okay.

14 A. Folded paper.

Page 424:24 to 425:20

24 Now, you -- you obtain those
25 within, did you say reasonably -- I know you
1 don't know exactly, but about 24 hours
2 after -- after the -- the data is processed?
3 A. No. My -- sooner.
4 Q. Sooner?
5 A. So on the rig, the plot is quite
6 soon.
7 Q. Okay.
8 A. I can't tell you exactly the
9 time, but it's quite soon.
10 Q. Okay. And then do I understand
11 correctly, then, when you're done actually
12 being out there physically on the rig, you'll
13 come back to shore, and you will have
14 available to you the actual logging printouts
15 that Schlumberger has processed?
16 A. I have -- first, I have the
17 printout on the rig, and then when I come
18 back, it will be probably final version of
19 the LS file, the digits and final version of
20 the plot.

Page 425:22 to 426:16

22 A. And then at the end of the
23 operations, they supposed to be put on a CD
24 as a part of the delivery from then.
25 Q. Okay. Now, did you have all of
1 the wireline -- did you have all of the
2 printouts, the logs for the wireline logging
3 conducted between April 9th and April 15th
4 prior to the incident? And by "incident," I
5 mean April 20th, 2010.
6 A. When I was on the rig --
7 Q. Uh-huh.
8 A. -- I was getting those printouts
9 from Schlumberger after every logging run.
10 Q. Okay.
11 A. -- print -- printouts. So there
12 was several of them and I was looking at
13 them.

14 Q. Okay. Did Schlumberger provide
15 you with all of the logging data, the
16 wireline logging data prior to the incident?

Page 426:18 to 426:23

18 A. I don't remember if it was all.
19 Q. (BY MR. HILL) Okay. Do you
20 remember that they had provided you with the
21 triple combo log at least, right?
22 A. I had, yes, we had triple combo
23 log.

Page 427:11 to 428:15

11 Q. No. I'm talking about your
12 diary has eight runs in it, correct? It
13 documents eight different runs?
14 A. Yes.
15 Q. All right. Presumably that
16 first run, it's identified there in your
17 diary as a triple combo run, that produces a
18 triple combo log, correct?
19 A. Yes. It -- it produces plot of
20 the data recorded while wireline.
21 Q. Thank you. Go to -- to set
22 No. 2 on the second page right there at
23 6:45 a.m. Do you see that?
24 A. Yes.
25 Q. And it's got a descent No. 2,
1 CMR-ECS-ENGs-LEHQT. Do you see that?
2 A. Yes.
3 Q. Do you know some of the -- I
4 assume that this run generated some
5 logging -- some logs as well, correct?
6 A. Some plots. Let's call it
7 "plots."
8 Q. Okay. We'll call it plots.
9 A. They generated a plot -- yes,
10 I -- on the rig, I saw the plot of this, of
11 triple combo, I saw plot of CMR, and I looked
12 at the plot of OBMI in calipers.
13 Q. Okay. Have you ever heard of a
14 laminated sands log?
15 A. Laminated sands log?

Page 428:17 to 428:22

17 A. No, there is laminated sand
18 analysis.
19 Q. Okay. Have you heard of a
20 laminated sands analysis log?
21 A. There is no log of laminated
22 sand.

Page 428:24 to 428:25

24 A. There is -- there is analysis.
25 Laminated --

Page 429:05 to 429:12

5 A. At -- that laminated sand
6 analysis cannot be done on the rig.
7 Q. Okay.
8 A. It's done later in the office.
9 Q. Understood. Prior to
10 April 20th, had you seen a laminated sands
11 analysis, a process laminated sands analysis?
12 A. I don't remember.

Page 430:04 to 431:15

4 and I asked -- I've put in front of you
5 before we started Exhibit 3533. Do you have
6 that?
7 A. 3533? No, I don't. I have
8 3532.
9 Q. Okay, 3532. Let's look at that
10 one. And if you would turn to Page 36,
11 please.
12 A. Yes.
13 Q. There is a chart there at the
14 bottom called "Net Pay Summary," correct?
15 A. Yes.
16 Q. Now, do I understand correctly,
17 one of your jobs as the petrophysicist
18 assigned to Macondo was to basically locate
19 the sands in the production interval?
20 A. In -- in the all -- in the all
21 interval.
22 Q. In the --

23 A. Production interval, in the --
24 in the open hole interval.
25 Q. Okay. And so that we're clear,
1 the open hole is below the 9-and-5/8 shoe,
2 correct?
3 A. Yes.
4 Q. Okay. So your responsibility
5 was to help identify where the sands were
6 from the point of the 9-and-5/8 shoe --
7 A. Yes.
8 Q. -- all the way down to the
9 bottom hole, correct?
10 A. Yes.
11 Q. Okay. And do I -- the chart
12 that's represented there on Page 36 that says
13 "Net Pay Summary," sitting here today, is
14 that an accurate representation of what you
15 believe to be the sands in the open hole?

Page 431:17 to 433:07

17 A. Do you want me to go sand by
18 sand?
19 Q. (BY MR. HILL) No. I just want
20 generally, do you believe that to be an
21 accurate representation -- well, let -- I
22 understand that other people provided input
23 to this chart. So let's be clear. The first
24 column has measured depths, top and bottom,
25 correct?
1 A. Yes.
2 Q. Okay. And the left-hand is the
3 top, the bottom -- or the -- in the bottom --
4 or the right-hand column is the bottom. Are
5 those measured depths of top and bottom
6 accurate?
7 A. As accurate as I could take it
8 from Schlumberger logs depth -- depths.
9 Q. That was my next question. And
10 the accuracy, basically in order to generate
11 these depths, you relied on the wireline
12 logging that was performed by Schlumberger,
13 correct?
14 A. Yes.
15 Q. Okay. The next column, I think
16 we talked about this, Total Vertical SS

17 Depths. The next column --
 18 A. True vertical.
 19 Q. True vertical, thank you.
 20 The third column, there is fluid
 21 content and sand names, correct?
 22 A. Yes.
 23 Q. And that fluid content, one of
 24 your jobs is it's not only identifying where
 25 the sands are, but identifying the nature of
 1 the formation fluids in those sands, correct?
 2 A. Yes.
 3 Q. And sitting here today, this is
 4 your best understanding of what the formation
 5 fluids are in the sands in the open hole at
 6 Macondo, right?
 7 A. About most of the sands.

Page 433:09 to 434:23

9 A. About most of the sands, not all
 10 of them.
 11 Q. Which ones aren't accurate?
 12 A. So it's accurate to extend this
 13 upper probable gas sand is -- it's a very
 14 uncertain evaluation of it.
 15 Q. Okay.
 16 A. So as many petrophysicists can
 17 look at that and have his -- its own opinion
 18 because on- -- it's only for the sand.
 19 Q. Okay.
 20 A. I would call -- we call it
 21 probable. So evolution, if it's fluid type
 22 of this sand, kind of within those several
 23 memorandums was from -- is from gas, which
 24 was initial -- which was identified the day
 25 after incident with the groups -- group of
 1 petrophysicists. It's a very uncertain
 2 evaluation highlighted to make sure that
 3 there is civility, we called it gas.
 4 Q. Okay. We'll talk about that. I
 5 guess what I really want to know is right
 6 now, it is BP's considered judgment after
 7 relying on the experience, opinions of its
 8 own engineers, that the sand named M57B is a
 9 gas-bearing sand, correct?
 10 MR. LANCASTER: Objection; form.

11 MR. MONICO: Objection; form.
12 A. I can't talk for BP. I can talk
13 about myself.
14 Q. (BY MR. HILL) Is it your
15 understanding that the M56B is a gas-bearing
16 sand?
17 MR. LANCASTER: Object to form.
18 A. It's probable gas.
19 Q. (BY MR. HILL) Probable gas.
20 A. Likely -- it's probable gas.
21 Q. So when you say "probable gas,"
22 it is a formation that we need to assume is
23 hydrocarbon-bearing?

Page 434:25 to 436:10

25 A. There is a high uncertainty in
1 evaluation of this sand. Looking -- if I
2 recall back when I didn't call it sand, back
3 to the rig, I would still want to call it
4 because I think -- I think it was wet.
5 Q. (BY MR. HILL) Okay. Well, let
6 me --
7 A. And then looking at the
8 analysis, why it changed, because later so
9 when we highlighted it as a -- as a gas sand,
10 as a group, right. So that input went to
11 all -- to all other groups of people working
12 on the -- why -- why it happened, what caused
13 it.
14 But then after we received the
15 analysis of -- of all the sands within the
16 last open hole section done by Schlumberger
17 and ELAN it kind of confirms my understanding
18 what I was thinking on -- on the rig.
19 Q. And what was your under- --
20 A. And why I called it -- I didn't
21 call it hydrocarbon bearing.
22 Q. What -- what did it -- what did
23 it confirm, to your understanding?
24 A. It confirmed that that
25 resistivity elevated -- relatively elevated
1 resistivity is due to oil -- oil-based mud
2 invading the formation.
3 Q. Okay.
4 A. So that independent

5 interpretation was like mine.
6 Q. All right. So are you saying
7 you disagree with this chart?
8 A. I do not disagree this chart.
9 I -- it's -- it's a probable gas. It's
10 probable gas.

Page 437:05 to 437:18

5 I want to make sure that I'm
6 clear, though. Based on the triple combo log
7 that was generated that you saw out on the
8 rig, it is pretty clear that there is a sand
9 at 17,467 feet, but the only question is
10 whether or not it was hydrocarbon bearing; is
11 that accurate?
12 A. There is -- I -- at -- at the
13 rig and my still understanding is a
14 low-porosity sand.
15 Q. Okay. But it's a sand, right?
16 A. It's a low-porosity sand.
17 Q. Low-porosity sand. A sand,
18 though, nonetheless?

Page 437:20 to 437:24

20 A. Same deformation. It's -- well,
21 there is a -- when I'm talking about sand,
22 the only information about sand I can --
23 about the lithology is from descriptions from
24 the mud log.

Page 438:01 to 439:07

1 A. And from cuttings, and they
2 do -- do describe sand within the section.
3 Q. Okay. So on April 13th when we
4 looked at the e-mail where you were asked on
5 April 13th to identify where the shallowest
6 hydrocarbon-bearing sand was in the open
7 hole --
8 A. Yes.
9 Q. -- you identified it as -- and
10 based on this chart, I think you identified
11 it as the M56A sand, correct?
12 A. Yes.

13 Q. All right. And at that time,
14 you were aware that there was a, did you say
15 low-porosity sand at 17,467 feet?
16 A. Yes, I saw at that sand.
17 Q. Okay. But you had --
18 A. I looked at that sand.
19 Q. Okay. So you knew there was a
20 sand there; you didn't know, however, whether
21 or not it was hydrocarbon bearing?
22 A. My interpretation was it's wet
23 sand. There was wet sand.
24 Q. Okay. So you did not know if it
25 was hydrocarbon bearing at that time?
1 MR. LANCASTER: Object to form.
2 A. To the tech- -- to the -- at the
3 data I had at the rig, looking at the
4 printout, I considered and report -- did not
5 report that sand at 14,467 as a
6 hydrocarbon-bearing sand because I thought it
7 was -- it -- it was a wet -- wet sand.

Page 440:08 to 440:17

8 Q. (BY MR. HILL) Let me ask you
9 this. Do I understand from yesterday -- from
10 your testimony yesterday that after you told
11 or responded to the April 13th e-mail from
12 Mr. Bodek in which you identified the
13 shallowest hydrocarbon-bearing sand as being
14 the M56A sand, that you at least had enough
15 question in your mind to conduct further
16 analysis on whether M57B was hydrocarbon
17 bearing?

Page 440:19 to 442:01

19 A. I did not.
20 Q. (BY MR. HILL) You did not what?
21 A. I did not have doubts about that
22 sand.
23 Q. Okay. Was any further analysis
24 conducted from -- between April 13th and
25 April 21st on whether or not M56B was
1 hydrocarbon bearing?
2 A. No.
3 Q. So yesterday when you said that

4 there was a determination that it was and
5 that determination was made by the date of
6 the incident, what were you referring to?
7 A. I was referring to the data
8 after the incident. I probably kind of
9 didn't made it clear. So the first -- when I
10 came back from -- from the rig and started
11 working with the -- with the logs, I didn't
12 work with that sand. My focus was on the --
13 on the evaluating of production sands.
14 And so after the incident
15 happened, next day we had this meeting with
16 other petrophysicists in the room looking at
17 the big screen, and that's where it was
18 highlighted. So...
19 Q. In that meeting after the
20 incident, what data was available to that
21 room that wasn't available to you
22 pre-incident?
23 A. The data -- first -- there were
24 several factors. First of all --
25 Q. Please answer my question. I
1 asked you what data was available.

Page 442:07 to 448:17

7 A. There were much more detail
8 available right at that time. For the
9 analysis with other petrophysicists, we used
10 process only data, we looked at CMR data all
11 together, and triple combo -- final version
12 of triple combo. And I'm not saying that all
13 of that were contributed into our
14 considerations and our discussion, like --
15 like, for instance, CMR data did not
16 contribute much into -- into helping. Or,
17 for instance, sonic data, we looked at that.
18 But, unfortunately, it was below the
19 resolution of the sonic tool to get much
20 more information about that.
21 But since it was on the big
22 screen, we zoomed in into depths and into
23 scale, which we did see that neutron density,
24 there was 2-foot sand and they actually do
25 form one data point crossover.
1 Q. (BY MR. HILL) Okay.

