UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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WEATHERFORD U.S., L.P.
Petitioner

vs.

HALLIBURTON ENERGY SERVICES, INC.
Patent Owner

_____

Case No. IPR2024-00990
U.S. Patent 11,333,007

_____

****

REMOTE ORAL AND VIDEOTAPED DEPOSITION OF
MICHAEL CHAMBERS, SR.
SEPTEMBER 5, 2025

****

ORAL DEPOSITION of MICHAEL CHAMBERS, SR., produced as a witness at the instance of the Patent Owner, and duly sworn, was taken in the above-styled and numbered cause on September 5, 2025, from 9:03 a.m. to 10:41 a.m., before Mendy A. Schneider, CSR, RPR, in and for the State of Texas, recorded by machine shorthand, remotely at the offices of MENDY SCHNEIDER, LLC, The Woodlands, Texas, pursuant to the Federal Rules of Civil Procedure and the provisions stated on the record or attached hereto; that the deposition shall be read and signed.

REMOTE APPEARANCES

FOR THE PETITIONER:
DOUGLAS R. WILSON, ESQ.
MONICA ARNOLD, ESQ.
ARMOND WILSON, LLP
13785 Research Blvd, Suite 125
Austin, Texas 78750
(512) 267-1663
Doug.wilson@armondwilson.com

FOR THE PATENT OWNER:
CHAD C. WALTERS, ESQ.
BAKER BOTTS L.L.P.
2001 Ross Avenue, Suite 900
Dallas, Texas 75201
(214) 953-6511
chad.walters@bakerbotts.com

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(No exhibits were marked.)

(REPORTER'S NOTE: All quotations from exhibits are reflected in the manner in which they were read into the record and do not necessarily denote an exact quote from the document.)

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MICHAEL CHAMBERS, SR.,
having been first duly sworn, testified as follows:

EXAMINATION

BY MR. WALTERS:

Q. Good morning, Mr. Chambers.

A. Good morning.

Q. Can you state your name for the record.

A. Michael Roy Chambers, Sr.

Q. And where are you physically located right now?

A. I'm located at 11328 County Road 4102, Lindale, Texas 75771, in my study.

Q. Okay. Are you by yourself?

A. I am.

Q. You -- you understand you've been sworn to testify truthfully in this deposition today?

A. Yes, sir.

Q. And is there any reason you cannot testify truthfully today?

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A. No, there is not.
Q. What did you do to prepare for today's deposition?
A. I reviewed my first, second, and third declaration. Reviewed some of the patent and met with my attorneys a couple times.
Q. Okay. When did you meet with your attorneys?
A. Thursday and Friday -- or Wednesday, Thursday.
Q. Okay. And about how long did you meet with them?
A. A couple hours. Two to three hours.
Q. Total Thursday and Friday?
A. No. Each day about a couple of hours.
Q. Okay. Wednesday and Thursday?
A. Yes.
Q. And with whom did you meet?
A. Monica Arnold and Doug Wilson.

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Q. You submitted three declarations in this proceeding?
A. I have.
Q. And each of those declarations includes your accurate opinion?
A. They do.
Q. You have access to the documents and exhibits that have been used in this IPR proceeding?
A. I hope I have access to all of them, yes.
Q. Clean versions?
A. I hope so, yes.
Q. Okay. You're not relying on any notes -- any notes in front of you?
A. No. No, I may take some notes, but I have no notes.
Q. Okay. I would like to start with Exhibit 1006, which is the Yeh 2 reference.
A. Okay. Let me see if I can find it.

Okay. The IPTC paper?

Q. Yes.

A. Okay.

Q. And specifically, I would like to look at Figure 7.

A. Okay. I'm sorry. The version I'm looking at is -- has some highlights. I guess I need to zap this version. Let me find a clean version.

Q. I'm not concerned about that.

A. Okay. All right. Well, then, Figure 7.

Q. Yes.

A. Okay. It is the slurry -- full slurry down the tube?

Q. Yes.

A. Okay.

Q. And in Figure 7, Yeh 2 shows two open-ended shunt tubes in Case A and Case B, right?

A. Yes. I think that's a -- yes.

Q. And it shows a close-ended

shunt tube in Case A?

A. Yes.

Q. Is it fair to say that the closed-ended shunt tube in Case C has more uniform flow through the nozzles over the length of the packing tube?

A. No. No. I would say the -- the first nozzle has -- appears to have more flow, and then it decreases as it goes down the tube.

Q. Okay. Is it fair to say that the nozzle flow in Case C is more uniform than that in Case A or B?

A. Yes.

Q. Okay. Can you turn to Page 4 of that exhibit.

A. Okay.

Q. And specifically in the second paragraph, do you see the sentence in the middle of that paragraph saying "similar to Case A"?

