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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

SILENCERCO WEAPONS	*	
RESEARCH, LLC	*	
	*	
VS.	*	IPR 2024-01214
	*	PATENT 8,286,750 B1
HUXWRX SAFETY CO. LLC	*	

ORAL DEPOSITION OF
G. PAUL NEITZEL, PHD
JULY 9, 2025

ANSWERS AND DEPOSITION OF G. PAUL NEITZEL,
PHD, a witness produced at the instance of the
Petitioner, taken in the above styled and
numbered cause, on the 9th day of July, 2025
from 9:06 a.m. to 11:12 a.m., before Gail
Spurgeon, a Certified Court Reporter in and for
the State of Texas, at the offices of Nelson
Bumgardner Conroy, 2727 North Harwood, Suite
250, City of Dallas, County of Dallas, and State
of Texas.

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A P P E A R A N C E S

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ALSO PRESENT:
David Kellis

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EXHIBITS

EXHIBITS	DESCRIPTION	PAGE
Exhibit 1001	US Patent 8,286,750 B1	15
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Exhibit 1015	Thurler.....	54
Exhibit 1016	Bouton	73
Exhibit 2001	Declaration of G. Paul Neitzel, Phd	5

1 G. PAUL NEITZEL, PHD,
2 having been first duly sworn, testified as
3 follows:

4 EXAMINATION

5 BY MR. ROESER:

6 Q. Good morning, Dr. Neitzel.

7 A. Good morning.

8 Q. Could you please state your full name
9 for the record?

10 A. George Paul Neitzel. 09:06

11 Q. My name is Randy Roeser. I represent
12 SilencerCo in this IPR proceeding. I'll be
13 asking you the questions today. Have you had
14 your deposition taken before?

15 A. Yes. 09:06

16 Q. About how many times?

17 A. About 15.

18 Q. So you kind of know the rules. I'll
19 just briefly touch on them so we don't get in
20 trouble with Ms. Gail here. You're doing a good 09:07
21 job. We'll continue to try not to talk over
22 each other and give verbal responses. No head
23 shakes or uh-huhs or huh-uhs throughout our
24 testimony today.

25 A. Okay. 09:07

1 Q. And because you've taken an oath to
2 tell the truth, it's important that you
3 understand my questions before you answer them.
4 So if at any time you don't understand them,
5 will you please ask me to clarify? 09:07

6 A. I will.

7 Q. And is there any reason why you can't
8 give full and accurate testimony today?

9 A. No.

10 Q. And we'll be going for a few hours 09:07
11 here today, so if at any time you need a break
12 just let me know, we can take a break. The only
13 thing I ask if there is a pending question, you
14 give me an answer to that question before we
15 take a break. 09:07

16 A. Okay.

17 Q. All right. Let's just dive in and if
18 you want to pull up -- I put in front of you
19 Exhibit 2001 in this IPR proceeding.

20 (Exhibit No. 2001 introduced.) 09:08

21 Q (BY MR. ROESER) And that's a copy of
22 your declaration. I don't have it stapled.

23 A. That's all right.

24 Q. All right. So this is a copy of your
25 declaration that you submitted on behalf of 09:08

1 HUXWRX in this IPR proceeding; is that correct?

2 A. It appears to be, yes.

3 Q. And does that declaration contain all
4 of the opinions you've set forth in this IPR
5 proceeding? 09:08

6 A. All that I've been asked to set
7 forth, yes.

8 Q. As of the date of the declaration?

9 A. Yes.

10 Q. Which was April 28th, 2025; is that 09:08
11 correct?

12 A. Correct.

13 Q. Okay. And in preparing your
14 declaration, did you collaborate or discuss
15 anything with anyone at HUXWRX? 09:09

16 A. No.

17 Q. Let's turn to paragraph 14 of your
18 declaration. And that is Section 3, which is
19 the materials reviewed and relied upon. Do you
20 see that? 09:09

21 A. Yes, I do.

22 Q. Okay. Other than the documents
23 listed in paragraph 14 and other documents you
24 might have cited throughout the declaration, did
25 you review or rely upon any other documents in 09:09

1 forming your opinions?

2 A. No.

3 Q. No other evidence or any other
4 documents that you relied upon in forming the
5 opinions set forth in your declaration? 09:09

6 A. I looked at some other documents that
7 were originally part of the complaint, but it
8 was not necessary to use any of that
9 documentation to provide an opinion on this.

10 Q. And when you say "the complaint," do 09:09
11 you mean the Complaint that HUXWRX filed against
12 SilencerCo in the District of Utah?

13 A. Yes, I guess your petition would be
14 the right word.

15 Q. Oh, okay. So you reviewed -- 09:10

16 A. Your petition.

17 Q. -- SilencerCo's petition --

18 A. Yes.

19 Q. -- for IPR? Okay. Not the Complaint
20 from the district court litigation? 09:10

21 A. Correct.

22 Q. You didn't review all of the
23 petitioner's exhibits, is that correct, just the
24 ones listed in paragraph 14?

25 A. Which other exhibits are you 09:10

1 referring to?

2 Q. So, for example, in the petition
3 there was Exhibit 1001, 1002, 1003, 1004, and so
4 on. You only have listed Exhibit 1001,
5 Exhibit 1004. There were other exhibits 09:10
6 attached to the petition that you didn't
7 necessarily review; is that correct?

8 A. I don't recall. Those are the two,
9 and the next declaration that I relied heavily
10 on, certainly. 09:10

11 Q. Okay. But you didn't review and rely
12 upon the other petitioner's exhibits that are
13 not listed in Exhibit 14?

14 A. Not that I recall.

15 Q. And you have reviewed the decision 09:11
16 granting institution in this IPR proceeding; is
17 that correct?

18 A. Yes.

19 Q. Okay. Did you review it in
20 preparation for your deposition here today? 09:11

21 A. Yes.

22 Q. In fact, what all did you do to
23 prepare for your deposition today?

24 A. I reviewed my declaration several
25 times. I reviewed the other documentation that 09:11

1 we discussed already. I met with counsel for
2 HUXWRX. And that's basically it.

3 Q. All right. Now let's talk a bit
4 about your background and experience, and that
5 is going back to Section 2 of your declaration. 09:11

6 A. Okay.

7 Q. That starts on page 3.

8 A. Okay.

9 Q. So Section 2 of your declaration and
10 your CV, which is Appendix C, that accurately 09:12
11 describes all your relevant experience with
12 energy suppression devices; is that correct?

13 A. Correct.

14 Q. And I understand you have experience
15 in the area of fluid dynamics? 09:12

16 A. Correct.

17 Q. What type of experience do you have
18 specifically with fluid dynamics as it relates
19 to firearm silencers or suppressors?