2 A. So there were more people in the
3 room looking at that, so -- I didn't see the
4 crossover on the rig because it doesn't look
5 like that.

6 Q. Okay.

7 A. It looks like touch.

8 Q. Okay. So -- I'm sorry, are you
9 done?

10 A. So those factors. So we did
11 look at the mud data, that's for sure, but it
12 did not contribute into the analysis.

13 Q. Okay. So to be clear, the data
14 that you looked at post-incident was
15 basically the same data that was provided by
16 Schlumberger on the wireline loggings
17 pre-incident; you just looked at it a little
18 closer, right?

19 A. No. There was --

20 Q. What changed?

21 A. There was -- there was CMR data
22 available at that point and plotted together,
23 is triple combo, was sonic data available at
24 that point, put together. There was triple
25 combo. There was the OBMI data available put
1 together. So there was a big --

2 Q. Okay.

3 A. -- plot-out on the big screen
4 looking into the detail in every sand.

5 Q. Okay.

6 A. That's how it was. So I'm not
7 saying everything is contributed to it. So
8 my biggest expectation would be sonic, but it
9 was below the resolution. So -- and it was
10 the opinion in the room, it was very
11 difficult to identify the saturation of this
12 sand to highlight uncertainty respecting the
13 crossover be- -- with the sand.

14 Q. Now, so that the record's clear
15 and so that the Court understands, when I
16 asked you earlier about the triple combo log,
17 one of the things I asked you about was the
18 density neutron crossover, right? That's the
19 crossover you're talking about right now?

20 A. I am talking about the crossover
21 on the density neutron log, yes.

22 Q. And you're -- and I think I

23 understand your testimony to be that
24 post-incident, when you guys looked a little
25 bit close -- when you and your group or
1 whoever was in that room evaluating looked
2 closer at the triple combo log, you could
3 tell that there was a small crossover
4 indicating the potential presence of
5 hydrocarbon at 17467, correct?

6 MR. MONICO: Objection; form.

7 A. You could see that crossover on
8 that screen only with a big magnification.
9 And there was one point -- but, yes, there
10 was density going to the left, showing a low
11 density. And there was very minor. That's
12 why I didn't see it on the rig, because it's,
13 like, touching. It's one point. But to
14 highlight this uncertainty, we put it as a
15 gas --

16 Q. (BY MR. HILL) Okay.

17 A. -- at that point.

18 Q. So I want to make sure I'm
19 clear. When you looked at the log, the
20 triple combo log pre-incident to determine
21 what the shallowest hydrocarbon-bearing sand
22 was, one of the things you looked at was
23 whether or not there was crossover on the --
24 the density neutron track, right?

25 A. Yes.

1 Q. Okay.

2 A. One of them was that.

3 Q. Okay. And you're telling me
4 that post-incident you determined there was a
5 small crossover, right, but that you couldn't
6 see that based on whatever conditions you had
7 at the rig when you looked at that log?

8 A. When I looked at the printout of
9 that log --

10 Q. Okay.

11 A. -- the difference is printout,
12 which is printed out on a paper and lying
13 down in front of you on a table, you cannot
14 zoom in. You cannot zoom -- do anything.
15 You can only look at every sand -- every
16 possible sand and see -- compare them
17 together to each other and understand what
18 the -- what the fluid -- what the fluid type

19 is.
20 Q. Understood.
21 A. When -- if -- when it's -- when
22 you're onshore at -- in the office, you can,
23 first of all, zoom it in as much as you can
24 and look at it.
25 Q. Okay.
1 A. That's how we did it, that data
2 after the incident.
3 Q. On April 13th when you received
4 the e-mail from Mr. Bodek asking you to
5 identify the shallowest hydrocarbon zone,
6 were you on the rig or were you somewhere
7 where you didn't have access to the printed
8 log?
9 A. I was on the rig. And the
10 printout, I have that printout.
11 Q. And by "that printout," are you
12 talking about the long strip printout --
13 A. Yes.
14 Q. -- of the plots?
15 A. Yes, triple combo printout, I
16 had.
17 Q. Okay. All right. And you used
18 that same triple combo printout and looked
19 post-incident and identified a small
20 crossover?
21 A. No.
22 Q. What did you use different?
23 A. It was a data loaded into our
24 software. We have the software to process.
25 Q. Uh-huh.
1 A. We don't use -- we don't do it
2 on the paper. It's all -- it says digitally.
3 So when you get -- so when we're talking
4 about what you get from Schlumberger, it's
5 the LS file and it's plot. On the rig, I had
6 the plot to look at.
7 When I was in office already I
8 had the LS file, and I loaded them in this
9 software and plot them on the -- so it's
10 not -- it's the same data as it's plotted on
11 the -- on the -- on the printout, but it's
12 from --
13 Q. Okay.
14 A. -- from new software, where you

15 can stretch the logs, where you can look
16 closer into the formation and analyze all
17 different information together.

Page 449:01 to 449:07

1 I'm going to hand you a document that is in
2 tab 35 of our binder, and I've marked it as
3 Exhibit 3538. And for the record, there's a
4 previous exhibit marked as 3512 which is a
5 similar e-mail chain, but not as
6 comprehensive. So I'm going to mark it
7 separately.

Page 449:10 to 449:13

10 Q. That's the first one I'm going
11 to talk to you about. And I'm also going to
12 hand you an e-mail that has been -- that is
13 in tab 36 that I have marked as Exhibit 3539.

Page 449:21 to 450:02

21 Q. (BY MR. HILL) All right. Now,
22 I think at least everything but the top,
23 you've actually read into the record before
24 or commented on. But on April 13th at the
25 bottom of Exhibit 3538, Mr. Bodek -- do you
1 consider Mr. Bodek your boss?
2 A. No.

Page 450:16 to 452:19

16 Q. All right. On April 13th,
17 Mr. Bodek sent you an e-mail. And he sends
18 it to you, but he copies a number of people:
19 Brian Ritchie, Charles Bondurant, Brian
20 Morel, Gregg Walz, Brett Cocalles, John Guide,
21 Mark Hafle. And the subject is "Top
22 Hydrocarbon Bearing Zone," right?
23 A. Yes.
24 Q. Do you know who Brian Morel is?
25 A. He was the drilling engineer in
1 the team.
2 Q. Do you recognize his name as
3 well as the other names to the right there as

4 being members of the Macondo drilling team,
5 drilling engineering team?

6 A. Yes.

7 Q. Okay. And Mr. Bodek asked you,
8 "Galina, The drilling team, in their cement
9 procedure preparations, needs to know the
10 depth of the shallowest hydrocarbon-bearing
11 interval in the open hole."

12 And basically he then asked you
13 to reply to all, to everybody on there, and
14 provide that shallowest hydrocarbon-bearing
15 sand, right?

16 A. Yes.

17 Q. So when you responded, you
18 understood that whatever shallowest
19 hydrocarbon-bearing sand that you were going
20 to be responding with was being communicated
21 to the drilling team, correct?

22 A. Yes.

23 Q. And you understood that the
24 purpose -- that they specifically needed it
25 for the purposes of developing their cement
1 procedure, correct?

2 A. I don't know.

3 Q. Well, let me ask you, when it
4 says, "The drilling team, in their cement
5 procedure preparations, needs to know the
6 depth of the shallowest hydrocarbon-bearing
7 interval in the open hole," what did you
8 understand that to mean?

9 A. Maybe there were other
10 procedures they need to do that I wasn't
11 familiar with that's not -- that wasn't
12 mentioned in that e-mail.

13 Q. All right. Let's look at --
14 let's look at Exhibit 3539, which is a
15 separate chain e-mail that came off of this
16 initial e-mail on the same date, April 13th.
17 And you were copied on every e-mail response
18 in this e-mail chain, weren't you, on
19 Exhibit 3539?

Page 453:04 to 453:21

4 A. Yes, I was copied on those
5 e-mails.

6 Q. (BY MR. HILL) All right. So
7 after the original e-mail where Mr. Bodek
8 asked you to identify the shallowest
9 hydrocarbon-bearing zone so the drilling team
10 could use it in their cement procedure there
11 is a discussion that takes place about what
12 is the shallowest hydrocarbon-bearing sand,
13 fair?

14 A. They discussed it, yes.

15 Q. Okay. You were copied on this,
16 right? Did you read it?

17 A. I did.

18 Q. All right. The top one says --
19 Mr. Bodek is clarifying that "Any sand deemed
20 to be hydrocarbon-bearing that we'd have to
21 isolate behind cement per MMS regs."

Page 454:01 to 455:01

1 At this time, did you have an
2 understanding that MMS regulations required a
3 certain amount of cement to be planned above
4 the shallowest hydrocarbon-bearing sand?

5 A. I don't remember if I did at
6 exactly that time -- I knew that exactly that
7 time or -- yes, I -- I didn't know that there
8 is -- an amount of cement should be put above
9 the highest -- shallowest hydrocarbon-bearing
10 zones.

11 Q. Do you know, sitting here today,
12 what that amount of cement is?

13 A. Yes.

14 Q. What is it, for production
15 casing?

16 A. It's my understanding is -- I
17 did not read the MMS regulations myself.

18 Q. Fair enough.

19 A. From -- from peers, from -- from
20 conversation, it's 500 feet.

21 Q. Okay. So sitting here today,
22 you have an appreciation for the importance
23 of identifying accurately the shallowest
24 hydrocarbon-bearing sand in order to be able
25 to comply with the MMS regulation, right?

1 A. It's important.

Page 455:10 to 455:21

10 Q. (BY MR. HILL) Yesterday you
11 said that -- you responded to the e-mail and
12 identified the M56A sand as the shallowest
13 hydrocarbon-bearing sand, right, at 17803?

14 A. Yes.

15 Q. Okay. And then yesterday, I
16 thought I heard you say that after reporting
17 that, there was a period of days and possibly
18 a weekend. And when you came back on the
19 weekend, you looked a little bit closer at
20 whether or not there was other -- there was
21 an additional shallower sand?

Page 455:23 to 456:01

23 A. No, I did not.

24 Q. (BY MR. HILL) Okay. So if
25 that's what the record says yesterday, you're
1 now disagreeing with that?

Page 456:03 to 456:12

3 A. I do not remember saying that
4 yesterday.

5 Q. (BY MR. HILL) Okay.

6 A. Over the weekend, I
7 was looking -- my focus was looking at the
8 sands, yes.

9 Q. Okay.

10 A. This was -- the focus wasn't on
11 the main paying sands because I needed to do
12 the evaluation --

Page 456:15 to 456:23

15 Q. On Exhibit 3538, on the second
16 e-mail from the top, Mr. Bodek basically
17 responds in you -- to you and says, with
18 respect to the 17803 being the shallowest
19 hydrocarbon-bearing sand, quote, "I can buy
20 that. That's the shallowest sand that we see
21 legitimate DEN/NEU cross-over on the triple
22 combo log," right?

23 A. Yes, that's what he says.

Page 457:01 to 457:11

1 Q. Okay. And you understand that
2 the reference to the DEN/NEU crossover on the
3 triple combo log to be the crossover that we
4 just discussed a few minutes ago?
5 A. That sand at 17803 or 2 has a
6 decent crossover which can help you
7 definitely identify that zone as a
8 potentially gas -- oil-bearing zone.
9 Q. Okay. Or potentially
10 hydrocarbon-bearing, right?
11 A. Hydrocarbon-bearing zone.

Page 458:02 to 459:07

2 Q. Okay. And then you respond,
3 "And high resistivity, don't see much on gas,
4 though. Bobby, can you look back at
5 geological report? Anything in it? Maybe
6 too thin though."
7 A. Yeah.
8 Q. Did anybody ever respond?
9 A. Nobody responded, but I looked
10 at that myself.
11 Q. Okay. Please go to
12 Exhibit 3539.
13 Now, in response to the question
14 in the original e-mail where Mr. Bodek is
15 asking you to identify the shallowest
16 hydrocarbon-bearing sand, Mr. Charles
17 Bondurant on the same day responds and says,
18 "The sand that we would complete or just
19 hydrocarbon bearing sands," asking how do we
20 determine essentially what the shallowest
21 hydrocarbon-bearing sand is, right?
22 A. I don't know what Mr. Bondurant
23 means with this -- his -- with his e-mail.
24 He doesn't reference to depths. What -- what
25 hydrocarbon-bearing zone -- sands? There are
1 several sand logs. I don't know what -- the
2 one he's talking about.
3 Q. But they're asking you to
4 identify the shallowest hydrocarbon-bearing
5 sand. So if he has a question about it, do
6 you inform yourself about the nature of his

7 question?

Page 459:09 to 459:13

9 A. Well, I did -- I didn't -- I do
10 not reply to this e-mail. This is between
11 them. Bobby Bodek is asking me. Then Chuck
12 Bondurant, the sands we would complete. I
13 don't know how it's related to the question.

Page 459:15 to 459:24

15 A. To the team about the cementing
16 and the complete only hydrocarbon-bearing
17 sand, I don't know what they're talking
18 about. I don't see the connection between
19 these two e-mails. Probably they understand
20 each other. I don't.
21 Q. Okay. So you didn't understand
22 what Mr. Bondurant was asking you, or was
23 asking to whoever was --
24 A. He's not asking me.

Page 460:16 to 460:24

16 Q. So Mr. Bodek responds to
17 Mr. Bondurant, he says, "Any sand deemed to
18 be hydrocarbon-bearing that we'd have to
19 isolate behind cement per MMS regs," right?
20 A. Yes.
21 Q. So he's basically telling you
22 that -- the importance of the -- of the
23 identification of the shallowest
24 hydrocarbon-bearing sand, isn't he?