A. "Similar to Case A, the flow

from the portholes decreased towards the shunt end."

Q. Yes.

And then can you read the next two sentences.

A. "Case C is -- the increase in pressure at the closed end and the flow out of the last porthole was a result of the Bernoulli effect."

(Discussion off the record.)

(BY MR. WALTERS)

Q. Yeh 2 describes here that because of the closed-ended characteristic of Case C the flow through the nozzles is more uniform than that of Case A and Case B?

A. I don't know that -- you know, these are all at a point in time that eventually as you -- you know, you have flow out the open-ended section. And when that packs off, then flow goes through the nozzle.

So Case A and B will -- at one point in time, they will probably more look

like Case C because, you know, for the cross-sectional area is so great going out the open-ended, but that will eventually pack off as you go through the operation.

He's talking about at the start of the operation here what is going on.

And as you go through time, it's going to pack off. So it's going to look more -- Case A and B will look more like Case C as the job progresses.

Q. You don't think Yeh 2 in these sentences is stating that Case C is providing more uniform flow through the nozzles?

A. I think Case C will probably have more uniform nozzle -- flow because the -- the open-ended section is so large, you know.

And the nozzles are like a 16th of an inch.

And you're talking about, I don't know, inch and a half cross-sectional area going out the end of the tube, so -- but

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he's talking at the start of the job here.

But as he goes over, the -- the other is going to plug off. So they're going to look more like that.

Q. And Yeh does state that the characteristics of Case C promotes uniform shunt packing across the 40-foot interval?

A. Let's see.

Yeah. And he's referring back to Figure 4B in the plugging problems that he had there, yes.

Q. Do you agree that the characteristics of Case C promote uniform shunt packing across the 40-foot interval?

A. I think they would be more uniform. I mean, even from his arrows, you see that they're not perfect. You don't have the exact same flow going out of each nozzle.

Q. Can you turn to Figure 9, please.

A. Okay.

Okay. Figure 9 where he has

the manifold and different tubes?

Q. Yes.

A. Yes.

Q. The packing tubes shown in Figure 9 are closed-ended?

A. I would assume that. He has no arrow going out them.

Q. And they're closed-ended because they do not connect to the manifold that their downstream ends?

A. They're closed-ended because I think they're closed.

In addition, they do not connect to the manifold. I think we'll probably see it.

Q. Can -- can you look at Figure 13?

A. Okay.

Q. And Figure 13 also shows closed-ended packing tubes that do not connect to the downstream manifold?

A. Yes.

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Q. I would like to turn to the Bonner reference, which is Exhibit 1016.

A. Okay. Let me get it.

Okay. Let me see if I can find a clean...

Okay. I have the Bonner reference.

Q. Specifically, I would like to look at Figure 8.

A. Okay. Okay. I -- what's Figure 8? 10, 9 -- 8. Okay.

Q. Figure 8 of Bonner shows shunt tubing including a transport tube and a packing tube?

A. Yes.

Q. And in the transport tube and the packing tube, are both connected to an upstream junction, which is labeled a box crossover?

A. Yes.

Q. And it -- it's your opinion that the box crossover interconnects the

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packing tube to the upstream shunt tube assembly?

A. Yes.

Q. And the downstream junction is labeled a pin crossover?

A. Yes.

Q. And Figure 8 of Bonner also shows a close-ended packing tube?

A. It doesn't say it, that it's closed.

Q. Okay. The downstream end of the packing tube is not connected to the downstream junction?

A. No, it is not.

Q. Okay. I would like to turn to your third declaration, which is Exhibit 1052.

A. Okay. Well, before I forgot to add -- I guess you didn't ask me -- a couple of minor changes to my third declaration.

Q. Okay.

A. I forgot to get that in.

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Q. Yeah. Let's go over those now.
A. Okay.
The first one is in Paragraph 39. It is on Page 16, PDF Page 20.
And I would like to change the statement: "I provide a summary of the reasoning upon which I believe propose substitute claim 26, 35, and 36 of the '007 patent are invalid."
Should read: "I provide a summary of the reasoning upon which I believe the proposed substitute claim 26, 35 and 37 of the '007 patent are invalid."
Q. Okay.
A. Also on Paragraph 46...
(Discussion off the record.)
A. Okay. On Paragraph 46, it is on Page 20, PDF Page 24.
The statement: "In my opinion that claim 26 as a whole should have been obvious based on the knowledge of a POSITA."
Should read: "It is my opinion

that claim 26(b) was disclosed or suggested by Yeh in view of Yeh 2."

And those are the only changes.