20 A. I worked for ten years for the United 09:12
21 States Army Ballistic Research Laboratory, so I
22 have some experience with aerodynamic
23 characteristics, projectiles, and things like
24 that, with shape charge devices for armor
25 penetration. Nothing specifically with respect 09:12

1 to suppressors.

2 Q. Okay. So no experience specifically
3 with respect to suppressors?

4 A. Correct.

5 Q. You've never manufactured a 09:12
6 suppressor?

7 A. Correct.

8 Q. And you never designed a suppressor?

9 A. Correct.

10 Q. You've never tested suppressors? 09:13

11 A. Correct.

12 Q. What about with mufflers? Have you
13 ever -- do you have any experience with fluid
14 dynamics and mufflers?

15 A. Not with fluid dynamics. Just with 09:13
16 replacing them on my cars.

17 Q. Okay. Any academic experience with
18 or research experience with mufflers?

19 A. No.

20 Q. You've never designed a muffler? 09:13

21 A. No.

22 Q. Never manufactured a muffler?

23 A. No.

24 Q. Never tested the effects of using a
25 muffler on decibel sounds? 09:13

1 A. No.

2 Q. Same thing with suppressors, no
3 experience testing the effects of a suppressor
4 off a firearm's decibel?

5 A. Correct. 09:13

6 Q. Have you ever opined in a case as an
7 expert on a silencer or a muffler?

8 A. No.

9 Q. Have you ever been an expert witness
10 on a case that involved firearms? 09:13

11 A. No.

12 Q. Let's go to Section 4 of your
13 declaration. It starts on page 7. And that's
14 the applicable legal standards. Other than the
15 standard that you've included in this section of 09:14
16 your declaration, did you apply any other legal
17 standards in forming your opinion?

18 A. No.

19 Q. And do you understand your
20 declaration was submitted along with HUXWRX's 09:14
21 opposition to SilencerCo's petition for IPR?

22 A. I guess I was not aware that they
23 were submitted together.

24 Q. Okay. Were you aware that your
25 declaration supported the opposition? 09:14

1 A. I believe so.

2 Q. And you're aware that your
3 declaration supported HUXWRX's motion to amend?

4 A. Yes.

5 Q. Okay. Did you have any involvement 09:14
6 in drafting either the opposition or the motion
7 to amend itself?

8 A. I had some discussions regarding the
9 motion to amend, and I believe we had some
10 discussions regarding the opposition. 09:15

11 Q. Okay. But you didn't -- did you
12 draft any portions of the opposition or the
13 motion to amend?

14 A. I didn't draft any of it. I
15 certainly reviewed some of it and commented on 09:15
16 it.

17 Q. Okay. Let's go to section 5 of your
18 report. It starts on page 10. And that is the
19 overview of the '750 patent.

20 Do you see that? 09:15

21 A. Yes, I do.

22 Q. Okay. If we look at paragraph 25.
23 You can take the time to read it.

24 A. Okay.

25 Q. All right. You note, and you're 09:16

1 quoting from the '750 patent, that in the field
2 of firearm sound suppression, basic sound
3 suppression technology has varied only modestly
4 over the past 100 years?

5 A. Judging by some of the prior art that 09:16
6 I've looked at, I would say that's probably a
7 fair statement.

8 Q. Okay. I was just asking if you agree
9 with that, and you agree with that statement?

10 A. Yes. 09:16

11 Q. Okay. Great. All right. And the
12 next paragraph, paragraph 26, you note that the
13 '750 patent describes an energy capture and
14 control device specifically in terms of silencer
15 devices for sniper rifles. 09:16

16 Do you see that?

17 A. Yes.

18 Q. Around the time of 2010, the date of
19 the '750 patent, what kind of sights would you
20 see on a typical sniper rifle? 09:17

21 A. I don't have experience with sniper
22 rifles, so I could only hazard a guess, but I
23 would rather not.

24 Q. Okay. So you wouldn't know one way
25 or another what sights were used on any specific 09:17

1 type of gun at any point in time?

2 A. If it -- if it were for a sniper
3 application, I would presume it was a telescopic
4 sight.

5 Q. Okay. And not -- it would be rare to 09:17
6 have a sniper rifle be using open sights or iron
7 sights?

8 MR. DEZERN: Objection,
9 form.

10 A. I would guess so. 09:17

11 Q (BY MR. ROESER) Okay. All right.
12 Let's talk about the next section, Section 6 of
13 your report, which starts at paragraph 38, the
14 section titled, "Person of ordinary skill in the
15 art." 09:18

16 Do you see that?

17 A. Yes.

18 Q. Okay. And paragraph 30 -- excuse me.
19 Paragraph 39, you repeat petitioner's definition
20 of a POSITA. 09:18

21 Do you see that?

22 A. Yes, I do.

23 Q. Then it's safe to say that you agree
24 with the definition of a POSITA that petitioner
25 set forth? 09:18

1 A. Yes.

2 Q. Okay. And that is the standard that
3 you applied in rendering your opinions in your
4 declaration?

5 A. Yes. 09:18

6 Q. All right. The next section is
7 Section 7, the claim construction section.
8 Okay. In this section, you discuss four terms:
9 Radially serpentine, at least one of, a common
10 off axis chamber, plurality of deflectors, and 09:18
11 then fluid outlet; is that right?

12 A. I think that was five, but yeah.

13 Q. Well, yeah, the common off axis
14 chamber and plurality --

15 A. Okay. 09:19

16 Q. -- were taken together, but yes.

17 A. Okay.

18 Q. So let's talk about the radially
19 serpentine term. And if you will grab the '750
20 patent, which is Exhibit 1001. 09:19

21 A. Okay.

22 (Exhibit No. 1001 introduced.)

23 Q (BY MR. ROESER) Turn to Column 4.
24 And, actually, before we talk about radially
25 serpentine, in Column 4, starting about Line 09:19

1 27 --

2 A. 27?

3 Q. Yes, sir. Column 4, Line 27.

4 A. Okay.

5 Q. That paragraph sets forth several 09:19

6 definitions of fluid pathways. Would you agree

7 with that? And you can take your time to read

8 that, if you need to.

9 A. Yes.

10 Q. All right. So the first is axially 09:20

11 serpentine.

12 Do you see that?

13 A. Yes, I do.

14 Q. And the definition of axially

15 serpentine provided in the '750 patent is, "The 09:20

16 fluid pathway can be axially serpentine fluid

17 pathway which causes fluid received in the off

18 axis chamber to travel back and forth along the

19 length of the off axis chamber."

20 Do you see that? 09:20

21 A. Yes, I do.

22 Q. So to be axially serpentine, the

23 fluid travels back and forth along the length of

24 the silencer suppressor?