Page 461:01 to 461:03

1 A. He's not telling -- he's not
2 telling me. He's telling Chuck Bondurant. I
3 am cc --

Page 461:07 to 461:22

7 A. I am cc on this e-mail.
8 Q. And you didn't -- did you read
9 it?

10 A. Yes, I did.
11 Q. Did you feel like anything that
12 was being discussed was relevant to the
13 initial request to you, which was to identify
14 the shallowest hydrocarbon-bearing sand?
15 A. I didn't -- I did identify the
16 zone at 17803.
17 Q. Okay. And so you understood
18 that it was important because it was
19 identifying per -- you know, what -- you had
20 to identify it for purposes of -- of
21 isolating it with cement pursuant to MMS
22 regulations, right?

Page 461:24 to 462:02

24 A. I understood it was important.
25 Q. (BY MR. HILL) Just important?
1 Did you understand that MMS regulations
2 pertained to it?

Page 462:04 to 462:04

4 A. It is important.

Page 463:01 to 463:06

1 Q. Well, let me ask you this, if
2 you identify a sand that you then determine
3 is filled with brine or some type of
4 non-hydrocarbon fluid formation, is it
5 possible that there is mixtures of
6 hydrocarbons in the water?

Page 463:08 to 463:23

8 A. There is a -- the well was open
9 to the invasion of oil -- oil-based mud for
10 several days before it happened. Between
11 the -- the -- it was six days from the time
12 the bit went through the -- through the sand
13 to the time when they were -- wireline
14 logging was done. All the time, it was
15 exposed to oil-based mud in it.
16 Q. (BY MR. HILL) Okay.
17 A. So there is an invasion -- if

18 there is a -- a potential -- it is a
19 permeable formation, the oil-based mud will
20 invade.
21 Q. Okay.
22 A. So it will replace the water
23 or -- to some extent in that sand.

Page 464:05 to 464:06

5 Is it possible that a brine has
6 some part of hydrocarbon in it?

Page 464:09 to 464:19

9 A. Do you mean the brine of this
10 sand exact?
11 Q. (BY MR. HILL) No, I'm just
12 saying -- asking generally. Brine, is it
13 always a hundred percent saltwater, or can it
14 have hydrocarbon mixed in it?
15 A. Brine is usually brine. There
16 is -- there can be -- the sands can be
17 partially saturated with --
18 Q. Thank you.
19 A. Yes.

Page 466:08 to 466:25

8 Q. (BY MR. HILL) Okay.
9 Ms. Skripnikova, I have what I have marked as
10 Exhibit 3540, which is a Schlumberger -- I
11 call it a log. What do you call it?
12 A. Printout.
13 Q. A printout, okay. If I say log,
14 does that confuse you? Because I don't know
15 if I can change that.
16 A. It does.
17 Q. It does. So I should say
18 printout?
19 A. Only printout, if you could.
20 Q. Okay. So I have Exhibit 3540,
21 which I've marked and I've given you a copy
22 which I believe you have there in front of
23 you. Do you understand this to be the triple
24 combo printout from the Schlumberger log?
25 A. It's a final printout.

Page 467:15 to 486:13

15 Q. All right. Now, it's got some
16 header information on here that I have
17 highlighted. One of it says that the logging
18 date is April 10th, 2010. Is that consistent
19 with your observations on the rig --

20 A. Yes.

21 Q. -- as to when this was run? I'm
22 sorry?

23 A. Yes.

24 Q. Okay. And, in fact, at the
25 bottom there highlighted it says witnessed by
1 Galina Skripnikova and Stuart Lacy, correct?

2 A. Yes.

3 Q. Okay. On, I guess that would
4 be, like, the third page. These don't have
5 page numbers. But at the bottom of the
6 header there is a depth summary listing and
7 below that it says date created, 13th April
8 2010 at 13:29:51, correct?

9 A. The final printout, yes.

10 Q. So the final printout was
11 created on April 13, 2010, correct?

12 A. It says in this document.

13 Q. Okay. Now, I want to -- just
14 because part of this process is not asking
15 you questions, but to make sure the Court or
16 whoever is reviewing the tape understand, I
17 want to see if we can walk through kind of
18 generally what this log is going to show.
19 And to do that I'm going to turn to. The way
20 this printout is set up is it has three
21 tracks, correct, one, two, and three?

22 A. Yes, with a depth -- depth
23 track.

24 Q. I'm sorry, I didn't understand.

25 A. With a depth track on the first
1 track.

2 Q. And that's this right here, the
3 depth track, right?

4 A. Yes.

5 Q. Okay. So this will be track
6 one, then there is a long algorithmic track
7 here, then track three, right?

8 A. Yes.
9 Q. All right. On track one, this
10 is where you would see in blue the gamma ray
11 readings, correct?
12 A. Yes.
13 Q. The gamma ray plot. And on --
14 and there would be the depth right here,
15 correct?
16 A. Yes.
17 Q. Just to the right. And so that
18 we're clear, gamma ray basically creates this
19 plot, this blue line plot, and you can
20 determine a shale baseline from the general
21 trend of that plot, correct?
22 A. Gamma ray does not create the
23 plot. The gamma ray log is plot in this
24 track.
25 Q. It measures gamma resistivity;
1 is that correct?
2 A. Gamma ray measures initial
3 resistivity of rocks.
4 Q. Okay. I'm trying to simplify
5 this for -- I'm honestly not an expert in
6 this. So what I'd like to do is understand
7 there is a general shale baseline plot that
8 can be trended in track 1, right, where we're
9 looking for excursions to the left or to the
10 right; is that fair?
11 A. Generally, yes.
12 Q. Okay. And if we have an
13 excursion that goes to the left, it indicates
14 sand because there's lower -- sand has lower
15 resistivity, correct?
16 A. No, because it has a low nature
17 of gamma ray radioactivity.
18 Q. Okay. So any excursion to the
19 left potentially identifies sand, however,
20 right?
21 A. It potentially -- to the left --
22 I would like to point to the left means zero.
23 Q. Yeah.
24 A. Scale -- scale is from zero to
25 150. Towards zero it's same deformation with
1 lower -- the lower natural rejectivity. To
2 the right is shale -- shale information
3 with --

4 Q. Excellent, thank you.
5 A. -- high --
6 Q. Perfect.
7 A. -- rejectivity.
8 Q. So I understand as the -- as the
9 plot trends or has an excursions towards zero
10 it's more indicative of sand and as the
11 excursions goes toward 150 on the scale it's
12 more indicative of shale or clay?
13 A. Yes. Gamma ray is the first log
14 you look at in identifying potentially sandy
15 zones.
16 Q. Potentially sandy zones?
17 A. Sandy zones.
18 Q. Thank you, all right. Then we
19 have our depth plot. Then here in the middle
20 is the resistivity plot, correct?
21 A. Yes.
22 Q. All right. And on this
23 algorithmic and I say this only because this
24 is not equal distant blocking in the track.
25 But do I understand correctly that when this
1 is a measure of resistivity, which is kind of
2 the inverse of conductivity, right?
3 A. The two measures conductivity
4 was presented here is resistivity, yes.
5 Q. Okay. So from -- as we go
6 towards the right on this track we're
7 basically showing a higher resistance which
8 could potentially identify the presence of
9 hydrocarbon, since hydrocarbon is an
10 insulator, right?
11 A. Not necessarily, but it can.
12 Q. Potentially is what I said.
13 A. One of the reasons, if
14 resistivity goes to the right, so higher, it
15 means that it can be in the consideration
16 with other methods.
17 Q. Sure.
18 A. Can be one of -- one of the
19 reasons is -- is the hydrocarbons or wet
20 drill mud effect on rocks, yes.
21 Q. Okay. But to the extent it's
22 hydrocarbon it goes right because hydrocarbon
23 doesn't conduct electricity very well, right?
24 It's not a conductor?

25 A. Hydrocarbons are resistant.
1 Q. Right. So it would have a
2 higher resistivity measure, right?
3 A. Yes.
4 Q. Something like salt water, which
5 conducts, you would -- that -- the plot would
6 trend to the left of the scale, right?
7 A. Salt water, you mean --
8 Q. Salt water.
9 A. You mean if sand is saturated
10 with brine?
11 Q. Yes.
12 A. Sand is saturated with brine,
13 yes, it would track more to the left.
14 Q. Okay.
15 A. To 0.2 in this case.
16 Q. Thank you. And track 3 is this
17 crossover track I've called it. I know you
18 may call it something different. But this is
19 the density slash neutron crossover tract,
20 right?
21 A. This is a plot of density log
22 and -- and neutron porosity log.
23 Q. Okay.
24 A. They're plotted in a specific
25 scale --
1 Q. Right.
2 A. -- that when they cross over
3 they cross -- negative crossover indicates
4 shale, and the positive crossover, which is
5 shaded here with yellow, indicates --
6 Q. Potential hydrocarbons?
7 A. Gas. Gas or, to my
8 understanding, probably also high GR oil.
9 Q. Okay. And we said the gas --
10 A. Oil and gas.
11 Q. Okay. We understood at the
12 beginning that oil and gas are both
13 hydrocarbons, right?
14 A. Yes, but this crossover is
15 indication of gas in the --
16 Q. Fair enough.
17 A. -- in the oil -- in the case of
18 oil-bearing sand or water-bearing sand they
19 will be touching each other, not showing a
20 crossover unless there is effect of gas on

21 those logs, which basically created the
22 crossover.

23 Q. Okay.

24 A. Creates -- makes density over --
25 over leading to the left, to the left lower
1 and the floor density, which is real
2 densities. And the gas -- if it's there this
3 effect on neutron porosity.

4 Q. Okay. Now, I'm flipping over
5 one page, and I just put on here because I
6 wanted to make sure the Court understands
7 that we're -- what we're looking at. And so
8 in the depth track where it says casing, and
9 we can look at that, you know, it's between
10 17100 and 17200. This is basically
11 identifying where the prior -- the 9 and
12 5/8-inch shoe is, correct? So that anything
13 below it we're just looking at the open hole?

14 A. Yes.

15 Q. Okay. Now, I think what I'd
16 like to do is go to the bottom of the plot or
17 the bottom of the printout, the first
18 printout. And this is an example in the
19 middle track where the resistivity trends to
20 the right, indicating potential presence of
21 hydrocarbon, correct?

22 A. So with reference to this exact
23 layers -- layer of sand, yes, the resistivity
24 here shows that it's hydrocarbon-bearing
25 sand.

1 Q. Okay. And in fairness on the
2 left there wasn't good enough data to
3 determine whether or not there was actual
4 sand, but the middle plot shows resistivity
5 indicative of hydrocarbon, correct?

6 A. Well, there was -- gamma ray
7 data is missing here.

8 Q. Right.

9 A. But you always have LWD data.
10 So the LWD data can be shifted to wireline
11 data and replace this missing data. So there
12 will be data. It's just they plotted because
13 it's not their job --

14 Q. Fair enough.

15 A. -- to compile the two pieces of
16 data.

17 Q. All right. Now, do you -- and
18 to the right here in the crossover, this is a
19 positive crossover that you indicated before
20 and the yellow shading there shows the
21 presence of gas, correct?

22 A. Well, gas, that's -- that's why
23 I say there is -- from one side, yes, gas.
24 From another side, have samples taken from
25 the formation and it doesn't show it's gas.
1 So if you look at the sand above, it also
2 shows the crossover and, okay, it's fair
3 that -- that's why we put sand at 17807 --
4 802 gas is -- gas -- gas or oil, because from
5 this sand there is three samples. It's
6 evidence it's oil.

7 Q. Okay.

8 A. This 300 GOR. So, yes.

9 Q. Ma'am, I just asked you the
10 crossover right here where I'm pointing to on
11 the screen.

12 A. Yes.

13 Q. That is an indicator, not a
14 confirmation, but an indicator of gas,
15 correct?

16 A. I'm trying to explain to you.
17 Yes, in the -- if I took a sample from --
18 from that sand and it would indicate it was
19 gas, I would say yes, it's gas.

20 Q. Okay.

21 A. But the response of this sand
22 and the "center bar," it looks to me quite
23 similar. It looks to me quite similar.

24 Q. Okay.

25 A. Based on -- based on -- well,
1 the resistivity is slight -- is quite
2 suppressed.

3 Q. What do you --

4 A. More prob- -- it's more due to
5 the -- to the rock properties, maybe the
6 properties of the rock is worse. But this
7 yellow crossover indicate -- indicate the
8 gas, but the samples taken from -- from
9 the -- the two upper lobes indicate it's oil.