(BY MR. WALTERS)

Q. Okay. Thank you.

MS. ARNOLD: Chad, if you want a hard copy of that, we can also provide it, but sounds like you got it.

MR. WALTERS: I think it's fine. Thanks.

(BY MR. WALTERS)

Q. Can we turn to Paragraph 74.

A. Okay.

Q. And specifically, like to focus on the figure that you provided, the illustration with flows A, B, and C.

A. Yes.

Q. In this visual, you illustrate flow C as being much less than flow B, right?

A. That is correct.

Q. Could flow C be larger than

flow B?

A. No.

Q. Why not?

A. Because you have leakoff all down the -- through the system. Each one of the nozzles has -- will leak a little bit of fluid.

And so as Yeh has described in his paper, as flow goes down, you have fluid leakoff through your nozzles and the slurry concentration increases.

So the volume of the fluid decreases. Of course, the pressure decreases due to friction, due to loss through the nozzles, leakoff through the nozzles.

Q. At the time of the '007 patent, were there shunt tube systems in which flow C would have been larger than flow B?

A. I am not aware of any.

Q. Okay. And you're not aware of any prior art that shows flow C being larger than flow B?

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A. I'm not aware even back to the Lloyd Jones initial work. This leakoff phenomenon was known that there would be nozzle leakoff and slurry concentration would increase, and so total flow would decrease.

Q. Can we turn to the Hurst reference at Exhibit 1013.

A. Okay. Let me find it.

All right.

Q. I would like to look at Page 3 of that reference.

A. Okay.

Q. And specifically in the section titled "Concentric versus eccentric design."

A. Okay.

Q. I think we talked about this before you -- you pronounce -- I'm saying eccentric. Do you say eccentric?

A. I probably say eccentric.

Q. Is there -- is that the right way to pronounce it?

A. It is in Lindale, Texas.

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Q. Okay. I need to get it out of my head because that's how I saw it the first time, and I can't get myself to change it.

Okay. And in the second paragraph of that section, Hurst states that is the key advantage of the eccentric design is the increased base pipe size allowing, for example, 5.5-inch base pipe inches in an 8.5-inch -- strike that.

Hurst states the key advantage of the eccentric design is the increased base pipe size allowing, for example, 5.5 inches base pipe in an 8.5-inch open hole.

A. Yes.

Q. And do you agree with that statement?

A. No.

Q. You don't?

A. I think there are other examples where we found that the eccentric, or eccentric, however you want to say it, and concentric typically have the same base pipe.

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Q. Okay. Can we turn to your second declaration, Exhibit 1044.

A. Okay.

Q. Specifically Paragraph 45.

A. You want PDF page, that's not --

Q. I don't know PDF page, but the exhibit page is 21.

A. Okay.

You want Paragraph 45?

Q. Yes.

A. Okay. I'm there.

Q. Okay. And in this paragraph at the beginning, you state that the POSITA would understand the eccentric orientation would provide for a larger base pipe for the primary flow path.

A. It depends on the eccentric, concentric design, you know.

Yeh had concentric designs, and it only had two tubes. So if you use Yeh's two-tube concentric design -- and I think

also in -- I forget the paper where they actually took two tubes and wrapped it around, which is a concentric design.

And in that design as well, they only had two tubes, and it was the same base pipe.

So it -- it depends on what version that you're looking at. I don't -- I don't think it's an overall arching statement to say that although Hurst said it, I think he was thinking about, you know, a six or seven tube or something design.

But, also, when I went back and I looked at Yeh's design, it looked like he was using the same base pipe as what Bonner is using.

Q. And that sentence that we just cited from Hurst, you cite that sentence in this paragraph in support of your conclusion in this paragraph?

A. I cited it that Hurst said that.

Q. Okay. Lets go back to Hurst.
A. Okay.
Q. So Hurst said that, but you don't agree with it?
A. I think -- you know, it depends on what design you're looking at, what Hurst is looking at.
If Hurst is -- you know, I think Hurst felt that that may be an overall arching, but I -- I don't agree with that totally, no.
Q. Okay. Do you agree that the eccentric design allows for an increased base pipe size?
A. No.
Q. Okay.
A. It can be the same.
Q. Okay. So I just want to parse this sentence -- the sentence says: "The key advantage of the eccentric design is the increased base pipe size." Correct?
A. That's what Hurst felt.

Q. Okay. Do you agree that one advantage of an eccentric design is an increased base pipe size?

A. It could be or it could also be a concentric could have a larger base pipe than an eccentric, depending on how you do the tubes and the size of the tubes and how you build it, the number of tubes. It depends.