25 A. Correct. 09:20

Q. Okay. And then after that definition, still in Column 4, the '750 patent starts with another definition of radially serpentine.

Do you see that? 09:21

A. Yes.

Q. Okay. And the definition -- there's two separate, I think, descriptions or definitions of what radially serpentine is in that column. The first is that the fluid pathway can be radially serpentine fluid pathway, which causes the fluids received in the off axis chamber to flow back and forth around a radius of the off axis chamber.

Do you see that? 09:21

A. Yes, I do.

Q. So under that first definition in the '750 patent, to be radially serpentine, the fluid has to flow back and forth around a radius?

09:21

A. A radius within the off axis chamber, and the radius extends outward from the center of the device.

Q. Right. The radius being from the center axis of the central chamber to the outer 09:21

1 edge of the --

2 A. To whatever point the fluid is
3 flowing, in my opinion.

4 Q. Well, how is that a radius if it's at
5 any point if the fluid is flowing? Doesn't it 09:22
6 have to be around the radius?

7 A. It has to be a radius to a fixed
8 point, and then the fluid will flow back and
9 forth around that radius.

10 Q. Around it? 09:22

11 A. Not this way, but this way,
12 circumferentially.

13 Q. So you're equating radially
14 serpentine and circumferentially?

15 A. I would have called it 09:22
16 circumferentially serpentine if I had been
17 launching the draft of this, yes.

18 Q. But in that -- so --

19 A. And there's support for this in the
20 prosecution history of the original application, 09:22
21 too, that talks about circumferential flow
22 around the axis of the device itself, around the
23 longitudinal axis of the device.

24 Q. Right. I think we're -- I think
25 we're kind of -- we're going to talk about -- I 09:22

1 think what you're discussing is probably what
2 Figure 14 depicts of the '750 patent,
3 circumferential.

4 A. Okay.

5 Q. Would you agree with that? 09:23

6 A. Yes.

7 Q. And what I'm asking is sort of just
8 the definition of radially serpentine. So if
9 the '750 patent is saying that to be radially
10 serpentine you have to flow back and forth 09:23
11 around a radius, you would agree that the fluid
12 has to flow around a radius back and forth?

13 A. Circumferentially, yes.

14 Q. The '750 patent doesn't qualify its
15 definition of radially serpentine with the term 09:23
16 "circumferentially," does it?

17 A. No, it doesn't. But as I said, in
18 the prosecution history, in the first filing for
19 this patent, there is language that defines
20 radially serpentine as circumferential about the 09:23
21 longitudinal axis of the device. I believe it's
22 something like --

23 Q. I'm going to have you point me --

24 A. -- page 54 or something like that.

25 Q. I'm going to hand you what is 09:23

1 Exhibit 1004.

2 (Exhibit No. 1004 introduced.)

3 Q (BY MR. ROESER) And that is the
4 prosecution history of --

5 MR. ROESER: I'm sorry, I 09:24
6 didn't print off two copies.

7 MR. DEZERN: That's
8 understandable. That's
9 Exhibit 1004?

10 MR. ROESER: Yes. 09:24

11 Q (BY MR. ROESER) Yeah. Point to me
12 where you're talking about where --

13 A. This is going to be tough to find.

14 Q. It's in reverse chronological order,
15 if that's helpful. 09:24

16 A. I know. I know. We may be a while.
17 I think I'm too far. I'm afraid I can't locate
18 it right now. But I have it marked in my own
19 copies of all these things and certainly
20 identify it at a later date if you need me to. 09:30

21 Q. So in your opinion, radially
22 serpentine is crossing back and forth across a
23 radius while advancing outwardly while advancing
24 radially?

25 A. No, it does not need to advance 09:31

1 radially. It just means moving
2 circumferentially in a clockwise to
3 counterclockwise direction, changing direction.

4 Q. How does that relate at all to a
5 radius then if it's not rotating around a radius 09:31
6 like the '750 patent defines it?

7 A. If I have a curved surface and I have
8 a center of that curved surface and I draw a
9 radius to some fixed point, the flow at that
10 point can move back and forth this way. As I 09:31
11 said, I would not have chosen that language had
12 I drafted this patent language, but it's what I
13 would call circumferentially serpentine, and it
14 was agreed to by the patent examiner in the
15 original -- was it '969, I believe, application. 09:31

16 Q. So in your mind, radially serpentine
17 does not have to flow back and forth around a
18 radius of the off axis chamber?

19 A. A radius of the off axis chamber?
20 That's kind of what I just said. Here's -- 09:31
21 here's a radius of the off axis chamber, here is
22 the off axis chamber somewhere here. There is a
23 radius to some point in that off axis chamber,
24 and the flow flows backward and forward
25 circumferentially around that fixed location. 09:32

1 Q. But in your example, it's not going
2 around the radius, it's crossing the radius,
3 correct?

4 A. It's crossing the radius.

5 Q. Right. So in your opinion, to be 09:32
6 radially serpentine, you don't have to rotate
7 around a radius?

8 MR. DEZERN: Objection,
9 form.

10 A. If this is a radius, the flow does 09:32
11 not do something like that, that's correct.

12 Q (BY MR. ROESER) So your opinion is
13 that to be radially serpentine, the fluid flow
14 does not have to flow back and forth around a
15 radius? 09:32

16 MR. DEZERN: Objection,
17 form.

18 A. That's the language in the patent so
19 I don't want to agree to that. I just want to
20 say that if the radius is here, the flow is 09:32
21 circumferentially flowing backward and forward
22 around that fixed point at the end of that
23 radial vector.

24 Q (BY MR. ROESER) Let's -- I know
25 you're doing some hand gestures, but let's look 09:32

1 at Figure 14 of the '750 patent. So that's back
2 to Figure 14 of Exhibit 1001. That's my only
3 copy.

4 A. Okay.

5 Q. I believe Exhibit 1001 is there by 09:33
6 your hand.

7 A. Okay.

8 Q. In Figure 14, you have a silencer
9 with multiple concentric tubes, correct?

10 A. Uh-huh. 09:33

11 Q. And so --

12 A. I would call them shells because they
13 aren't necessarily complete tubes.

14 Q. Multiple concentric shells?

15 A. Right. 09:33

16 Q. And the airflow would be advancing
17 from the central axis outwardly in a
18 circumferential pathway, correct? It would be
19 going outwardly from the central axis to the
20 outer edge of the silencer while also crossing 09:34
21 the radius clockwise and counterclockwise?

22 A. If we look at Mr. Nixon's drawing, I
23 believe it was Figure 2, in which he drew the
24 redline trying to emulate the flow of this
25 particular device, I would concur with that. 09:34

1 And in that case, the flow is going, moving
2 outwardly. But it need not move outwardly in
3 order to be radially serpentine. It just needs
4 to move backwards and forwards from clockwise to
5 counterclockwise. 09:34

6 Q. So if a fluid pathway just simply
7 crosses a radius, it crosses a radius of the off
8 axis chamber, that would meet your definition of
9 radially serpentine?