10 Q. Fair enough. Based on the depth
11 here and the depth is at -- the next marker
12 here is 18200. And if I read that correctly,

13 the depth here is 18217 to 18238. That's
14 what you would recognize as the sand named
15 M56F, which is the bottom lobe, right?
16 A. It's a sand M56E, I think.
17 Q. I think it's F. Here, why don't
18 you look at exhibit -- yeah, right there.
19 A. Yes.
20 Q. Okay. So if I were to write in
21 right here M56F, that would be an accurate
22 representation of the sand that we're looking
23 at right there, right?
24 A. Yes.
25 Q. Okay. All right. Moving up the
1 wellbore. This large lobe here where you've
2 got gamma trending left and resistivity
3 trending right and a crossover right here
4 indicating -- yellow markers in a crossover
5 also indicates the presence of gas, correct?
6 A. It would indicate presence of
7 gas.
8 Q. Okay.
9 A. But sample from the -- from the
10 sand says it's oil. So it's probably quality
11 of the oil. Maybe there is -- it's cause of
12 gas condensate, but there is big amount of
13 gas dissolved in the water -- in the -- in
14 the oil. It looks like gas.
15 Q. I understand that you actually
16 have a confirmation process to follow up to
17 determine what the nature of the fluid is. I
18 understand that. So when I'm ask you if
19 there is crossover indicated here what I'm
20 simple asking is does this at least give you
21 the indication that there is potential
22 hydrocarbon there, whether it's gas or later
23 found out to be oil? Based on just our log
24 as a first step you have to see that there is
25 something there to investigate, correct?
1 MR. LANCASTER: Object to form.
2 A. Yes --
3 Q. (BY MR. HILL) Okay.
4 A. Yes. Hydrocarbon-bearing sand.
5 Q. Okay. And based on the chart
6 that you're using to make sure I stay honest
7 here, you would identify this area, these
8 sands in this area right here as the M56E

9 sand, right?

10 A. Yes.

11 Q. All right. So I'm going to
12 write in M56E in the depth. And moving up
13 the wellbore, there is yet another excursion
14 to the left on the gamma side and an
15 excursion to the right on the resistivity
16 side that correlate, and there is really no
17 crossover there. But based on the chart that
18 you're looking at, this is the M56D sand,
19 isn't it?

20 A. Yes, it is.

21 Q. Okay. I'm going to write M56D.
22 Together these three sands that we've just
23 identified constitute what BP call the
24 primary pay sands in Macondo's open hole,
25 right?

1 A. I'm not sure about the last one,
2 but the first two are primary objectives,
3 yes.

4 Q. Okay. On the chart that you're
5 looking at -- by the way, can you read the
6 exhibit number for the chart that you're
7 looking at? Check me. It's on the first
8 page. Turn this over. There is an exhibit
9 number.

10 A. 3532.

11 Q. I'm sorry?

12 A. 3532.

13 Q. 3532, thank you. And based on
14 that chart M56D, M56E, and M56F are all
15 identified as oil-bearing sands, aren't they?

16 A. Yes.

17 Q. Okay. Now, moving up again, at
18 the elevation of 17804 to 17806.5, showing a
19 little bit of crossover in the right hand
20 track, this is sand M56A, correct?

21 A. Yes, I would not call little
22 bit, but it is crossover and it is sand in
23 M56A.

24 Q. Yes. I'm going to write it in,
25 M56A now, you said you would call it what?
1 You said you'd call it a little crossover?

2 A. Well, when we're talking about
3 the crossover, the amount of crossover.

4 Q. Right.

5 A. If you put the other sands
6 together, we didn't call them little
7 crossover. They are quite --
8 Q. Large.
9 A. It's quite extent.
10 Q. Right.
11 A. I would say you can definitely
12 see there is a crossover, compare it to the
13 other logs.
14 Q. Right. But in this case, small
15 or large, the crossovers are identified by
16 yellow, correct?
17 A. The crossover is identified by
18 yellow shading.
19 Q. Okay. Continuing to move up the
20 wellbore, at elevation 17700 to 17708.
21 A. 7 --
22 MR. LANCASTER: 700.
23 MR. HILL: I'm going to extend my graph
24 a little bit.
25 Q. (BY MR. HILL) Right here this
1 is our excursion on the gamma side to the
2 left indicating potential sand, right?
3 A. Yes.
4 Q. To the right, this is excursion
5 to the right showing resistivity indicative
6 possibly of hydrocarbon, right?
7 A. It increases the resistivity,
8 yes.
9 Q. Okay. Yeah, when we go to the
10 right over here there is no crossover, right?
11 A. Well, there is not only
12 crossover. The density log reads very low
13 here.
14 Q. Right.
15 A. There is density with this.
16 Q. And so this would -- sorry, I
17 didn't mean to interrupt you.
18 A. This is probability lower
19 resolution of density.
20 Q. Okay.
21 A. So that's why --
22 Q. Now, would you agree with me
23 that that's the M57C sand at that elevation?
24 A. Yes.
25 Q. And as there's no crossover

1 there, I think your chart that you're
2 confirming my work with, indicates that it's
3 a brine? Or is determined it's a brine?
4 A. There is not only crossover, but
5 certain important parameter how big the
6 density is. So if you can identify the
7 porous -- porous laminar within the sand.
8 Q. All right. And you're
9 comfortable looking at this as well as any
10 backup confirmation that you did as
11 identifying M57C as a brine sand?
12 MR. LANCASTER: Object to form.
13 A. It's not brine. It's uncertain.
14 Q. (BY MR. HILL) Uncertain?
15 A. Yes, it's uncertain.
16 Q. On your chart does it say
17 uncertain?
18 A. Yes.
19 Q. Okay. All right. Now, I'm
20 moving up to the area that was called outpost
21 incident at 17467. And so that the Court
22 understands, similar to what we've done with
23 these other sands, we look here and there is
24 a excursion to the left on the gamma at 17467
25 that indicates a potential sand, right?
1 A. Yes.
2 Q. And to the right there is an
3 excursion to the right that indicates a
4 potential hydrocarbon gas, correct?
5 A. It indicates either potential
6 hydrocarbons --
7 Q. Okay.
8 A. -- within a virgin formation --
9 Q. Fair enough.
10 A. -- or invade -- invasion of
11 oil-based mud into the formation, what we
12 call resistive invasion.
13 Q. All right. Regardless of what
14 you think caused the reading, you would agree
15 that this is M57B sand, right?
16 A. It is M57B.
17 Q. All right. Now, when we go over
18 to the right you see a small crossover, don't
19 you?
20 A. I see the -- I see them touch.
21 So if you want me, I can give you my analysis

22 what it's based on.

23 Q. I'd like for you to answer my
24 question. Do you see a crossover?

25 A. In this final thing I don't see
1 the crossover because crossover should be
2 expressed with yellow color, and I don't see
3 it.

4 Q. Do you see the red and the blue
5 lines crossing and intersecting?

6 A. I see them touching and one
7 point of -- of the neutron log point to the
8 right, but there is no crossover which is
9 shaded with yellow how I see here.

10 Q. All right. So you agree that
11 the lines intersect so you see that
12 crossover, but that crossover is not big
13 enough to be shaded yellow --

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17 A. I don't see it at all.

18 Q. (BY MR. HILL) You don't see the
19 crossover of the red and the blue color?
20 Now, so that I'm clear and so the Court's
21 clear on this precise area I'm talking about,
22 I'm going to circle that. Is that fair?

23 A. Yes.

24 Q. Okay. So I'm going to circle
25 this right here. And I want to know what
1 your testimony looking right now at the red
2 and blue plots, do you see them intersect?
3 And I -- let me zoom up.

4 A. Yes, I didn't have this luxury
5 on -- on the rig.

6 Q. I understand that.

7 A. And I also did not look at the
8 plot. So when I looked at the plot on the
9 rig they did not touch, and also the
10 petrophysical analysis is -- it's not like
11 looking at every -- every sand, also look the
12 at the sands together.

13 Q. I understand.

14 A. And I can explain it to you
15 because it did not look to crossover to me.

Page 487:19 to 490:24

19 Q. My question right now is --
20 right now does that look like those two plots
21 intersect?

22 A. Yes.

23 Q. Okay. What I'd like to know is
24 is this the document that you were looking at
25 on the rig on April 13th?

1 A. I don't know.

2 Q. Was it similar to this, the
3 same -- same data?

4 A. It was -- it was a printout, but
5 not this nice, final printout you're showing
6 me now.

7 Q. Okay. Now, you recall at the
8 top header this data log had been processed
9 on April 13th, 2010, right?

10 A. It doesn't mean it was print out
11 and tendered to me.

12 Q. That's what I'd like to know.
13 Is it when you got back to shore did you look
14 again at any of this, at any of these --

15 A. I --

16 Q. -- triple combo logs that were
17 final print or otherwise?

18 A. I'm sorry. I load the data. I
19 don't look at the printouts.

20 Q. Okay.

21 A. I look at the data in the
22 software where I loaded it in, and I have the
23 luxury of zooming in.

24 Q. And printing it out in this
25 format, the data was at least available to
1 you had you wanted to do it, prior to the
2 incident?

3 A. Prior to the incident, I was
4 confident about putting the top of my
5 hydrocarbon-bearing zone at that point at
6 18 -- at 17803.

7 Q. My question, which I don't think
8 you answered, is if you -- or did you have
9 the data available to you to print out in
10 this format or any other format that you can
11 blow up and look at the triple combo log
12 prior to April 20th?

13 A. I don't need to print it out. I

14 don't work with -- with the logs on the -- in
15 the paper.

16 Q. I just asked if you had data
17 available to you, if you wanted to do it?

18 A. I had triple combo data
19 available, yes, I did have the data available
20 and loaded into the software.

21 Q. And you could have printed --
22 printed or had printed for you a printout
23 like this that shows, as you've indicated
24 here today, the blue and the red line
25 intersecting, right?

1 A. I don't need to bring it out to
2 look at it because next -- post incident when
3 you -- we put them on the -- in the big
4 screen like that and zoom in, that's why we
5 indicated that zone is there. So that was
6 the reason. That's why we -- where we saw
7 it.

8 Q. Okay. So you didn't have -- you
9 have had same information available to you on
10 the 13th as you did on the 20th and the 21st;
11 you were just able to zoom it up on the 20th
12 and 21st to see what we just looked at right
13 here?

14 A. We had more data available and
15 as I said, what we're looking at now is just
16 a printout of one log.

17 Q. Right.

18 A. It was -- day after incident
19 when I was telling you about this group of
20 petrophysicists working together, we had all
21 the data loaded in the software, plotted on
22 the big screen, zoomed it in, and we have
23 discussion. There were more data available
24 by that time --

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3 Q. Sorry. We're actually going to
4 look at another log, so I mentioned -- that
5 might not be available to you. But my
6 question was is there any reason had you
7 wanted to look closer at M57B that you did
8 not have the information available to you or
9 the data available to you to print this out

10 sufficient to be able to see this crossover
11 prior to the incident?

12 MR. LANCASTER: Object to form.

13 A. Prior -- prior to the incident,
14 you mean after I came back from the rig --

15 Q. (BY MR. HILL) Yeah.

16 A. -- in the office?

17 Q. Yeah, between April 13th and
18 April 2 -- April 20th.

19 A. I could print out this data
20 because -- yes.

21 Q. And did --

22 A. I could load it in -- I did not
23 print it out. I could print it out because
24 it was in my software already.

25 Q. Okay. But, in fact, after the
1 incident somebody did just that and they
2 printed it up and blew it up just like we did
3 here on this ELMO machine, right?

4 A. No, we did not print out.

5 Q. Okay.

6 A. When you -- when you have u a
7 printout you can't do anything with it.
8 You -- you can't stretch it. So that's the
9 luxury of having it in a software. You can
10 zoom in. You can do the scale bigger. You
11 can do the tracks wider, and then you can see
12 it. That's how we saw it.

13 Q. Fair enough. So on April 13th
14 when you came back you could have used your
15 software to stretch the scale or do whatever
16 to find out if those two plots actually
17 intersected at M57B? Question, you could
18 have done it, right?

19 MR. LANCASTER: Object to form.

20 A. Theoretical, yes, I could. But
21 I'm not sure at the point of reference to
22 April 13, I'm not sure I had the final data
23 from Schlumberger, final LS file.

24 Q. (BY MR. HILL) I understand.
25 I'm saying anytime between April 13th and
1 April 20th, you had the final data in that
2 period, right?

3 A. Yes, at that time -- in that
4 time, yes.

5 Q. You could have done it, but you

6 didn't, right?
7 A. I'm not required to.
8 Q. That wasn't my question. You
9 could have, but you didn't?
10 A. I did not.

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12 Q. (BY MR. HILL) Now, have you
13 ever heard of a laminated sands log?
14 Laminated analysis sand -- let me try that
15 again. Strike.
16 A laminated sands analysis.
17 A. I know about laminated sands
18 analysis.

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3 Q. Okay. All right. I have
4 another printout, and this one is called a
5 laminated sand -- a laminated sand analysis,
6 and I've marked it as Exhibit 3541. Have you
7 ever -- and, first of all, let me just --
8 looking at some of the header information, it
9 is dated 11 April 2010. At the bottom it
10 says witnessed by you and Stuart Lacy,
11 correct?
12 A. Laminated sand analysis is
13 produced later. It's an in-house
14 Schlumberger analysis.
15 Q. How much later, do you know?

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19 A. Well, I do not remember looking
20 at this data prior to the incident, and they
21 put us as witnesses here. I guess it's just
22 a form of in the header, but I did not
23 witness this -- this is analysis.

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25 A. So there should be someone who
1 produced the analysis.