Q. So you don't think that an eccentric design allows for an increased base pipe size?

A. No. I don't think it's an overall arching statement, no.

Q. Can we look at Figure 5.

A. Okay.

Q. And this is of Hurst, Exhibit 1013.

A. Okay.

Q. Hurst -- in Figure 5 of Hurst, Hurst compares the dimensions of eccentric and concentric screens?

A. Yes.

Q. And in this figure, Hurst is comparing a 2-by-2 concentric screen to a 2-by-2 eccentric screen?

A. He is comparing those two with the same rectangular tubes.

Q. Okay. And Hurst shows that the outside diameter of the base pipe with the 2-by-2 eccentric screen is less than the outside diameter of the base pipe with a 2-by-2 concentric screen?

A. Yes. Hurst shows that if you use the exact same tubes that that would be the case, but Yeh and others don't use the same size tubes.

And, also, if you -- you can take -- well, the tube you -- if you look right down at Figure 7, where he wraps it around, that is a 2-by-2 design that is concentric, so Hurst shows a 2-by-2 concentric design on the same base pipe.

In Figure 7.

Q. But not in Figure 5?
A. No, not in Figure 5.
Q. Okay. I would like to turn to the Barry reference, which is Exhibit 1027.
A. Okay. Let me get it.
Okay. I have it.
Q. Specifically at Page 3.
A. Okay.
Q. And specifically in the paragraph under the title "Sand control."
A. Okay.
Q. In this paragraph, Barry is describing a 5.5-inch base pipe in a concentric screen?
A. Let me read the...
In that -- in that section I don't see where he says what size base pipe he has.
No, wait. Let's see. It's 5.5-inch base pipe. Okay. All right.
Q. And Barry says the outside diameter of the concentric screen is

7.76 inches?

A. Yes.

Q. And Barry compares that to the 7.65 pipe inch [verbatim] outside diameter of currently available alternate path screens?

A. Okay.

Q. And those currently available alternate path screens are eccentric screens?

A. I would think the alternate path refers to the A style design. Alternate path is a Mobil registered trademark name for that system as I -- as I recall.

Q. Okay. He uses the term "currently available" there.

Do you see that?

A. Yes.

Q. And then if you look in the previous page, Page 2.

A. Okay.

Q. Of the right column. There's a sentence that starts "Although routinely deployed"?

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A. Okay. Yes.
Q. And he refers to alternate path screens currently available?
A. Yes, sir.
Q. And -- and then he's got some characteristics. And those are characteristics or limitations. He calls them limitations. Those are limitations of eccentric screens that were currently available?
A. Correct.
Q. Okay.
(Discussion off the record.)
MR. WALTERS: Go off the record one second.
(Break from 9:33 a.m. to 9:41 a.m.)
A. Sitting here, Mr. Walters, could I clarify my previous statement a little bit?
(BY MR. WALTERS)
Q. Sure.
A. As -- as I recall, alternate

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path is the trademark that -- way back when Lloyd Jones invented the shunt tube system, that was the trademark Name that Mobil used.

And so early on I believe that name referred to a -- well, at one time a one-shunt tube design, you know.

And then -- but it was just an alternate path. It was an ability to do that.

And when Yeh came up with the concentric design, I think they still used that name, but I'm not certain. Or if they -- I would have to go back and look.

So -- so what I believe here when we're talking on the Exhibit 1027, the alternate path that they're talking about is the -- the 2-by-2 eccentric design.

Q. Okay. So going back to Page 3 in that paragraph titled "Sand control," Barry is comparing 7.76 outside diameter of a concentric screen to 7.65 outside diameter of an eccentric screen?

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A. Yes, which essentially those two are the same.

When you look at manufacturing tolerances and the API 5CT, those would both be essentially the same.

Q. Okay. So you treat 7.76 inches as the same as 7.65 inches?

A. I'm saying -- you know, and I discussed in my declaration that there are -- there are tolerances that the API, you know, gives you. And that things vary slightly.

Because the manufacturers don't build everything -- you know, I bet if you went and checked every screen there or every piece of shroud, they are not 7.76. They are -- they are a tolerance.

And so those are so close that I would assume that those are within the same tolerance.

Q. And you treat them as the same?

A. Pretty much, yeah.

Q. Barry says that it's concentric

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screen having a 5.5-inch base pipe as shown in Figure 2?

A. Yes.

Q. And this is a 6-by-3 concentric screen?

A. Barry says -- let's look at Figure 2.

Okay. Yes.

Q. And -- and the alternate path eccentric 2-by-2 screen is shown in Figure 1?

A. Yes.

Q. So comparing Figures 1 and Figure 2, which appears to have thicker walls in the shunt tubes?

A. Which has thicker walls in the shunt tube? Well, these are not -- I don't think these are drawn to scale, so I -- I don't know.