10 A. No. It has to cross and change 09:34
11 directions at least once.

12 Q. And so under your definition of
13 radially serpentine, the fluid doesn't have to
14 flow around the radius?

15 MR. DEZERN: Objection, 09:35
16 form.

17 A. If meaning around the radius means
18 what we talked about before this way, no.

19 Q (BY MR. ROESER) And could you
20 describe what you're doing with your hand 09:35
21 movement, rotating --

22 A. Do you have a pen?

23 Q. So let's go to Figure 1 of your -- of
24 Mr. Nixon's declaration that you included in
25 your -- 09:35

1 A. Okay.

2 Q. It's at paragraph 55.

3 A. 55.

4 Q. So in Figure 1 of paragraph 55 from
5 Mr. Nixon's declaration, that is reproduced in 09:35
6 your declaration --

7 A. Yes.

8 Q. -- at paragraph 55. So in Figure 1,
9 that indicates that the fluid is rotating around
10 back and forth around the radius. Would you 09:35
11 agree with that?

12 A. That appears to be the case.

13 Q. And you're saying that that is not
14 required to meet the definition of radially
15 serpentine? 09:35

16 A. No.

17 Q. That's not what you're saying or it
18 does not?

19 A. It is not required.

20 Q. Okay. So rotating around a radius of 09:35
21 the off axis chamber is not required to be
22 radially serpentine?

23 A. If by around the radius you mean what
24 Mr. Nixon is trying to depict here in Figure 1,
25 yes, it is not required. 09:36

1 Q. Okay. And that's your opinion as to
2 radially serpentine?

3 A. Correct.

4 Q. Okay. So you're -- now let's move on
5 to this Figure 2 from Mr. Nixon's declaration -- 09:36

6 A. Sure.

7 Q. -- which you've also included in
8 paragraph 55 of your declaration. That is
9 related to Figure 14, would you agree?

10 A. Yes. 09:36

11 Q. Okay. And that has multiple
12 concentric tubes or shells?

13 A. Yes.

14 Q. And in that instance, you're saying
15 that also meets the definition of radially 09:36
16 serpentine -- or strike that.

17 In Figure 2 of Mr. Nixon's report
18 that you've included in paragraph 55 of your
19 report, which refers to Figure 14 of the '750
20 patent, you're saying that qualifies as a 09:36
21 radially serpentine fluid flow?

22 A. Correct.

23 Q. Okay. And can you describe to me the
24 fluid pathway depicted in Figure 2 that you
25 reproduced in paragraph 55? 09:37

1 A. It's depicted by the red line showing
2 the flow moving from the center, it looks to be
3 clockwise in this case, then reaching an end of
4 the shell, migrating back around in a
5 counterclockwise fashion in the opposite 09:37
6 direction, until it reaches the end of another
7 shell and then turning clockwise again.

8 Q. Okay. And it's not rotating around a
9 radius like the fluid flow in Figure 1, correct?

10 A. If Figure 1 is meant to mean this 09:37
11 kind of a rotation, that's correct.

12 Q. Right.

13 A. Yes.

14 Q. Understanding Figure 1 to be rotating
15 around, back and forth around a radius -- 09:37
16 A. Right.

17 Q. -- then Figure 2 depicts a different
18 fluid flow than that?

19 A. Yes.

20 Q. Okay. And the fluid flow in Figure 2 09:37
21 is what you are opining is radially serpentine
22 fluid flow?

23 A. It's one example of radially
24 serpentine flow.

25 Q. Okay. But that does meet your 09:38

1 definition of radially serpentine fluid flow?

2 A. Yes, but as I said, the fluid need
3 not move out radially in order to be radially
4 serpentine.

5 Q. Explain that to me, though. Because 09:38
6 that -- wouldn't that read out the term
7 "radially" from the definition? If it no longer
8 relates to a radius, then how would it not
9 advancing outwardly --

10 A. I could have a shell at a fixed 09:38
11 radius that has veins or some other method for
12 allowing the fluid to flow in one direction
13 along that shell and then turn and flow out
14 another direction along that shell. It's still
15 within the same shell around the same radius to 09:38
16 that shell location. That's flowing back and
17 forth across that radius.

18 Q. Across the radius, not around the
19 radius, right?

20 A. Not around it. 09:38

21 Q. Okay.

22 A. If around means your Figure 1
23 interpretation.

24 Q. All right. So let's talk about that
25 in the context. We were sort of talking about 09:38

1 that in the context of Figure 14 of the '750
2 patent. So let's take your example where you
3 don't have those multiple concentric tubes,
4 okay? And we have -- actually, let's go back to
5 Exhibit 1001, back to Column 4. I want to talk 09:39
6 about helical -- the definition of helical flow
7 in the '750.

8 A. Is this Exhibit 1001?

9 Q. I'm sorry. It's the patent.

10 A. Oh, the patent. 09:39

11 Q. The '750 patent.

12 A. Okay. Which column again?

13 Q. 4. It's towards the bottom of the
14 paragraph we were talking about that started at
15 27. 09:39

16 A. All right.

17 Q. Towards the bottom, "And yet another
18 aspect the fluid pathway can be a helical fluid
19 pathway which causes the fluid to spiral around
20 the central chamber within the off axis chamber 09:39
21 along the length of the off axis chamber."

22 A. Yes.

23 Q. You'd agree that that is helically --
24 that's a helical fluid flow?

25 A. Yes. 09:40

1 Q. Okay. That doesn't mention radius,
2 right?

3 A. It doesn't.

4 Q. It's rotating around, it's spiralling
5 around the central chamber? 09:40

6 A. That's correct. Spiralling along the
7 longitudinal axis of the device.

8 Q. Okay. What do you understand
9 serpentine to mean? Is that just a change in
10 direction? 09:40

11 A. As pertains to this patent, yes.

12 Q. Okay. So in the context of the '750
13 patent, "serpentine" just means a change in
14 direction?

15 A. Yes. 09:40

16 Q. So in our example where we don't have
17 multiple concentric tubes, we just have walls
18 that spiral around the central chamber that are
19 in the off axis chamber, that would create a
20 helical fluid pathway, correct? 09:40

21 A. You say you have walls that spiral
22 around. It --

23 Q. Right, the --

24 A. If you create a helical flow in a
25 chamber -- 09:41

1 Q. Right.

2 A. -- that would not be -- meet the
3 definition of "serpentine."

4 Q. Okay. So if the walls were
5 spiralling around central chamber to direct the 09:41
6 fluid flow to spiral around the central chamber,
7 that would be a helical fluid pathway?