Page 495:03 to 495:04

3 A. So Roy -- Roy Dove.
4 Q. Roy Dove --

Page 495:06 to 500:04

6 Q. -- would be the analyst who
7 produced it, right?
8 A. Yes.
9 Q. And it says that that -- and Roy
10 Dove is right there to the right on the
11 second page of the header, right?
12 A. Yes.
13 Q. All right. The process date is
14 dated 16 April 2010, correct?
15 A. Yes.
16 Q. Prior to April 20th, 2010,
17 right?
18 A. It's process doesn't -- I mean,
19 I received it.
20 Q. Okay. Did you ever look at
21 this? Do you remember ever looking at it?
22 A. I remember I -- when I received
23 this log I looked at it, yes.
24 Q. Do you know whether you received
25 it pre-incident or post-incident? Before
1 April 20th or after April 20th?
2 A. After April 20th.
3 Q. All right. So it was processed
4 on April 16th, but you didn't look at it
5 until after April 20th?
6 A. I know when he -- they brought
7 it in. I remember that there was a meeting,
8 so -- which was called by petrophysical team.
9 And Carl Levin, who was a Schlumberger
10 representative and we had Roy Dove to join us
11 and we were all sitting in the conference
12 room and he was presenting us -- he was
13 showing us the -- all the printouts there was
14 for Schlumberger.
15 Q. All right. Well, when
16 Schlumberger does this analysis they put
17 together a nice little color legend at the
18 bottom and at the top, but we'll look at the
19 bottom the green here indicates what?
20 A. Oil.

21 Q. Oil. And if you go up this
22 track that is marked right above the
23 legend --
24 A. See, why -- first of all -- oh,
25 I'm sorry.
1 Q. Go ahead.
2 A. Are you -- so you think this is
3 laminated sand?
4 Q. I'm asking you, have you ever
5 seen it?
6 A. This is analysis. The analysis,
7 it's a program specifically created by
8 Schlumberger. There is algorithm of
9 laminated sand. So there is a sands
10 laminated with shales thinly that create an
11 effect on both gamma ray and resistivity that
12 actually -- something like uniform lobe.
13 It's lamination.
14 Q. All right.
15 A. So some of them are hydrocarbon
16 bearing, some of them shale. And then this
17 analysis is done specific -- specifically for
18 those laminated sand.
19 Q. Okay.
20 A. In the -- we don't -- we --
21 these analysis apply to these logs, but
22 they're not laminated sands.
23 Q. Very good. One of the things
24 that this printout does, though, is this
25 analysis of laminated sands -- I understand
1 it's not a laminated sands per se, it's an
2 analysis of laminated sands, correct?
3 A. There is also -- there is
4 analysis done by Schlumberger called ELAN
5 program, which is collection analysis which
6 is considered conventional sands and we look
7 at it in the detail -- details and use as a
8 reference because that's -- the sense we
9 expect to see in the area is analysis we kind
10 of respect and take into consideration.
11 Q. Okay.
12 A. To run laminated sand analysis
13 you're going to need to -- to do to make
14 sure -- to have an idea that it's laminated
15 sand and understand what you're looking for.
16 Q. All right. So to make sure I

17 understand, one of the things that
18 Schlumberger does is offer you analysis that
19 they put together in a printout like this
20 that's titled laminated sands analysis,
21 right?

22 A. Yes.

23 Q. And did --

24 A. It's al- -- I'm sorry.

25 Q. No. Were you done?

1 A. Yes. It's also you need to --
2 to understand what -- what is algorithm
3 beside that. That sand analysis is -- the
4 laminated sand, they usually are quite thick
5 and there is lamination inside, so there is a
6 depth kind of this algorithm -- algorithms
7 apply to certain -- it -- the thickness of
8 the sand should be thick enough that -- the
9 sand should be thick enough to provide to --
10 to have this analysis applied.

11 Q. All right.

12 A. Because those laminations, very
13 small sands and shales, they are within
14 thicker sand, thicker lobe or you -- which
15 you identify. This is laminated sand. I
16 want to make an analysis of it. So I work --

17 Q. I'm listening. Just tell me
18 when you're done.

19 A. You don't use it for whole
20 section.

21 Q. All right.

22 A. You apply to -- to the zone
23 where you have your potential sand, your
24 potential sand which you call laminated.
25 Then there is -- it's done on purpose,
1 because one of the parameters of the analysis
2 is shale resistivity, and the shale
3 resistivity has to be from -- from the
4 sand -- from the shale above.

Page 500:15 to 500:19

15 Q. (BY MR. HILL) Now, this
16 particular sand or this particular analysis
17 that Schlumberger provided, all right, that
18 was processed on April 16th has a legend that
19 indicates oil?

Page 500:21 to 500:23

21 Q. -- that indicates oil in the
22 color of green in this track right here that
23 we're going to go up. All right?

Page 501:06 to 504:01

6 Q. (BY MR. HILL) Now, if we were
7 to follow these tracks up this depth track,
8 we would be able to correlate just as we did
9 with the prior log with the -- with the
10 triple combo that there are indications of
11 green showing the presence of oil in those
12 sands, right? This analysis dem- -- shows
13 that or at least depicts that; is that
14 correct?

15 MR. LANCASTER: Object; form.

16 A. In this analysis the oil is
17 shaded with green.

18 Q. (BY MR. HILL) All right. In
19 fact, we see one right here. And if we were
20 to look at our chart, we could correlate that
21 with M56F and E, based on the height. So
22 here's what I want to say: All the -- as we
23 move up this we find green indicating the
24 presence of oil at elevations consistent with
25 the sand depths that you identified in the
1 prior chart, but I want to focus just on one.
2 Actually, focus on two. Right here at the
3 elevation of 17804 to 17806, which is
4 where --

5 A. 17 --

6 Q. 17804 --

7 A. Yes.

8 Q. -- to 17806 there is a green
9 blot there, correct?

10 A. There is a green, yes.

11 Q. And that is the M56A sand. It
12 corresponds at those depths, correct?

13 A. Yes.

14 Q. And do you mind if I write on
15 here M56A? Would that be accurate?

16 A. With green shading, yes.

17 Q. M56A. And so based on this

18 analysis that Schlumberger provided BP, this
 19 is the sand that you called out as the
 20 shallowest hydrocarbon-bearing sand, correct?

21 A. Yes.

22 Q. All right. Moving farther up
 23 the wellbore at the elevation 17467 this
 24 is --

25 A. Yes.

1 Q. I haven't asked my question yet.
 2 At the elevation 17467, that's the sand that
 3 you named M57B, right?

4 A. Yes.

5 Q. And I'm going to write in M57B.
 6 There is, and I'm circling it right there, a
 7 green dot, isn't there?

8 A. Yes.

9 Q. Okay. And according to the
 10 analysis that Schlumberger provided BP that's
 11 indicative of oil, correct?

12 A. I do not think that this
 13 analysis, the laminated sand analysis can be
 14 applied to this exact sand or to any sands in
 15 there.

16 Q. Okay. All right.

17 A. It's question to Schlumberger
 18 what the parameters they used, what the --
 19 why their technique is -- is re- -- can
 20 resolve it. That technique is applied to --
 21 to block -- to the sands where there is
 22 lamination within them, shale and sand.

23 Q. Do you understand that BP post
 24 incident has taken the position that there is
 25 a hydrocarbon-bearing sand at 17,467 feet,
 1 right?

Page 504:03 to 504:16

3 A. We call that sand -- that sand
 4 you referenced to is 56B, is the --

5 Q. (BY MR. HILL) M57B, correct?

6 A. M57B in the post-memorandum is a
 7 possible gas because we wanted to highlight
 8 the uncertainty. It's a 2 thick foot sand.
 9 The evaluation of it is highly uncertain.

10 Q. Ma'am, you look at Exhibit 3532
 11 and the chart that you helped prepare

12 identifying the sands and depths and putting
13 the fluid content in that. Does 57B say that
14 the fluid content is gas or does it say that
15 it's uncertain?
16 A. It's possible gas.

Page 505:12 to 506:17

12 Q. (BY MR. HILL) So you indicated
13 it's possible gas, which indicates possible
14 hydrocarbons, right?
15 A. We indicated as a possible gas.
16 Q. All right. Did -- after
17 April 13th and after any of this analysis
18 that was conducted after April 13th when you
19 identified the shallowest hydrocarbon sand
20 did you talk to the drilling engineers and
21 tell them, hey, there may be a higher
22 potential hydrocarbon-bearing sand in the
23 interval, hold off, don't do anything, we
24 need to do further analysis?
25 MR. LANCASTER: Object to form.
1 A. I did not because there is no --
2 I did not have material on the rig to provide
3 them with -- with a different -- different
4 depth.
5 Q. (BY MR. HILL) Okay. Now, did
6 you talk to Mr. Kent Corser at all during,
7 let's say, post incident and help him
8 identify what the -- what the elevations of
9 the sands were in the production interval?
10 A. I'm not sure I know the
11 gentleman you mentioned.
12 Q. Never heard of Mr. Kent Corser?
13 A. No.
14 Q. So if he sent you e-mails or
15 chains of e-mails and put you in touch with
16 people, you wouldn't recall his name?
17 A. I'm not sure.

Page 507:01 to 507:02

1 Ms. Skripnikova, I've handed you what's been
2 marked as Exhibit 3542.

Page 507:05 to 507:07

5 Q. (BY MR. HILL) This is an e-mail
6 that -- an e-mail chain that's several pages
7 long that starts with a Kelly "McAughan." Is

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14 Q. (BY MR. HILL) Dated June 9th.
15 And within this chain what I'd like you to do
16 is flip to the back three pages -- four pages
17 to the Bates label that ends on 357. Page
18 after that, please. Okay. Now, there is --
19 starting at the bottom of this page there is
20 an e-mail chain that starts with Mr. Kent
21 Corser, dated June 5th to Kelly Mc- -- I
22 can't pronounce the name. McAughan, I think
23 is what you said. And --

Page 508:10 to 509:01

10 Q. Yeah. Well, one of the things
11 that Mr. Corser says is -- is he had asked
12 Kelly -- you testified -- do you know Kelly?
13 A. Yes, I do. She's reservoir
14 engineer who worked in the subsurface team.
15 Q. Okay. And Mr. Corser asked
16 Kelly, can you provide comment regarding the
17 sand that was measured with the PWD tool, and
18 in parentheses 41 point -- 14.1 PPG, to which
19 Ms. McAughan -- McAughan says, "Our
20 petrophysicists deem the sand at 17700
21 measured depth not to have hydrocarbons,
22 possible brine filled."
23 Do you know if you are the
24 petrophysicist to whom she was referring to
25 here?
1 A. She refers to me.

Page 509:08 to 509:13

8 Q. Do you know if you were every
9 providing any information to people who were
10 involved in BP's internal investigation of
11 the Macondo well incident?
12 A. I did not do it directly, like
13 handing them the data.

Page 509:15 to 509:17

15 A. I was working on data, and I
16 suppose some of the parameters agreed that
17 were used in the --

Page 509:20 to 510:06

20 A. -- used in the investigation.
21 Q. Okay. And at the time that you
22 provided it, while you may not have provided
23 it directly, you understood that you were
24 pro- -- trying to provide accurate
25 information to the -- we call it Bly report
1 or Bly investigation team, but BP internal
2 investigation team. Did you understand that
3 you were providing data for that purpose?
4 A. I understood that my -- there --
5 there are several team working on the
6 investigation.

Page 510:08 to 510:09

8 A. And some of -- most of them
9 needed information about the reservoir.

Page 510:11 to 510:20

11 A. And I was providing it, but not
12 by -- I don't know they -- I give it to --
13 one of the paper we were talking about, the
14 table. So then the table progressed while --
15 the table is also part of table -- part of
16 memorandum, the technical memorandum, because
17 there was a memorandum progressing. There
18 was slide -- slide and the changes. So I
19 suppose that everyone kind of took the latest
20 data --

Page 510:22 to 511:01

22 A. -- they needed and/or otherwise
23 requested the latest data.
24 Q. Okay. Do you know a Mr. Pere
25 Allen? Did I pronounce that right?
1 A. I met him once, yes.

Page 511:07 to 511:12

7 Q. Okay. And this e-mail chain
8 indicates that they were asking you to
9 provide some answers on some questions that
10 he had regarding the chart on page -- that
11 ends in 3586, right?
12 A. Yes.

Page 512:07 to 512:16

7 Q. Well, do you have any idea what
8 the -- what the pore pressures were for the
9 main pay sands that you looked -- that you
10 looked at and studied?
11 A. I worked with -- with pressure
12 sands measured in psi.
13 Q. Okay. You don't look at it in
14 PPG?
15 A. No, because I'm looking at the
16 gradients.

Page 512:21 to 513:04

21 Q. And I understand you were a part
22 of other people working on gathering data,
23 but did you ever see data on the depths and
24 elevations of the sands in the open hole
25 together with other pore pressure in PPG?
1 Did you ever see that aggregated like that?
2 A. Yes. It's in one of the -- one
3 of these documents we spoke about where there
4 were several image from several people.

Page 513:13 to 513:23

13 Q. Okay. I'm just asking, are you
14 familiar, sitting here today, without
15 referencing any documents, to identify the
16 pore pressures in PPG that are associated
17 with any of the named sands in the open
18 interval -- in the open hole?
19 A. No.
20 Q. Okay. Now, there has been a
21 previously marked exhibit in this deposition

22 I want to hand you. It's been marked as
23 7279.

Page 514:01 to 514:06

1 Q. (BY MR. HILL) Now, I'll
2 represent to you that it's been used in a
3 deposition, and the e-mail is Mr. Kent Corser
4 talking to an outside engineer from ADD
5 Energy. I don't know, are you familiar with
6 them?