Q. Why don't you think they're drawn to scale?

A. Well, it doesn't say they're drawn to scale, so I don't know.

Q. Does -- do the -- are the walls shown in Figure 1 for the shunt tubes of the eccentric screen thicker -- shown as thicker than the walls of the shunt tubes in the concentric screen in Figure 2?

A. If you just compare the two figures, yes.

But, like I say, I don't know if that's to scale.

Q. Can you turn to Page 4 of Barry.

A. Okay.

Q. Specifically in the section on the left column called "pressure integrity."

A. Okay.

Q. And in the second paragraph of that section, Barry describes its shunt tube pressure test?

A. Yes, second sentence. Okay.

Q. And Barry states that its shunt tube system needed to be rated higher than 6,000 psi?

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A. For the particular example he was working on, that needed to be, I believe.

Q. And then later down in that same paragraph, Barry states that the entire system was pressure tested to 10,000 psi?

A. Yes.

Q. When it only need to be rated to 6,000 psi, why would Barry want to test to ensure its shunt tube system could withstand 10,000 psi?

A. That it could then pack longer intervals or he could pump at a higher rate.

His 6,000 psi is based on 4 barrels per minute. If he wanted to pump 5 barrels per minute or 6 barrels per minute, he would needed a higher pressure-rated system.

Q. Does Barry state that it's testing to 10,000 psi so that it could pack a longer interval or pump more barrels per minute?

A. I mean, this is Petroleum

Engineering 101. You know, I mean, all casing we -- you know, you have a working pressure, you have a test pressure.

You know, you -- it -- you commonly test -- you commonly want to test to higher than whatever you're going to require. That throws in a safety factor, you know, for you. You have the ability to use a safety factor.

So I don't see it's anything uncommon about testing a system to 10,000 pounds. It's a brand-new system. He wanted to know what it would be good for.

Q. Is implementing a safety factor common when rating the pressure characteristics of a shunt tube system?

A. You know, every operator treats safety factor different. You know, every company uses a different safety factor at Mobil. Way back, we didn't even use safety factors.

We had a system based on

probability of failure where we had went out and measured actual tubulars.

So the -- the industry does not agree on that, I would say, safety factors.

Q. Okay. If you were to determine a safety factor here based on rating 6,000 psi and pressure testing to 10,000 psi, would that safety factor be 1.67?

A. Yeah. That would be very high. That would be extremely high.

Q. Would it be 1.67?

A. I would have to calculate -- it's probably going to be about that.

Q. 10,000 psi divided by 6,000 psi?

A. Right. Yeah.

MR. WALTERS: We've been going almost an hour. Is it a good time for a break?

MS. ARNOLD: Sure.

THE WITNESS: Whatever.

(Break from 9:50 a.m. to 10:03 a.m.)

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(BY MR. WALTERS)

Q. I would like to look at your first declaration, Exhibit 1003, Mr. Chambers.

A. Okay.

Q. Specifically at Paragraph 154, and that's on exhibit Page 76.

A. Okay.

Q. You're describing the Bonner reference here in this paragraph?

A. Yes.

Q. Okay. And you state here that the main basis of Bonner's shunt tube design was to keep it functionally the same as existing industry proven designs?

A. I believe Bonner says that, yes.

Q. And in Paragraph 155 of your declaration, you quote Bonner, that Bonner design uses the same size, the same geometry of the transport and packing tubing, the same exit port spacing and arrangement as

conventional 2-by-2 eccentric designs?

A. I say that, yes.

Q. Let's look at Bonner, which is Exhibit 1016.

A. Okay.

Q. And looking at Page 4, please.

A. Okay.

Q. In Page 4, Bonner says that its shunt tube system is very similar to currently available systems on the market?

A. Yes, I read that.

Q. Okay. But it says that it makes multiple design changes relative to currently available screens?

A. Yes.

Q. Okay. And then Bonner lists the benefits of those design changes.

And they include increased reliability after rig installation in eliminating the danger of small tools and parts falling into the well during system installation?

A. Okay.

Q. Would you agree that Bonner's design changes achieve those benefits?

A. He says they did.

Q. Do you think they did?

A. Yeah. I think most of his design changes were around the connection. And I think that was the -- the real focus of his design.

And by improving the connection in making it quicker, simpler to connect, he was able to make it more robust and therefore increase the pressure rating of the system.

Q. And those improvements made it easier to install the eccentric screens?

A. Yes.

Q. Bonner does not mention changing shunt tube wall thickness as one of the design changes or improvements; is that right?

A. He does not list those there, no, that's correct.

Q. Okay. Does Bonner ever describe as a benefit that its eccentric screen could withstand higher working pressures than conventional eccentric screens?