8 A. Correct. There's no change in
9 direction.

10 Q. And a change in direction is just 09:41
11 serpentine, right?

12 A. A change in direction would be --

13 Q. Within the context of the '750
14 patent, a change in direction is serpentine?

15 A. Yes. 09:41

16 Q. So let's take that same example where
17 we have the walls to create a helical fluid flow
18 and let's just reverse the direction about
19 halfway down the silencer.

20 A. Okay. 09:41

21 Q. So you're spiralling in one
22 direction?

23 A. Yes.

24 Q. And then you're spiralling around the
25 central chamber in another direction? 09:41

1	A. Yes.
---	---------

2 Q. You've agreed that spiralling around
3 the central chamber in one direction is helical
4 fluid flow and you've agreed that a change in
5 direction is serpentine? 09:42

6	A. Yes.
---	---------

7 Q. So wouldn't that example be a
8 helically serpentine fluid flow?

9	MR. DEZERN: Objection,	
10	form.	09:42

11 A. It would be a radially serpentine
12 fluid flow.

13 Q (BY MR. ROESER) How?

14 A. Well, it's still spiralling around a
15 radius, at some fixed radius. 09:42

16 Q. It's spiralling around the central
17 chamber, not a radius.

18 A. To use the definition of "radially
19 serpentine" in the patent, spiralling around a
20 radius. It's changing direction around a 09:42
21 radius. It's going one direction around the
22 radius at one point and another direction around
23 the radius at another point.

24 Q. But in that example, it's not going
25 around a radius at all, is it? It's rotating 09:42

1 around the central chamber. The radius comes
2 off the central axis towards the --

3 A. That's correct.

4 Q. So it's not rotating around --

5 A. But I can have a fixed axis, and I 09:42
6 can have fluid moving this direction across that
7 fixed axis, and then when it gets to someplace
8 else and it's -- I can move that radius to
9 another point, and now it's going the other
10 direction around that fixed radius. It's 09:42
11 changed direction.

12 Q. But in the example we're
13 talking about there, it's not advancing
14 outwardly, there is no multiple concentric
15 tubes, it's just -- 09:43

16 A. No.

17 Q. -- spiralling around?

18 A. No, it's advancing longitudinally.

19 Q. I want to make sure I get my question
20 out because I think we're starting to talk over 09:43
21 each other.

22 In the example of a helical fluid
23 flow, the fluid pathway just spirals around the
24 central chamber, correct?

25 A. In a single direction. 09:43

1 Q. In a single direction.

2 A. Either clockwise or counterclockwise.

3 Q. Correct?

4 A. Yes.

5 Q. And then if you have a helical fluid 09:43

6 pathway that reverses direction at some point in

7 the silencer, you're now saying that creates a

8 radially serpentine fluid pathway?

9 A. Yes, according to the definition.

10 Q. How, if it's not rotating around a 09:43

11 radius of the off axis chamber, it's just still

12 spiralling around the central chamber but just

13 in a different direction?

14 A. Well, to your language again, you

15 called Figure 1 of Mr. Nixon rotating around a 09:43

16 radius.

17 Q. Right.

18 A. I'm talking about rotating across a

19 fixed radius --

20 Q. Right. But that -- 09:43

21 A. -- might be a more descriptive way.

22 Q. So to be radially serpentine, you

23 just have to cross a radius in your mind with a

24 change of direction?

25 A. With a change of direction, yes. 09:44

Q. The '750 patent doesn't define radially serpentine as crossing a radius, does it, in Column 4?

A. Flow back and forth around a radius
of the off axis chamber. 09:44

Q. So it doesn't define radially serpentine as crossing a radius?

A. Not specifically.

Q. And so if we have -- again, I just need you to explain to me how a reversing direction in a helical -- wait, strike that and start over.

Explain to me how the fluid would flow around a radius of the off axis chamber if you have a silencer with a helical fluid pathway that reverses direction to still maintain its helical fluid pathway.

A. Say that again. That was a little long.

Q. So explain to me how the fluid would flow around a radius of the off axis chamber if you have a silencer with a helical fluid pathway that changes directions at some point within the silencer and still maintains that helical fluid pathway.

1 A. When you say "still maintains that
2 helical fluid pathway," but in an opposite
3 direction.

4 Q. In an opposite direction.

5 A. Once it changes direction, it then 09:45
6 crosses that radial location in an opposite
7 sense.

8 Q. But isn't the change of direction
9 just serpentine?

10 A. That change in direction is 09:45
11 serpentine, but that's what is defined as
12 radially serpentine in the context of the '750
13 patent.

14 Q. But not if it's not rotating around
15 the radius, right? 09:45

16 A. Well, once again, rotating around the
17 radius, I have to go back to your Figure 1 of
18 Mr. Nixon's report, and that is not what is
19 meant by rotating around a radius.

20 Q. But crossing a radius is what was 09:46
21 meant by the term "around the radius" is your
22 opinion?

23 A. In the way I think of crossing a
24 radius, yes. And I still -- I would like to
25 find that reference to circumferentially 09:46

1 changing direction flow in the '969 application
2 and bring it to your attention, but I just can't
3 do it. I wish I had memorized the Bates number
4 of that page, but I didn't.

5 Q. Okay. Let's look at the institution 09:46
6 decision, which is paper 7 in this IPR
7 proceeding. And let's turn to page 11.

8 A. Let me get my report back together so
9 I don't mess that up. Okay.

10 Q. So on page 11, the Board notes -- 09:47
11 toward the bottom of page 11, the Board notes
12 that the '750 patent does not use radially or
13 serpentine to describe a fluid pathway which
14 causes the fluids to spiral around the central
15 chamber within the off axis chamber along a 09:47
16 length of the off axis chamber, instead
17 referring to such fluid pathway as a helical
18 fluid pathway.

19 Do you see that?

20 A. Yes. 09:47

21 Q. And do you agree with that?

22 A. If it's spiralling in only one
23 direction.

24 Q. But if it changes direction, then
25 that wouldn't create a helically serpentine 09:48

1 fluid flow that somehow transforms that helical
2 fluid flow around, spiralling around the central
3 chamber into a fluid flow that rotates around a
4 radius, in your opinion?

5 A. We get back to "around a radius" 09:48
6 again. It would -- that change of direction
7 would cause that flow to be defined as radius
8 serpentine.

9 Q. Even though a change in direction
10 you've already agreed just means serpentine? 09:48

11 A. Yes, but it's coming back across that
12 same radius in an opposite direction. And I
13 believe I discussed that in my declaration.