Page 514:08 to 514:11

8 Q. Top of the e-mail chain, there
9 is a "To" sign -- or a "To," and it says
10 Morten Haug Emilson, and this e-mail is dated
11 June --

Page 514:13 to 514:15

13 Q. -- 25th; do you see that?
14 A. I'm looking at it. I see that
15 name.

Page 514:18 to 515:12

18 Q. Mr. Corser tells this gentleman
19 that this sand is new, they did a new study
20 and have classified it as a gas-bearing
21 and -- and capable of flow, see attached
22 chart. This is not a brine sand.
23 Now, if you go back to the
24 attached chart -- and I should probably say
25 three e-mails down, before you go to the
1 attached chart, he specifically says the sand
2 he's talking about is 17467 measured depth.
3 On the second page of the e-mail chain. Do
4 you see that? Top e-mail.
5 We have a sand at 17,467 that is
6 2 inches thick 14.1 PPG and classified as gas
7 and would flow. Do you see that?
8 A. Yes, I see that.
9 Q. And do you understand based on
10 that depth that he's talking about the M57B
11 sand, correct?

12 A. Yes.

Page 515:18 to 515:25

18 Q. (BY MR. HILL) Do you disagree
19 with him that it's classified as a sand that
20 would flow? Or let's just start with do you
21 disagree that it's classified as a gas sand?

22 A. He took this gas word from this
23 table, yes.

24 Q. Do you disagree or agree with
25 his characterization of M57B as a gas sand?

Page 516:02 to 516:04

2 A. Yes, from this -- he took this
3 gas from this table, the gas word from this
4 table.

Page 516:21 to 517:21

21 Q. All right. Mr. Corser makes the
22 statement regarding M57B, which you
23 identified based on the 17467 measured depth,
24 he classifies it as a gas-bearing sand
25 capable of flow. Do you disagree -- let's
1 take that -- it's two different things.

2 Let's take it in steps.

3 Do you disagree with
4 Mr. Corser's representation in the e-mail
5 that M57B is a gas-bearing sand?

6 MR. LANCASTER: Object; form.

7 A. Mr. Corser took this gas from
8 this table and...

9 Q. (BY MR. HILL) Regardless of
10 where he got it, do you agree or disagree
11 with the statement that M57B is a gas-bearing
12 sand?

13 A. At the date of Friday, June
14 15 -- 27, when there was -- there was no --
15 at the -- at that date that sand was
16 interpreted by BP petrophysicist team as gas.

17 Q. Okay. So to the extent the
18 investigation team is feeding this
19 information as gas to outside experts are you
20 telling me that that is bad information that

21 they should not rely on?

Page 517:23 to 518:06

23 A. It is a high uncertainty to over
24 that gap, over that zone. And we wanted to
25 highlight it as real uncertainty and we want
1 people to. How else will you do it?

2 Q. And would you --

3 A. So that's why we called it gas,
4 and he uses it so kind of to in- -- include
5 it with whatever analysis we did that there
6 is uncertainty.

Page 520:24 to 521:02

24 And I think this is an obvious
25 question, but nobody has asked you yet. Are
1 you still employed by BP?

2 A. Yes.

Page 521:08 to 523:05

8 Q. (BY MR. HART) With regard to
9 petrophysics as a science, are there areas of
10 specialization or, you know, like doctors,
11 you've got cardiologists or -- or
12 orthopedics, is petrophysics like that?

13 A. There is a four major
14 specialization. They cross over in many
15 places, but it's not exact specification. It
16 means that -- so there are four major. So
17 there is petrophysics operations when
18 petrophysics does operations.

19 Q. Uh-huh.

20 A. Field status where
21 petrophysicist studies much more data than
22 well operations or well exploration, where
23 there's one, to, three, four wells available.

24 Q. Uh-huh.

25 A. The field studies is a big study
1 with more amount of well, plots of core,
2 so...

3 The production cased hole
4 petrophysics --

5 THE REPORTER: What did you say, the

6 production?
7 MR. HART: Case hole.
8 THE WITNESS: Cased hole petrophysics.
9 A. So it says, I guess, itself,
10 what it is.
11 Q. (BY MR. HART) Uh-huh.
12 A. And the full seismic properties.
13 It's where petrophysicist participates in
14 integration of seismic data together with
15 petrophysical data to help it -- for -- for
16 tie, for -- seismic properties, but it's
17 actually specializations for petrophysicists,
18 in our company, like four specializations
19 like that, and you can move within them, get
20 more experience here, more experience there.
21 That's how it works.
22 Q. Where does your experience lie
23 within those four areas?
24 A. Well, I have done op -- ops
25 petrophysics and -- and I'm involved in --
1 somehow in field studies, not to the extent I
2 would prefer to, but I am. And I did some
3 initial seismic properties, so kind of like
4 that. Not -- nothing to be an expert, but I
5 have done that.

Page 524:04 to 528:05

4 Q. Okay. Are you a licensed
5 engineer?
6 A. Licensed by --
7 Q. By any -- any engine -- any
8 organization that -- accrediting
9 organization?
10 A. In the United States?
11 Q. Yes, let's start there.
12 A. In the United States?
13 Q. Yes.
14 A. No, I don't have a degree with
15 United -- any United States institutions.
16 Q. Are you a member of the Society
17 of Petrophysicists and Well Log Analysts?
18 A. SPWLA?
19 Q. Yes.
20 A. I attend the meetings, and I
21 attend the annual meetings in 2009, but I --

22 I don't -- I don't participate. I -- I'm not
23 a member.

24 Q. Okay. So you don't get any
25 publications from them on a regular basis?

1 A. Only -- I'm SP -- SPE, Society
2 of Petroleum Engineers member. So I --

3 Q. Tell me that again.

4 A. Society of Petroleum
5 Engineers --

6 Q. Okay.

7 A. -- SPE.

8 Q. How long have you been a member
9 of that organization?

10 A. Since I came to the United
11 States, probably since 2001, 2002.

12 Q. Okay. And go into your master's
13 degree from the Moscow Institute of Oil &
14 Gas. Did your studies include drill --
15 issues related to the actual drilling of
16 wells?

17 A. No.

18 Q. Okay. And your Ph.D. in
19 technical sciences, and I understood you to
20 say earlier that that prepared you to work on
21 software?

22 A. No. I was leading a software
23 development. There was development of a big
24 package of software in the -- in the
25 organization I worked for --

1 Q. Okay.

2 A. -- software for a geological
3 model creation, and I was leading the
4 petrophysical part of it, like, making it --
5 task problems for the programmers to write it
6 and test. So they wrote the programs, I
7 tested them, and kind of build the model,
8 build the database, how it's supposed to
9 work, where they coming from.

10 And then next part is
11 integration is all other, with core data,
12 with seismic data. It's a big -- big
13 package. I was the leading petrophysical
14 branch .

15 Q. Was that a job or was that part
16 of your studies?

17 A. It was a job, and then as --

18 part of -- part -- part of the -- my -- my
19 thesis, actually, was -- there was a -- to
20 do -- to do that soft- -- to complete the
21 software, to write the software, it also
22 includes testing it, right, and, like, how it
23 works.

24 So I did the petrophysical study
25 using the software, and it was part of -- my
1 thesis was the software itself, the database
2 it create -- I man- -- I create -- managed
3 people to create, and those models of real
4 data, what I used with the software to -- to
5 show the results how it works. So that's my
6 thesis --

7 Q. Your thesis?

8 A. -- objectives, yes.

9 Q. Okay. So am I correct in my
10 understanding that your Ph.D., even though
11 it's called a Ph.D. in technical sciences,
12 was directly related to petrophysics?

13 A. I don't know. I think it's an
14 expert should look at my Ph.D. and say it's
15 more, like, technical or more petrophysics.
16 It include -- it included petrophysical
17 part.

18 Q. Okay.

19 A. And the database, but I don't
20 know the -- how I can say it was. It
21 included the physical studies.

22 Q. Let me -- let me give you
23 another way that might make it easier. Do
24 you consider your studies in obtaining your
25 Ph.D. to be a continuation of your education
1 as a petrophysicist?

2 A. Yes.

3 Q. Okay. Have you ever been to
4 well control school?

5 A. No.

Page 535:04 to 536:04

4 Prior to April 20th, prior to
5 the blowout, had you ever communicated with
6 anyone from Anadarko or any entity that you
7 knew to be affiliated with Anadarko?

8 A. I did not talk to anyone at

9 Anadarko.
10 Q. Okay. Were you aware of their
11 existence prior to this, that blowout?
12 A. I was. I was. They -- they are
13 a partner.
14 Q. You understood them to be a
15 non-operating partner in the well?
16 A. Yes.
17 Q. And do you have any personal
18 knowledge of anyone else from BP
19 communicating with Anadarko about anything on
20 the Macondo well?
21 A. I don't know. I have only
22 experience with myself, how I -- how we do
23 it, and I'm not sure -- who would be the
24 person who would communicate Anadarko is your
25 question?
1 Q. I'm asking you if you were ever
2 a witness where you ever heard anybody or
3 ever saw any communications between BP --
4 A. No, I didn't.

Page 539:03 to 539:14

3 Q. Okay. And is my understanding
4 correct that you were the lead petrophysicist
5 on the Macondo well team?
6 A. There was no lead. There was
7 just petrophysicists.
8 Q. Were there other petrophysicists
9 that were considered part of the Macondo
10 team?
11 A. As peers only, not officially.
12 Q. Okay. You were the only one
13 that was officially assigned to a team?
14 A. Yes.

Page 539:20 to 540:02

20 Q. Had you ever served the same
21 role as a petrophysicist on any other wells
22 prior to Macondo where you were the member on
23 the team, the sole petrophysicist on the
24 team?
25 A. Operations?
1 Q. Yes.

2 A. Yes, in Sakhalin.

Page 540:04 to 540:05

4 A. Sakhalin Drilling, obviously,
5 because I was based in Houston.

Page 544:18 to 545:02

18 Q. Is the bottom line goal of
19 petrophysics to characterize oil and gas
20 reservoirs in terms of size and location?
21 A. Yes, characterize --
22 characterize with the physical parameter,
23 also to have an understanding what makes
24 those parameters vary within one -- let's say
25 within one well, imaginary well, to
1 understand what's -- what causes the variety,
2 and -- yes, that's what I would say.

Page 546:12 to 546:15

12 Q. Now, you were involved in
13 Macondo from the early planning stages,
14 pre-spud, correct?
15 A. No.

Page 546:17 to 547:18

17 at what point in the planning did you get
18 involved?
19 A. I got involved in September
20 where the most -- everything was planned by
21 that time and the team was getting ready to
22 spud the well. So the plan was together by
23 the time when I joined the team.
24 Q. You did participate in some
25 pre-spud meetings on Macondo, correct?
1 A. I don't remember.
2 Q. Okay. Take a look at tab 18,
3 which I'm going to mark as Exhibit 3544. And
4 it begins with Bates
5 No. BP-HZN-2179MDL00209484. Actually, it's
6 just a one-page document.
7 Does this refresh your
8 recollection that you did participate in some

9 Macondo meetings pre-spud?
10 A. When you said "pre-spud
11 meeting," I kind of probably misunderstood
12 you, because there is a formal meeting --
13 Q. Okay.
14 A. -- called "pre-spud meeting."
15 Q. Okay.
16 A. -- which happened, which
17 just happened -- at least I had it in
18 Scotland.

Page 547:20 to 547:25

20 A. It's -- I consider it pre-spud
21 meeting, when you called it pre-spud. And
22 this --
23 Q. I meant before --
24 A. Yes.
25 Q. -- spud.

Page 548:03 to 548:09

3 A. Before spud. And the
4 before-spud meetings, yes. As soon as I
5 understand that I can start working on this
6 well and got permission, from the boss's
7 agreement that I can start, I start
8 participating in those meetings about -- this
9 meeting was --

Page 548:12 to 548:13

12 A. There was -- there was formal
13 meetings, like stage gates.

Page 548:15 to 548:22

15 A. And there's all subsurface team
16 and drillers together. There's special
17 forms, going through the risks and
18 assessments, different areas of work. We're
19 just about to start.
20 Q. And Exhibit 34 -- 3544 reflects
21 one of those -- reflects the setting of a
22 defined executed gate meeting, correct?

Page 549:02 to 549:09

2 Yes, there is -- this is one of
3 those meetings.
4 Q. And you attended that, correct?
5 A. I don't remember to bring my
6 calendar if I attended.
7 Q. Okay. You were invited,
8 correct?
9 A. Yes.

Page 549:11 to 550:04

11 A. And -- more than likely, I
12 attended. But I can't say for sure unless I
13 have to --
14 Q. Well, let me ask you this: If
15 you hadn't attended, you would have gone
16 ahead and reviewed the materials, wouldn't
17 you have, since you were involved in the
18 well?
19 A. I would.
20 Q. Okay. And one of those -- one
21 of the topics of that meeting and one of the
22 things that were gone over was the risk
23 register for the Macondo well, correct?
24 A. Can you point me to --
25 Q. Yes.
1 A. -- what you reference to?
2 Q. Yes. At the bottom of the page
3 right before it says, "Thanks, Eric
4 Mueller" --

Page 550:06 to 550:23

6 Q. -- No. 4, "Risk Register."
7 A. Yes.
8 Q. Okay. And let me show you
9 what's been previously marked -- look at
10 tab 19, please, the next tab. It's a
11 document that's been previously marked as
12 Exhibit 757. It is the risk register for
13 Macondo. Have you ever taken a look at this
14 before?
15 A. Yes.
16 Q. And you had an opportunity as a

17 member of the team to comment upon it,
18 correct?