A. Bonner goes through and tests -- shows test results where his test results were higher than what was on the market at that time.

Q. Does Bonner state that the test results are higher than what's on the market at the time?

A. I don't know if he specifically states that but his goal, Bonner's entire goal, he says, is to get to 5,000 psi.

And you see that 5,000 psi repeated on many, many figures here.

Q. Does Bonner ever focus on higher pressure ratings when describing its improvements over existing screens?

MS. ARNOLD: Objection; form.

A. I don't think he specifically

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shows that, but he -- or states that, but his data supports that his are.

(BY MR. WALTERS)

Q. Okay. I would like to look at Pages 11 and 12 of Bonner.

A. Okay.

Q. And at Pages 11 and 12, Bonner describes pressure testing its shunt tube system?

A. Yes.

Q. And at Page 12, Bonner states that in one of its tests the shunt tube failed below 5,000 psi?

A. Yes, I believe Bonner says that he -- they thought they had some metallurgical problems with their samples.

Q. And Bonner advises using a 1.33 safety factor for a working burst pressure?

A. I think Bonner uses that in one case here, but he didn't show that through all of his cases that he talked about.

Q. Bonner says that a 1.33 safety

factor was judged to be advisable for a working burst pressure?

A. Well, that's a Bonner decision.

Like I say, at Mobil we didn't even use safety factor. We used potential chance of occurrence of failure like is used in the aircraft industry where they -- whether it's 1 million chance of failure or 500,000 or 5 million. We use chance of failure.

So everybody in the industry uses something a little bit different.

Q. Okay. If -- if Bonner -- I would like to understand the 1.33 safety factor as it would be implemented by Bonner.

So does that mean that for a shunt tube system that could achieve 5,000 psi in testing that Bonner advises it only to be used to withstand pressure of 5,000 psi divided by 1.33?

A. I believe, one, for Bonner you would use the actual failure pressure and

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divide that by 1.33.

But Bonner's whole goal was to get to greater than 5,000 psi working pressure for the system, and I think he achieved that.

Q. Where does Bonner say working pressure?

A. Well, he doesn't say working pressure but --

Q. He says burst pressure?

A. Burst pressure, design pressure -- design specification. What he says is design specification requirement value, and that was 5,000 psi.

Q. Burst pressure?

A. No, that's the design. So it must -- the burst must be higher than the design.

Q. Okay. But Bonner says the overall testing substantiated the goal rating of 5,000 psi burst pressure on Page 12, correct?

A. I believe so, yes.

Q. What's the difference between a burst pressure and a working pressure?

A. Burst is the pressure that it actually fails at or starts to fail at. Where working pressure is some pressure below that.

For example, in wellheads, you typically have a 10,000 psi working pressure and a 15,000-pound maximum pressure.

So every system out there has a little different way of grading those sort of things.

Q. Would a POSITA expect a shunt tube's systems operating pressure rating to be below its burst pressure rating?

A. Well, I mean, you can take it right up to burst. Some people, you know, would take it right up to burst so...

Q. So a POSITA would expect it to be at or below the burst pressure rating?

A. I would believe so, yeah.

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Q. So at Page 12 where Bonner states the overall testing substantiated the goal rating of 5,000 psi burst pressure, however, a 1.33 safety factor was judged to be advisable. When -- when Bonner states that, is Bonner suggesting to implement a 1.33 safety factor, which is 5,000 divided by 1.33?

A. I believe that's what he's suggesting.

However, like I say, everybody in the industry picks something else.

But I think, here again, his goal was to rate the system to 5,000 psi and people use whatever safety factor they want to use.

Q. You do not address this safety factor in your declaration when discussing Bonner, correct?

A. I don't believe so, no.

Q. Okay. I would like to turn to Exhibit 1044, which is your second

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declaration.

A. Okay.

Q. Specifically at Paragraph 63.

A. Okay.

Q. Some of the limitations of the substitute claims require that the first sand screen assembly and the second sand screen assembly both be eccentric screens?

A. Yes.

Q. Specifically, one example is in 27(b)?

A. 27(b)? What are we talking --

Q. Yeah. I'm sorry. I meant to turn to Paragraph 63 of your 1044.

A. Okay. I'm -- oh, okay. In claim 27(b) is what you're saying?

Q. Yes. Yes.

A. Yes, in claim 27(b).

Q. And as I understand for this limitation, you rely on an eccentric screen from the Bonner reference, which was rated to 5,000 psi burst pressure?

A. I don't think it's rated to 5,000 psi burst. I think it's rated greater than 5,000 psi burst.

Q. Why not rely on a working or operating pressure as opposed to a burst pressure rating?

MS. ARNOLD: Objection; form.