14 Q. All right. Let's turn to page 12,
15 still in the institution decision. 09:48

16 A. Okay.

17 Q. Actually, never mind. Let's go back
18 to paragraph 54 of your declaration.

19 A. 54?

20 Q. Yes, sir. 09:49

21 A. Okay. That's exactly what I just
22 said in response to your last question.

23 Q. Is the helical fluid flow different
24 than a radially serpentine fluid flow?

25 A. Yes. 09:50

1 Q. What's the difference?

2 A. Helical means a flow that proceeds
3 with one sense of rotation either clockwise or
4 counterclockwise.

5 Q. What does that helical fluid flow 09:50
6 rotate around?

7 A. It rotates around a longitudinal axis
8 of the device and across any fixed radius, if
9 you like.

10 Q. Are there any other differences in 09:50
11 your opinion between a helical fluid flow and a
12 radially serpentine fluid flow other than the
13 lack of change in direction in the helical fluid
14 flow?

15 A. No. 09:50

16 Q. Okay. All right. And you understand
17 -- in the context of Figure 14 of the '750
18 patent, do you understand the Board has defined
19 that as a circumferential fluid flow?

20 A. Yes. 09:51

21 Q. Okay. And do you agree with that?

22 A. We -- we disagreed with that, I
23 believe. Let me see if I can find it.

24 Q. I believe that's paragraph 62.

25 A. Yes, 62. 09:51

1 Q. You disagree with the Board's
2 characterization of the fluid flow of Figure 14
3 as circumferential?

4 A. Yes, it's not strictly
5 circumferential. It's radially serpentine. 09:51

6 Q. What's the difference between
7 circumferential fluid flow and radially
8 serpentine fluid flow?

9 A. Change of direction.

10 Q. That's the only difference? 09:51

11 A. Well, there is also flow along the
12 axis. So as the flow moves along the axis,
13 flowing circumferentially, it experiences a
14 change in direction.

15 Q. What axis are you referring? 09:51

16 A. Longitude axis of the device.

17 Q. So the only difference -- strike
18 that.

19 A difference between radially
20 serpentine fluid flow and circumferential fluid 09:52
21 flow is what again?

22 A. Flow in a circumferential direction
23 moving along the axis and at some point I change
24 direction. A flow -- let's take another
25 example. If I had two infinitely long cylinders 09:52

1 and I put fluid between them and I just merely
2 oscillated the cylinders back and forth to make
3 the fluid move from counterclockwise back to
4 clockwise back to counterclockwise however many
5 times you want, I would not call that radially 09:52
6 serpentine.

7 Q. What would you call that?

8 A. It's just an oscillating flow. It's
9 a very well-known oscillating flow of fluid
10 mechanics. 09:52

11 Q. What's the difference between an
12 oscillating flow and a circumferential flow?

13 A. It's -- circumferential in motion,
14 but it's also changing direction. But it's not
15 moving along the axis of the device. 09:53

16 Q. So if it's not moving along the axis
17 of the device in that example, what kind of
18 fluid flow would that be?

19 A. It's called an oscillatory stokes
20 flow, if you want to know the real name of it. 09:53
21 But it's just a circumferential flow that's
22 changing direction back and forth without
23 moving. So it's not serpentine, to use that --
24 that word.

25 Q. Okay. So then what is the difference 09:53

1 between a circumferential fluid flow and a
2 helical fluid flow?

3 A. Motion along the axis of the device,
4 in my opinion.

5 Q. What axis? 09:53

6 A. A longitudinal axis of the device.

7 Q. In a circumferential fluid flow,
8 doesn't the fluid have to flow along the
9 longitudinal axis to exit the silencer?

10 A. Yes. 09:53

11 Q. So then what's the difference?

12 A. Well, that -- it can be
13 circumferential and moving in only one
14 direction, clockwise or counterclockwise, and
15 moving along the axis, and that would be 09:54
16 helical.

17 Q. Say that again.

18 A. A circumferential flow moving in
19 either a clockwise or counterclockwise direction
20 exclusively, which also then moves along the 09:54
21 axis around which it's rotating would be a
22 helical flow.

23 Q. The axis being the longitudinal axis?

24 A. Of the device.

25 Q. Of the device? 09:54

1 A. Correct.

2 MR. ROESER: We've been
3 going about an hour. Are you good?
4 Do you want to take a break?

5 MR. DEZERN: Up to you. 09:55

6 MR. ROESER: Keep going?
7 Okay.

8 Q. (BY MR. ROESER) All right. Let's
9 move back to your claim construction section in
10 your declaration. 09:56

11 A. Okay.

12 Q. That's paragraph 63.

13 A. Okay. I'm there.

14 Q. And you discuss at least one claim
15 element? 09:56

16 A. Yes.

17 Q. And you understand the Board has
18 found that at least one of claim element means
19 only axially serpentine or radially serpentine
20 need to be present, not both, correct? 09:56

21 A. That's correct.

22 Q. Okay. So for piece of prior art to
23 meet that claim element, it must either show
24 just axially serpentine or just radially
25 serpentine, not both, correct? 09:56

1 A. It could still show both.

2 Q. It could still show both?

3	A. Yes.
---	---------

4 Q. But only needs to show one?

5	A. That's correct.	09:56
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6 Q. Okay. All right. And then the next
7 sort of combination of terms you discuss starts
8 at paragraph 64?

9	A. Yes.
---	---------

10 Q. Which is the common off axis chamber 09:57
11 and the plurality of deflectors. Do you see
12 that?

13	A. Yes.
----	---------

14 Q. You don't provide an opinion as to
15 the meaning of those terms, correct? 09:57

16	A.	No.
----	----	-----

17 Q. Okay. And then let's talk about
18 fluid --

19 A. Well, let me pause on that. We imply
20 -- I imply that Mr. Nixon is trying to combine 09:57
21 the deflectors and the off axis chamber into a
22 single element, and we disagree with that.

23 Q. Okay. But you don't set forth your
24 own opinion as to what the definition of those
25 two terms are? 09:57

1 A. Not there, no.

2 Q. Okay. And not anywhere in your
3 declaration?

4 A. Not that I recall.

5 Q. All right. So the next term you 09:57
6 discuss in that section -- actually, I want to
7 stay on that for a second. No, no, no. Sorry.
8 We're going to the fluid outlet term next.

9 A. Okay.

10 Q. And if you'll look at paragraph 75. 09:58
11 So in your opinion, the fluid outlet that's the
12 claim element in the claim of the '750 patent
13 must simply allow fluids to escape the off axis
14 chamber without returning to the central
15 chamber? 09:58

16 A. Correct.

17 Q. Okay. So put another way, the fluid
18 outlet allows the fluid to escape from the off
19 axis chamber without returning to the central
20 chamber, but it doesn't preclude fluids from 09:58
21 returning to the central chamber?