19 A. If I have expertise in that,
20 yes.

21 Q. And as a petrophysicist, you
22 understood the risks involved in deepwater
23 drilling, don't you?

Page 550:25 to 551:05

25 A. I do understand there is a risk
1 involved into any kind of operations related
2 to drilling.

3 Q. (BY MR. HART) Including the
4 risk of a blowout, correct?

5 A. Yes.

Page 558:25 to 559:17

25 Q. The core samples ultimately were
1 sent, I think, to Pencor or Weatherford Labs?
2 Are you familiar with what I'm talking about?

3 A. Are you talking about the
4 samples?

5 Q. Yes.

6 A. Our core -- sidewall -- sidewall
7 core samples?

8 Q. The rotary sidewall.

9 A. Rotary sidewall core samples.

10 Q. And those took place before you
11 went out to the well or while you were on the
12 well?

13 A. It happened while I was on the
14 well.

15 Q. Okay. And that coring operation
16 almost didn't happen because it wasn't
17 budgeted for, correct?

Page 559:19 to 559:22

19 A. You're confusing.

20 Q. (BY MR. HART) I'm confusing
21 you?

22 A. You're confusing things.

Page 559:24 to 560:05

24 A. Because there's a coring. It's
25 a -- it's a different procedure from taking
1 sidewall cores. So coring is when you're
2 actually drilling and collecting the pieces
3 of rock into the barrels and then trip them
4 out of hole. This is coring operations.
5 That did not happen.

Page 560:07 to 560:08

7 A. And the coring samples did
8 happen.

Page 560:10 to 560:17

10 A. So there was -- there were runs
11 to collect sidewall cores.
12 Q. Okay. So the side core --
13 sidewall cores were always planned. They
14 were always going to be done; is that
15 correct?
16 A. They were planned for some --
17 for -- they were planned for the well.

Page 560:23 to 561:01

23 Q. Okay. The rotary sidewall
24 coring operation that did take place while
25 you were there wasn't considered particularly
1 successful, was it?

Page 561:03 to 562:02

3 A. There was -- we had to do
4 several attempts to -- several runs in hole
5 with the tool trying to collect the samples
6 which were planned in the predrill data
7 package.
8 Q. (BY MR. HART) Do you consider
9 Stuart Lacy to be more experienced than you
10 in terms of running -- witnessing and running
11 wireline coring operations?
12 A. I do.
13 Q. Okay. And let me show you --
14 I've got to hurry because I am running out of

15 time -- tab No. 28, which I'm going to mark
16 as Exhibit 3547. It ends in Bates
17 No. 89514 -- 114.

18 This is an e-mail from Stuart
19 Lacy to various others, including yourself,
20 on April 15th, 2010, correct?

21 A. Yes.

22 Q. And he talks about how it was an
23 unlucky coring operation, doesn't he?

24 A. Yes. He's talking about --
25 unlucky is core No. 6, but -- he calls it --
1 he calls it "core" here, but it's actually
2 core plug. It's not a whole core.

Page 562:04 to 562:05

4 A. There's samples taken. And the
5 core No. 6 jammed, one of them.

Page 566:24 to 570:22

24 Q. Okay. I want to start with
25 Exhibit 3538, which you've seen a number of
1 times in this deposition, and I just want to
2 get us level set, as they say. So that is
3 the e-mail, an e-mail where you wrote to
4 Mr. Bodek and you said that you believed the
5 shallowest hydrocarbon zone was at
6 17,803 feet, correct?

7 A. Yes.

8 Q. And just so it's clear for the
9 record, specifically what information were
10 you looking at at the time you did your
11 analysis and nominated 17,803 feet as the top
12 hydrocarbon zone? Specifically what
13 information were you looking at?

14 A. I was looking at field printout
15 from Schlumberger's triple -- triple combo
16 log, and I also had screen -- screen slides I
17 made while drilling over -- over the last --
18 over the open hole section with a reference
19 to lithology and mud -- mud cast data.

20 Q. Okay. And I believe you
21 testified you were out on the rig at the time
22 you did that; is that right?

23 A. I was on the rig.

24 Q. Okay. And where specifically
25 were you at on the rig at the time you were
1 looking at this data?

2 A. There is a room on the rig
3 assigned to well site geologist, to the kind
4 of BP subsurface team. So when I was there
5 Stuart Lacy was in that room, there was
6 another seat for someone -- for a visitor
7 like me, there were a couple of mud people
8 sitting in this room. That's where I was
9 when I did this analysis.

10 Q. Okay. And when you were doing
11 this analysis where you nominated 17,803 feet
12 as the top hydrocarbon zone, was there
13 anybody in the room with you?

14 A. I believe Stuart Lacy was.

15 Q. All right. And to the best of
16 your recollection, did he look at any of this
17 data during the time you were looking at it?

18 A. I recall that the printout --
19 there was lots of space in the room. There
20 was two desks standing next to each other.
21 It was very little space. And I had it laid
22 down between us. We wrote -- I was looking,
23 and I think he was looking as well. I do not
24 recall his participation into -- into the --
25 saying this is hydrocarbon, what he thought
1 about that. I do not recall that exactly.

2 Q. Okay, fair enough. Now, if you
3 could hand that back to me, because I want to
4 have -- I want a copy in front of me.
5 Mr. Bodek writes back to you, he says, I can
6 buy that. That the shallowest sand that we
7 see legitimate DEN, slash, NEU crossover on
8 the triple combo log.

9 DEN/NEU, what does that stand
10 for, if you know?

11 A. He means overlaying the
12 crossover where you can look at overlaying
13 density log and neutron log together in a
14 specific scale. You can -- you can give the
15 specific place where the neutron density
16 cross -- crossover negatively and positively
17 and you can use it for your analysis.

18 Q. Okay. Now, prior to April 20th
19 did anybody, to your knowledge, ever come to

20 you and say that they thought there was a
21 shallower hydrocarbon zone above 17,803 feet?

22 A. Nobody did.

23 Q. Okay. And let me show you what
24 we'll mark as Exhibit 3549, and since I only
25 have one copy, I'll throw it up on the ELMO.
1 Do you see that it's a e-mail from Mr. Bodek
2 dated April 15th, Thursday, 2010, and it's to
3 a Paul Chandler, Anadarko, and John Kamm,
4 Naoki Ishii or Ishii Naoki and Robert
5 Quitzau? Do you see that?

6 A. Yes.

7 Q. All right. And you're shown as
8 being a cc on that e-mail, right?

9 A. Yes.

10 Q. And the highlighting is mine.
11 That wasn't, I don't think, there on the
12 original? But I want to read -- I guess I
13 can blow it up a little bit so you can see it
14 better. The part I highlighted, it -- it
15 says -- well, it starts Macondo partners. Do
16 you see how it starts Macondo partners?

17 A. Yes.

18 Q. And the subject is evaluation
19 complete at Macondo. Do you see that?
20 Evaluation subject matter.

21 MR. MONICO: Right there.

22 A. Yes.

Page 571:09 to 572:09

9 Q. It says, Other data, including
10 MWD, slash, LWD logs, mud logs and wireline
11 logs have been posted in WellSpace. Wireline
12 logs are in the 'wireline info' folder and
13 include the graphic, digital, and DLIS files,
14 in parens, when applicable, for the triple
15 combo, CMR, ECS, OBMI, MDT, VSP, and CSS."

16 Did I read that correctly?

17 A. Yes.

18 Q. All right. Now, did Mr. -- were
19 you aware that Mr. Chandler was a development
20 geologist for Anadarko?

21 A. I was not.

22 Q. Okay. Were you aware that
23 Mr. Kamm was an operations geologist for

24 Anadarko?

25 A. No, I wasn't.

1 Q. Were you aware that Mr. Quitzau
2 was a drilling consultant for Anadarko?

3 A. No, I was not.

4 Q. Did Mr. Kamm or Mr. Chandler or
5 Mr. Quitzau or anybody else from Anadarko
6 ever pick up the phone and call you prior to
7 April 20th and say that they thought there
8 was a shallower hydrocarbon zone than
9 17,803 feet?

Page 572:13 to 574:22

13 A. Nobody called me from Anadarko.

14 Q. Okay. Same with MOEX, did
15 anybody with MOEX ever call you for any
16 reason prior to April 20th, 2010?

17 A. No.

18 Q. Okay. Now, you've talked a lot
19 in the last day and a half about how after
20 the accident on April 20th yourself and some
21 other petrophysicists came together and
22 looked at the well data further, correct,
23 just to get us level set?

24 A. Post incident.

25 Q. Yes.

1 A. Yes.

2 Q. All right. And -- and best to
3 your recollection, that was -- that would
4 have been the day after, so that would have
5 been April 21st; is that right?

6 A. Yes.

7 Q. All right.

8 A. To my best recollection.

9 Q. And when you got together after
10 the accident on April 21st do you remember
11 approximately how many petrophysicists came
12 together for that meeting and -- and who they
13 were, if you remember?

14 A. Two or three. Do you want me to
15 tell the names?

16 Q. Yes, if you remember.

17 A. Ray Widrinski, Bruce Wachner,
18 and Rob Caston.

19 Q. Okay. And where did you-all

20 meet specifically at BP? Where did you meet?

21 A. Eastern team -- it was usually
22 eastern team room with the big screens or our
23 central team room. I don't recollect right
24 now.

25 Q. All right.

1 A. One of the two team -- two
2 room -- two team rooms.

3 Q. All right. And since we're not
4 there, can you generally describe -- you say
5 it's a big room. Approximately, how big?
6 We're in a conference room that's
7 approximately 30 by 30 roughly. Do you think
8 it was about that size or bigger or smaller?

9 A. Not big like this. There was
10 rooms with -- with a big desk in the middle
11 and approximately 20 people can sit 20 --
12 around 20 people can sit comfortably around
13 those tables.

14 Q. Okay, that's helpful.

15 A. And there is there are two
16 screens they can project data on, two
17 screens. I can't say the size, what by what.

18 Q. Right. There is a backdrop
19 behind you that's a blue screen. Do you
20 think the screens in those rooms are about
21 that size as far as width, or would they have
22 been larger or smaller?

Page 574:25 to 575:04

25 A. They probably this height and
1 probably twice wider. Are you clear?

2 Q. (BY MR. LANCASTER) Yes, Yes.
3 Twice -- twice as wide as --

4 A. And probably this size.

Page 575:13 to 575:16

13 Q. (BY MR. LANCASTER) And I think
14 if I heard you correctly, that you said you
15 had the ability to magnify the data that was
16 being projected on the screen, is that right?

Page 575:18 to 578:14

18 A. Yes, you can scale there -- into
19 the picture both vertically and horizontally.

20 Q. (BY MR. LANCASTER) Right. Now,
21 if you looked at a number --

22 A. I'm sorry.

23 Q. Go ahead.

24 A. On the computer, so it
25 translates from the computer to the screen.

1 Q. Right. So if I'm getting you
2 right, somebody had the data loaded on a
3 computer and was able to project it up on the
4 screen; is that right?

5 A. Yes.

6 Q. Okay. Now -- you've seen there
7 has been several versions of your
8 technical -- or the technical memorandum that
9 was written by a number of people, and you've
10 talked about those during the course of a day
11 and a half, you talked about one version in
12 May, and then there was a version 3 that's
13 Exhibit 3533, and I'll put that in front of
14 you. And you were talking about that today
15 as well, correct?

16 A. Yes.

17 Q. All right. So I'm going to just
18 ask you some questions about that document.
19 All right. If you'll turn to Page 32. Do
20 you see at the top it says the M57B sand was
21 not interpreted as gas bearing? Do you see
22 that?

23 A. Yes.

24 Q. All right. And I'm actually
25 borrowing from my friend Mikal Watts efforts
1 from yesterday. I've made up a little
2 PowerPoint slide. So that covers the first
3 bullet. If you'll also look down at Page 32,
4 it says, quote, the M57B lacks the pronounced
5 neutron density crossover as observed in the
6 gas-bearing M56A sand, end quote.

7 Do you see that on -- on the
8 document on Page 32?

9 A. Was not interpreted.

10 Q. No, the line -- do you see the
11 line where it says, quote -- this is the
12 second line after Figure 30. It says, quote,
13 The M57B lacks the pronounced neutron density

14 crossover as observed in the gas-bearing M56A
15 sand, period. Do you see that?
16 A. Yes.
17 Q. Okay. That was the second point
18 on my slide.
19 A. Did we do the first already?
20 Q. Yes, I did the first already.
21 A. Can we come back to first?
22 Q. Yeah, the first was M57B sand
23 was not interpreted as gas bearing, okay. I
24 didn't put that first bullet in quotes
25 because I just summarized it.
1 A. So you -- you -- in this you're
2 referring to M57B?
3 Q. Yes. Yeah, I didn't put M57B
4 there. It was probably write it in, so
5 that's what I'll do. Be like Mikal now.
6 Okay. I'll write that in the first part.
7 Anyway, you saw the second
8 bullet. I just read it, right, quote?
9 A. Yes.
10 Q. Okay. Then it says in the -- in
11 the exhibit, next line, next sentence down it
12 says, quote, In addition, there was no mud
13 gas response over M57B.
14 Do you see that in the document?

Page 578:16 to 578:24

16 A. Yes.
17 Q. (BY MR. LANCASTER) Okay, great.
18 Now, if you'll turn to the next page,
19 Page 33. The top sentence, quote, The
20 Schlumberger land well logs analysis shows
21 the M57B saturation is moved water, in
22 parentheses, i.e., the elevated resistivity
23 is due to synthetic mud invasion, end paren.
24 Did I read that correctly?