A. Well, here again, everybody picks what pressure they will go up to. That is something routinely every company is different.

Some people will go to burst, you know. Some people choose a safety factor, so it's a personal decision.

(BY MR. WALTERS)

Q. And so it's your personal decision to rely on a burst pressure rating?

MS. ARNOLD: Objection; form.

A. I use -- it depends on what the -- you know, I'm kind of more like the old mole. It depends on what you're designing for.

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If you're designing for a well in West Texas out in the middle of nowhere, you'll take a very low probability of failure.

If you're designing for something in the middle of Los Angeles or on an offshore platform, you're going to use a whole different probability of failure.

So I design everything depending on its intended use.

(BY MR. WALTERS)

Q. Okay. But specifically for this combination, for claim limitation 27(b), you're relying on Bonner's burst pressure of 5,000 psi?

A. Well, here again, Bonner had a pressure greater than 5,000 psi burst in his system -- to enable him to rate his system to 5,000 psi.

So I'm relating [verbatim] on Bonner built a system that he tested to in excess of 5,000 psi.

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Q. Burst pressure?

A. Well, no, you just tested it to greater than five- -- I don't know that he took everything to burst.

Q. Are you relying on 5,000 psi working pressure in Bonner?

A. I'm relying on Bonner saying he -- he tested his system -- his design was to get to 5,000 psi, above 5,000 psi. And only when he talks about the shunt tube does he use a safety factor.

When he talks about all -- or the other things, he doesn't use that safety factor.

So I don't know why he picked this one item to try to throw a safety factor in.

Q. But when he discusses 5,000 psi, he's -- he references specifically burst pressure, correct?

A. Well, here again, if you look at all his charts, they're all in the excess

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of 5,000 psi. They don't fail at 5,000 psi.

Q. Let's look at -- if you'll turn to Paragraph 69 of Exhibit 1044.

A. Paragraph 69. Okay.

Q. You conclude here that one of skill in the art would be motivated to substitute Bonner's eccentric screen in place of Yeh's concentric screens, correct?

A. Yes.

Q. Okay. Can you turn to Paragraph 71.

A. Okay.

Q. And here you address Yeh's requirement of a 6,500 psi pressure differential, right?

A. Yes.

Q. And given that Bonner's screen only went to 5,000 psi, to get up to 6,500 psi, as required by Yeh, a POSITA would thicken the walls of Bonner's eccentric screen, correct?

A. He could thicken the wall or he

could change the metallurgy, yes.

A POSITA would know they could do that.

Q. If Bonner was rated to, say, 3800 psi with a safety factor that Bonner describes?

A. I'm sorry. I don't know what the question was.

Q. Okay. Well, strike that.

If Bonner was rated to 5,000 psi, then why not just use Bonner's eccentric screen in place of Yeh's eccentric screen in order to reduce complexity of the system?

A. I think he would. If you had an application that only went to 5,000 psi. If you had an application of higher, well, then maybe you would need to increase Bonner's rating.

Q. Well, if you had an application like Yeh that required 6,500 psi, why not just replace Yeh's eccentric screen with

Bonner's eccentric screen such that you'd only have two screen systems? You would have Bonner's concentric screen in combination -- strike that.

You would have Yeh's concentric screen in combination with Bonner's eccentric screen?

MS. ARNOLD: Objection; form.

A. I'm not certain I understand the question, but I think you're trying to say you take a system that's rated to 6,500 psi or above 6,500 psi for a certain section of the wellbore, and then a section of Bonner's that's rated for a different pressure for another, and a lower pressure system for another, and maybe there is even another 2,000 psi system or something for the bottom, would that -- is your question would that be theoretically possible to do that?

(BY MR. WALTERS)

Q. Let me ask it -- let me ask it a different way.

A. Okay.

Q. So as I understand your combination of Yeh and Bonner, you use Yeh's eccentric screen relate -- rated to 3,000 psi at the downstream end, then you use Bonner's eccentric screen, which is rated to 5,000 psi, such that you would have two eccentric screens, correct?

MS. ARNOLD: Objection; form.

A. Yeah, here again, I'm not understanding, but if the question is, as I understand it, if you had a system that only required 5,000 psi or 5,001 psi, could you use Bonner's system for a certain section of the hole and then what was conventionally available at that time for the lower pressure section? Is that what you're asking?

(BY MR. WALTERS)

Q. Let's look -- let's look at Yeh's 6,500 psi requirement.

A. Okay.

Q. And in Paragraph 69, you state

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that a POSITA would be motivated to substitute Bonner's higher pressure rated eccentric screen in place of Yeh's concentric screen, correct?