22 A. Correct.

23 Q. Okay. Now let's look at Claim 18 of
24 the '750 patent.

25 A. Okay. 09:58

1 Q. It should be on the last page.

2 A. Okay.

3 Q. I'll give you a second to read it.

4 A. Yes.

5 Q. So Claim 18 is the Device Claim 1 09:59

6 wherein the outer shell includes an end cap

7 assembly and an outlet end of the central

8 chamber in which it allows fluid to escape from

9 the off axis chamber through the fluid outlet,

10 the fluid outlet being only accessible to the 09:59

11 fluid in the common off axis chamber.

12 A. Yes.

13 Q. Okay. So there is a negative

14 limitation in that with respect to the fluid

15 outlet in Claim 18, correct? 09:59

16 A. Yes.

17 Q. So the fluid outlet being only

18 accessible to the fluids in the common off axis

19 chamber?

20 A. Correct. 10:00

21 Q. You agree Claims 1, 19, and 22, which

22 are the independent claims of the '750 patent,

23 do not contain that same negative limitation

24 with respect to the fluid outlet element?

25 A. Correct. That's the reason for 10:00

1 Claim 18.

2 Q. Okay. So the fluid outlet recited in
3 Claims 1, 19, and 22, those are broader than the
4 fluid outlet in Claim 18, correct?

5 A. Yeah, you sort of alluded to that a 10:00
6 couple of minutes ago when you said the fluid
7 outlet allows fluids to escape from the off axis
8 chamber. It does not preclude fluids from going
9 back into the central chamber.

10 Q. In the -- 10:00

11 A. And --

12 Q. Sorry, go ahead.

13 A. No, that's it.

14 Q. And then so the fluid outlet with the
15 negative limitation of Claim 18 in mind, the 10:00
16 fluid outlet in Claims 1, 19, and 22, that would
17 capture fluid outlets which are accessible to
18 fluids from the central chamber?

19 A. Say again.

20 Q. So the fluid outlet in Claims 1, 19, 10:01
21 and 22, because it doesn't have that negative
22 limitation --

23 A. Yes.

24 Q. -- they would -- that fluid outlet
25 would be accessible to fluids from the central 10:01

1 chamber, right?

2 A. They have to first get into the outer
3 chamber because there's no way to get to the
4 outlet without going through the outer chamber.

5 Q. Right. So the fluids from the 10:01
6 central chamber can --

7 A. Could move to the outer chamber and
8 then escape to the fluid outlet, yes.

9 Q. Okay. All right. Let's switch
10 gears. Let's talk about the technology 10:02
11 background section of your declaration. It
12 starts at paragraph 76.

13 A. Okay.

14 Q. You discuss, among other things, some
15 of the perceived differences in energy 10:02
16 suppression devices for use with automobiles
17 versus firearms, correct?

18 A. Correct.

19 Q. Okay. You weren't asked to opine on
20 whether or not muffler prior art patents were 10:02
21 analogous to the '750 patent, right?

22 A. Correct, I was not.

23 Q. So you're just discussing the
24 differences generally, you don't go so far as to
25 say mufflers are not analogous art to the '750 10:03

1 patent?

2 A. Correct.

3 Q. Okay. Let's look at paragraph 79.

4 A. Okay.

5 Q. And there you're discussing the noise 10:03

6 levels, firearms.

7 Do you see that?

8 A. Yes.

9 Q. You don't cite anything to support

10 the information included in paragraph 79, do 10:03

11 you?

12 A. No, I don't.

13 Q. And, in fact, you don't cite support

14 for any of the opinions you include in this

15 section, correct? 10:03

16 A. No, strictly based upon my experience

17 and expertise.

18 Q. Do you have -- so you have personal

19 knowledge regarding the decibel levels produced

20 by firearms? 10:04

21 A. No, I actually looked that up.

22 Q. Okay. And you didn't provide us with

23 where you got that information from?

24 A. No, sorry, I did not.

25 Q. You have not done any testing on any 10:04

1 firearms to confirm that decibel level?

2 A. No.

3 Q. Similarly, you don't have personal
4 knowledge regarding decibel levels produced by
5 automobile engines? 10:04

6 A. Correct.

7 Q. You didn't do any testing to confirm
8 the decibel levels of automobile engines?

9 A. Correct.

10 Q. And you found that information by 10:04
11 looking up somewhere that we don't know because
12 it was not provided for in your declaration?

13 A. Correct.

14 Q. Okay. Let's look at paragraph 83.
15 The last sentence in paragraph 83 you're 10:05
16 discussing the purpose of mufflers, and you
17 state that this purpose would compel a structure
18 that directs all gases through the exit of the
19 muffler in a suitable direction.

20 Do you see that? 10:05

21 A. Yes.

22 Q. And that's important particularly
23 with mufflers because the gases from an
24 automobile engine are noxious, right?

25 A. Correct. 10:05

1 MR. ROESER: All right.

2 Let's take a break.

3 (Recess 10:05 a.m. to 10:17 a.m.)

4 Q (BY MR. ROESER) Dr. Neitzel, you
5 understand we're back on the record and you're 10:17
6 still under oath?

7 A. Yes.

8 Q. Okay. A few questions back -- I want
9 to turn back real quick to -- we were talking
10 about noxious gases. It's important in your 10:17
11 opinion for mufflers to have a distal exit end
12 because of the noxious gases, correct?

13 A. Correct.

14 Q. Are the gases produced by a firearm
15 noxious? 10:17

16 A. To my understanding, they are. They
17 certainly have combustion particulates in them
18 that could be harmful.

19 Q. So combustion particulates make a gas
20 noxious? 10:18

21 A. And any other gases that may be
22 produced as part of the combustion.

23 Q. The gases from a firearm aren't the
24 same type of gases that are produced from an
25 automobile, correct? 10:18

1 A. I wouldn't think so. There could be
2 carbon monoxide in that. I'm just not sure.

3 Q. You just don't know -- in your
4 experience, you're not aware of the differences
5 between the gases produced from a firearm and an 10:18
6 automobile?

7 A. Correct.

8 Q. Okay. And I want to go back to the
9 fluid outlet element that we were talking about
10 before we move on. Okay. We talked about 10:18
11 Claim 18 has that negative limitation of the
12 fluid outlet, correct?

13 A. Yes.

14 Q. It's that fluid outlet being only
15 accessible to the fluid in the common off axis 10:19
16 chamber?

17 A. Yes.

18 Q. Okay. And Claims 1, 19, and 22 don't
19 have that negative limitation?

20 A. Right. 10:19

21 Q. So they would theoretically be
22 accessible to gases from the central chamber,
23 right?

24 A. Yes, and vice versa. I mean, gases
25 in the off axis chamber could conceivably fall 10:19

1 back in the central chamber, I guess.