Page 579:01 to 579:11

1 A. Yes.
2 Q. (BY MR. LANCASTER) All right.
3 Next one, turn to Page 31. Do you see that
4 last paragraph above -- above the graphic
5 that begins, the M57B sand? It's fourth

6 paragraph down. Do you see that?
7 A. Yes.
8 Q. Okay. Quote, The M57B sand is
9 approximately 2 feet thick and is below log
10 resolution for accurate fluid determination.
11 Did I read that correctly?

Page 579:20 to 580:02

20 A. Yes, you typed it from this
21 document.
22 Q. (BY MR. LANCASTER) All right,
23 thank you and then the next line says, If
24 hydrocarbons were present, and then I put
25 dot, dot, dot, and then the quote, do you see
1 the next line below that the phrase "likely
2 to be gas"? Do you see that in quotes?

Page 580:05 to 580:19

5 Q. (BY MR. LANCASTER) Do you see
6 the words "likely to be gas"?
7 A. Yes, we did not put the waste on
8 neutron density crossover in position about,
9 but --
10 Q. Right. And that can be --
11 A. So those -- those dots --
12 Q. Right, it shows that words are
13 missing. We can always add those in later.
14 And then Page 27, if you'll turn to that. If
15 you'll look at the first full paragraph under
16 the figures, the second line, do you see
17 where it says no core samples were taken in
18 the M57B, and then it goes on, in M56A sands?
19 Do you see that?

Page 580:22 to 580:24

22 Q. (BY MR. LANCASTER) Do you see
23 where it says no core samples were taken in
24 the M57B?

Page 581:01 to 581:08

1 A. Well, it wouldn't be M57B here.
2 Q. (BY MR. LANCASTER) Right. I'll

3 add that into it. Good point. M57B.
4 A. B and A.
5 Q. Okay. And M56A. But you do see
6 where it says no core samples were taken in
7 the M57B, right? Do you see those words in
8 the exhibit?

Page 581:10 to 582:14

10 A. Yes, I do.
11 Q. (BY MR. LANCASTER) Great. And
12 then above that in the first sentence it
13 says, Three further sands have been
14 identified in the TD hole section which
15 could -- which have a probable gas signature
16 on the neutron density logs colon, namely
17 M57B, M56A and M56F. Do you see that
18 sentence? It's the first sentence in that
19 paragraph.
20 A. Yes.
21 Q. Okay.
22 A. Again, you don't put the names
23 of the sands in your -- you can add names to
24 the sands. There is, like, taking from
25 context.
1 Q. Right, fair enough. You could
2 have M57B, M56A, and M56F. Okay.
3 And then the last bullet, do you
4 see in that --
5 A. Can I --
6 Q. Sure, go ahead. Sure.
7 A. Yes.
8 Q. Okay. And then if you'll look
9 in that same paragraph, the second-to-last
10 sentence reads, "Fluid typing of the sands is
11 uncertain and parameters are difficult to
12 assess accurately due to the thin nature of
13 these sands, being below confident log
14 resolution." Did I read that correctly?

Page 582:17 to 584:23

17 A. You took this sentence from the
18 report.
19 Q. (BY MR. LANCASTER) Okay, great.
20 Now, I want to turn your attention back to

21 Page 32 -- no, I'm sorry, 33, and I've marked
22 as Exhibit 3551 a color version of the July
23 26th -- July 26th, 2010 memo. I'm going to
24 put it up on the screen.

25 All right. So see where it's at
1 page -- says Schlumberger land well logs
2 analysis show M57B saturation?

3 A. Yes.

4 Q. And so let's -- let's go over,
5 as I orient myself. Okay. Now, it's
6 difficult to read -- bring it into focus a
7 little bit.

8 But can you make out where green
9 equals oil? Do you see that?

10 A. Green shading -- what you're
11 reference -- what --

12 Q. Yeah. So I'm looking at here,
13 oil, green.

14 A. Yes.

15 Q. All right. And --

16 MR. LANCASTER: I'm not sure the
17 automatic helps much.

18 Q. (BY MR. LANCASTER) And do you
19 have an understanding what the -- the blue
20 label stands for? It might be easier if I
21 just hand you -- might have to get a better
22 copy.

23 A. Could you ask your question --

24 Q. Do you know what blue stands
25 for?

1 A. Here this blue shading is for
2 moved water.

3 Q. Okay.

4 A. It looks like that.

5 Q. Okay. And so you understand
6 that both the dark blue is moved water and do
7 you see where its hard to make out, but the
8 light blue is water?

9 A. Yes.

10 Q. All right. Now, let's look at
11 the M56A sand, and that's shown by the
12 Schlumberger land tool. What color do you
13 see there?

14 A. For the M56A. Green.

15 Q. Okay. And then what color do
16 you see here and here for the M57B?

17 A. Dark blue and light blue.
18 Q. Okay. And then that's
19 consistent with the work which says the
20 Schlumberger land well logs analysis shows
21 the M57B saturation is moved water, correct?
22 A. Yes.
23 Q. Okay.

Page 584:25 to 585:15

25 Q. (BY MR. LANCASTER) Now, counsel
1 for Halliburton showed you Exhibit 3541,
2 which is a laminated sand analysis. Do you
3 remember that?
4 A. I'm not sure, but I remember
5 looking at that.
6 Q. Right. And he directed -- even
7 circled it. He directed your attention to
8 the M56A sand. There it is. And we see that
9 that is what color?
10 A. Green.
11 Q. And green, as on the other -- as
12 on the land figure was green was oil, and he
13 pointed out to you that green equals oil on
14 this laminated sands document as well,
15 correct?

Page 585:17 to 586:18

17 A. Can I have a look at the header
18 of this document?
19 Q. (BY MR. LANCASTER) Sure,
20 absolutely. In fact, let me just hand it to
21 you.
22 A. Yes, it's green.
23 Q. Okay. And while you have it in
24 front of you, in that same column there is a
25 top box that's blue. What does blue signify
1 on the laminated -- Schlumberger laminated
2 sand analysis?
3 A. Moved water.
4 Q. Moved water. Okay. So then
5 let's go -- can I have that back for a
6 minute?
7 A. (Witness tenders document.)
8 Q. So let's go up to the M57B sand.

9 There it is. And let me magnify it. Turn it
10 side ways maybe. There.

11 Please tell Judge Barbier and
12 the jury what color is the circle at the M57B
13 sand?

14 A. Can you please move up so I can
15 see the name of the sand? It's blue.

16 Q. Blue. Which according to
17 Schlumberger and Exhibit 3541 means moved
18 water, right?

Page 586:20 to 587:06

20 A. May I see the document again?

21 Q. (BY MR. LANCASTER) Please tell
22 the jury and Judge Barbier what blue means in
23 that little dot at M57B according to the
24 Schlumberger laminated sand analysis
25 Exhibit 3541. What does this blue mean?

1 A. The blue means moved water.

2 Q. So thanks to the efforts of
3 Halliburton we now have two independent
4 Schlumberger analysis tools, the Elam
5 analysis and the laminated sands analysis and
6 they both label M57B as moved water, correct.

Page 587:09 to 594:16

9 Q. (BY MR. LANCASTER) They're both
10 blue, right?

11 A. They're both blue.

12 Q. Okay. Okay. Now, if you'll put
13 in front of you 3540, which is the final
14 print of the Hostile Litho Density Tool
15 Compensated Neutron RT Scanner. Do you have
16 3540 in front of you? That's 3540, you got
17 it. This one has the exhibit sticker on it.

18 A. Okay.

19 Q. And I'm going to ask you to open
20 it up to the page that goes from 18,100 to
21 18,200 feet. Can you go to 18,100 to
22 18,200 feet?

23 A. Yes.

24 Q. All right. And I'll display it
25 here. We don't need the zone. We can just
1 go that far. Now, I believe there -- you

2 testified a little bit about it, but I don't
3 know if you were asked the direct question,
4 but what does the yellow that we see here up
5 at 18,100 to 18,200, what does the yellow
6 signify, if anything?

7 A. Yellow shading is a area shaded
8 between -- by the overlay density log and
9 neutron porosity log. Neutron porosity
10 together in a specific scale, they overlay,
11 and there is a negative -- we use the term
12 negative -- negative overlay, which usually
13 reflects shales, and there's positive
14 overlay, which usually -- usually interpreted
15 as gas, and they also can just overlay
16 without, which usually indicates oil or
17 what -- or wet sand.

18 Q. Okay. But I'm asking
19 specifically about the color yellow. Does
20 that tell you anything when you are reviewing
21 a printout like this? Does it -- what's its
22 significance, if any?

23 A. That color would -- it's
24 significant -- it's a significant -- it's
25 kind of the things that -- that you pay
1 attention first when you start to analyze
2 logs to -- to identify hydrocarbon bearing
3 zones and together with high resistivity. So
4 you never look at the one thing when you
5 interpret the logs. You -- things on the --
6 care to several logs together.

7 Q. Okay, fair enough. But you said
8 yellow is significant for some reason. I'm
9 trying to get an understanding of what, if
10 anything, does the color yellow, what's it
11 telling you, if anything? What's it suggest,
12 if anything?

13 A. In general, this crossover will
14 lead me to the idea that that formation is --
15 is a gas-bearing or hydrocarbon bearing, oil
16 bearing. It's probably dissolved gas with a
17 big round of gas. That would take my
18 attention when I -- and I see the crossover.
19 It's not necessary always shaded with the
20 same color. It's what I would be looking for
21 looking at -- when I'm looking at the neutron
22 density log.

23 Q. Okay, fair enough. So then
24 let's move up the wellbore. Let's move to
25 the -- what's been labeled. So we see here,
1 and it's been circled, you went through this
2 exercise, M56F has yellow. Do you see that?
3 A. Yes.
4 Q. Okay. M56B has yellow, correct?
5 A. Yes.
6 Q. M56D does not.
7 A. It does not, but probably
8 make -- makes sense to mention that also
9 there is -- when they're getting close to
10 each other and overlay it's sig- -- it's a
11 signature of clean sand. When they're
12 getting together and -- but not overlay, it's
13 probably evidence of shale in the -- in the
14 formation.
15 Q. Okay, fair enough. And then you
16 were asked about M56A, which is the sand you
17 identified as the top hydrocarbon?
18 A. Yes.
19 Q. And you see yellow there?
20 A. Yes.
21 Q. Okay. And then you go all the
22 way up to M56 -- M57B. Okay. And do you see
23 any yellow?
24 A. No.
25 Q. Okay. Now, I want to switch
1 gears on you. Let me ask you about -- there
2 is some questions about realtime data, and I
3 just want to make sure that the record is
4 clear. Generally speaking, when you were --
5 when there was drilling going on part of your
6 role from time to time was to look at
7 realtime data; is that fair, just to get us
8 oriented?
9 A. Yes, I looked at the realtime
10 data.
11 Q. Okay.
12 A. -- while drilling.
13 Q. But are you generally familiar
14 with the fact that there are a number of
15 different screens or data points that you can
16 look at that are available in realtime?
17 A. There are different layouts of
18 the --

19 Q. Right.

20 A. -- different data

21 "resolizations."

22 Q. Right. As a petrophysicist
23 while drilling was going on what are the
24 specific screens or metrics that you would
25 focus on in your work as a petrophysicist in
1 terms of looking at realtime data?

2 A. I -- I created my own way out,
3 which included gamma ray, rate of
4 penetration, depth, resistivity, three --
5 three different depth of the investigation of
6 resistivity and, also, both attenuation and
7 phase. I don't remember exactly was
8 attenuation and bioface and high and low
9 frequency with combination of -- for
10 different whole sizes I use different, sonic
11 log, gas data, including total gas and the
12 gas chromatograph data from C1 to C5. The
13 lithology description in -- in -- in words.

14 But before that lithology track
15 where -- there was percentage of every
16 lithology is reported as the cuttings is
17 analyzed.

18 Q. Anything else -- anything else
19 in terms of realtime data?

20 A. Are you asking about Macondo
21 only?

22 Q. Yes, ma'am.

23 A. That's about it. And I also
24 use -- from time to time I use different
25 scale, depth scale, from bigger, from
1 quite -- I always confuse, small -- when you
2 can see lots of data and you are able to see
3 all the lithology changes and what character
4 you can -- how the log character changes, and
5 then I would use to do the -- zoom in to --
6 changing the depth scale to follow what's
7 going on within last hour, two hours --

8 Q. Right.

9 A. -- of drilling.

10 Q. Okay. Then once total depth had
11 been reached, I think it was 18,360 feet, and
12 drilling had stopped, did you continue to
13 look at those same metrics or -- or screens
14 in your role as a petrophysicist?

15 A. No, I didn't.

16 Q. Okay. And after you left the
17 rig on April 13th, 2010 was there -- did
18 you -- do you recall ever looking at any
19 realtime data that was being streamed off the
20 Macondo well?

21 A. No, because there is -- there
22 was memory data available by -- by that
23 point, and I would -- if I wanted to -- to
24 get look at the data, I would look at the
25 map, amendment data.

1 Q. Right. And that was going to be
2 my next question, which is after all the
3 wirelining had been done and the side wall
4 cores had been done and everything was posted
5 to WellSpace would there be any reason for
6 you as a petrophysicist to be accessing
7 realtime data being streamed off of the
8 Macondo well, say, on April 19th or
9 April 20th? Would you have any reason to be
10 looking at that data in your role as a
11 petrophysicist?

12 A. I do not see there is reason.

13 Q. Right.

14 MR. LANCASTER: Ms. Skripnikova, thank
15 you, that's all the questions I have.

16 THE WITNESS: Thank you.