A. Yes.

Q. That would still leave Yeh's eccentric screen at the downstream end?

A. I -- or are we saying that we would have -- are you saying you would have Yeh's 6,500 psi system at the heel and Bonner's in the middle and the 3,200 psi system at the bottom?

Q. I'm asking what your combination is.

A. My combination is you just take Bonner, you increase the pressure rating on Bonner, and you replace Yeh with Bonner.

Q. What portion of Yeh do you replace with Bonner?

A. The -- you beef up the tubes to get to the 6,500 pounds.

Q. So which screens would be in

Yeh's system?

A. You wouldn't use Yeh. You would use Bonner and the existing system.

Q. Would you have -- would it include Yeh's 3,200 eccentric screen?

A. Well, Yeh -- the alternate path system available for 3,200 psi, which was also OptiPac and whoever else at the time. Same systems. You would put those on the toe end, and you would put Bonner's eccentric higher pressure rated screens system on the heel side.

Q. So why -- why not just use Bonner's higher rated eccentric screen all the way to the toe?

A. You would just have to look at the cost. You could do that or you would have to look at the cost. But there was a cost saving for using the lower pressure system.

Q. What benefits would there be to using Bonner's higher rated eccentric screen

all the way to the toe?

A. What -- what benefit would there be to using a Bonner 6,500 psi all the way to the toe? I don't see a benefit of doing that.

You're going to pay more money for that because if you increase the weight of the shunt tube, you increase the wall thickness, your pipe is sold on a dollar-per-pound, so you're going to pay more for that system than you would for a lower pressure-rated system.

Q. You would achieve the benefit of not having to use the crossover tool of Yeh, correct?

A. If you're screwing a high -- Bonner high-pressure system to a low-pressure system, I don't think you need a crossover. I think the existing tools do that.

Q. Okay. Is there a benefit to having one type of eccentric screen versus using two different types of eccentric

screens?

A. The only benefit I'm aware of, and you're going to pay more money for it, is out on the rig sometimes things can get messed up, right, and they can -- you can end up unintentionally getting a lower pressure screen in an area that needs a high pressure.

So if they're all the same, then that wouldn't be -- but, people manage these things every day. You do it with casing weights, you do it with everything else. So that's not a very high likelihood to occur.

Q. Does it reduce complexity?

A. A little bit.

MR. WALTERS: Okay. I think I may be done, but I would like to break for ten minutes.

MS. ARNOLD: Sure.

MR. WALTERS: And come back if that's okay.

MS. ARNOLD: Yes.

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(Break from 10:30 a.m. to 10:41 a.m.)

MR. WALTERS: I don't have any further questions, so I -- I would pass the witness.

MS. ARNOLD: Okay. We don't have any questions either. We can go off the record.

(The deposition concluded at 10:41 a.m.)

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ERRATA SHEET

Case Name: *Weatherford U.S., L.P. v. Halliburton Energy Services, Inc.*
Case No.: IPR2024-00990
Witness Name: Michael R. Chambers, Sr.
Deposition Date: September 5, 2025

Page	Line(s)	Change	Reason
15	12-13	Change "the proposed substitute claim 26, 35 and 37 of the '007 patent" to "the proposed substitute claims 26, 35, 36, and 37 of the '007 patent"	Transcription Error
26	10	Change "path refers to the A style design" to "path refers to the Alternate style design"	Transcription Error
29	4	Change "tolerances and the API 5CT" to "tolerances and the API 5C3"	Transcription Error
45	21	Change "old mole" to "old method we used at Mobil"	Transcription Error
46	20	Change "So I'm relating" to "So I'm relying"	Transcription Error

I, the undersigned, do hereby certify that I have read the foregoing transcript, and the same is a correct and complete transcription of the testimony given by me with the exception of the corrections listed above.

Date: 9/9/2025

Michael R. Chambers, Sr.

CERTIFICATE OF SHORTHAND REPORTER

I, Mendy A. Schneider, Certified Shorthand Reporter in and for the State of Texas do hereby certify:

That MICHAEL CHAMBERS, SR., the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken before me and is a true record of the testimony given by such witness.

I further certify that the adverse party, WEATHERFORD U.S., L.P., was represented by counsel at the deposition.

I further certify that the deposition of MICHAEL CHAMBERS, SR., occurred virtually via Zoom on Friday, September 5, 2025, commencing at 9:00 a.m. to 10:41 a.m.

I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

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IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of September, 2025.

Mendy A. Schneider

MENDY A. SCHNEIDER, CSR 7761
Expiration Date: 1/31/27
Planet Depos Worldwide
451 Hungerford Drive, Suite 400
Rockville, MD 20850

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