2 Q. Got it. So they would be accessible
3 to fluids from the central chamber?

4 A. Yes.

5 Q. Okay. All right. Let's talk about 10:19
6 the prior art references. That's Section 9 of
7 your declaration. It starts with paragraph 85.

8 A. Okay.

9 Q. All right. So I first want to talk
10 about Thurler. And if you'll actually pull up 10:19
11 the -- Thurler is T-h-u-r-l-e-r.

12 A. Yeah.

13 Q. And if you pull up the institution
14 decision, which is paper 7 in this IPR
15 proceeding, and let's go to page 22. 10:20

16 A. Okay.

17 (Exhibit No. 1015 introduced.)

18 Q. (BY MR. ROESER) So in this section of
19 the institution decision, you understand the
20 Board's discussing Ground 1 of the petition 10:20
21 which said that certain claims of the '750
22 patent were anticipated by Thurler?

23 A. Correct.

24 Q. Okay. And the Board found sort of at
25 the bottom of page 22 and the top of page 23 10:20

1 it's discussing the claim element of Claim 1 of
2 the '750 patent that recites, "then energy
3 capture and control device."

4 Do you see that?

5 A. Yes. 10:21

6 Q. And the Board found that Thurler
7 disclosed an energy capture and control device?

8 A. Yes.

9 Q. Do you agree with that?

10 A. Yes. 10:21

11 Q. Okay. And in particular, Thurler
12 relates to an energy caption and control device
13 for a weapon, correct?

14 A. Correct.

15 Q. And because it's relating to a 10:21
16 weapon, the high energy material that Thurler is
17 dealing with includes a projectile and gases,
18 correct?

19 A. Correct.

20 Q. Okay. All right. And then going 10:21
21 down to the next claim element that the Board
22 discusses with respect to Thurler, that's the
23 central chamber claim element of Claim 1?

24 A. Yes.

25 Q. Do you see that? 10:21

1	A. Yes.
---	---------

2 Q. And the Board found that Thurler
3 disclosed that claim element.

4	Do you see that?
---	------------------

5	A. Yes.	10:22
---	---------	-------

6	Q. Do you agree with that?
---	----------------------------

7	A. I do.
---	----------

8 Q. Okay. And then the next claim
9 element is the common off axis chamber that's on
10 page 23 of the institution decision. 10:22

11	Do you see that?
----	------------------

12	A. Yes.
----	---------

13 Q. And the Board found that Thurler
14 disclosed that claim limitation.

15	Do you agree with that?	10:22
----	-------------------------	-------

16	A. I do.
----	----------

17 Q. And then the next claim element is
18 the off axis chamber starting on page 24. The
19 Board found Thurler disclosed that claim
20 element. 10:22

21 Do you agree with that?

22	A. Yes.
----	---------

23 Q. Okay. The axially serpentine claim
24 element also on page 24, the Board found that
25 Thurler disclosed an axially serpentine fluid 10:22

1 pathway.

2 Do you agree with that?

3 A. I do.

4 Q. Okay. Then going down to page 26,
5 the plurality of deflectors claim orientation, 10:23
6 do you see where the Board discusses that with
7 respect to Thurler?

8 A. At the bottom of page 26?

9 Q. Yes, sir. Continues to the top of
10 page 27. 10:23

11 A. Okay. Yes.

12 Q. And the Board found that Thurler
13 disclosed that claim limitation.

14 Do you agree with that?

15 A. Yes. 10:23

16 Q. All right. Then the Board on page 27
17 then turns to discuss the additional claim
18 elements in Claim 19 that are different than
19 Claim 1.

20 Do you see that? 10:23

21 A. Yes.

22 Q. And then on the bottom of page 27,
23 the top of page 28, the Board discusses the
24 plurality of orifices claim element in Claim 19.

25 Do you see that? 10:23

1 A. Yes.

2 Q. And the Board found that Thurler
3 disclosed that claim element.

4 Do you agree with that?

5 A. Yes. 10:24

6 Q. Also on page 28, the defectors
7 recitation of Claim 19, do you see where the
8 Board discusses that?

9 A. Yes.

10 Q. They found that Thurler disclosed 10:24
11 that claim element.

12 Do you agree with that?

13 A. Yes.

14 Q. And then on page 29 the Board
15 discusses Claim 22. 10:24

16 Do you see that?

17 A. Uh-huh.

18 Q. And Claim 22 includes the same
19 element for Claim 1 and 19 that they previously
20 discussed, they found that Thurler disclosed all 10:24
21 of the claim elements of Claim 22?

22 A. Yes.

23 Q. Do you agree with that?

24 A. Yes.

25 Q. Okay. 10:24

1 A. With the exception of radially
2 serpentine.

3 Q. Yes, yes. The ones we discussed
4 where you --

5 A. The ones we discussed, right. 10:24

6 Q. Do you agree that they were
7 disclosed, all of those?

8 A. Yes.

9 Q. I understand the Board found that
10 Thurler did not disclose radially serpentine? 10:24

11 A. Correct.

12 Q. And you agree with that?

13 A. Yes, I do.

14 Q. Okay. Let's turn to -- back to your
15 declaration. Sorry for bouncing you around. 10:25
16 Let's go to where you discuss the grounds for
17 invalidity that were set forth in the petition
18 that is Section 10 of your report, starting at
19 paragraph 99.

20 A. Okay. 10:25

21 Q. As a whole, the opinions that you
22 have with respect to the grounds of invalidity
23 set forth in the petition, all of your opinions
24 are set forth in Section 10 of your declaration?

25 A. Correct. 10:25

1 Q. Okay. And for Ground 1, the only
2 claims you discuss are his Claim 9; is that
3 correct?

4 A. Yes.

5 Q. And you understand Petitioner's 10:26
6 Ground 1 covered more claims than just Claim 9?

7 A. Yes.

8 Q. Or you only discuss Claim 9?

9 A. Yes.

10 Q. Okay. Same thing with Ground 2? 10:26

11 A. Right.

12 Q. You understand Petitioner's Ground 2
13 covered more claims than just Claims 6 and 9,
14 but in your declaration you only discuss Claims
15 6 and 9? 10:26

16 A. Yes.

17 Q. Let's turn to Ground 3, and I want to
18 look at paragraph 122.

19 A. Okay.

20 Q. Okay. Paragraph 122 there is a 10:26
21 reproduction of depiction of Thurler's figure;
22 is that correct?

23 A. Correct, with an additional shell.

24 Q. Right. With annotations from the
25 petition? 10:27

1 A. Yes.

2 Q. So your opinions set forth in
3 paragraph 122, you dispute whether a POSITA
4 would have reason to modify Thurler in the way
5 that's depicted in that figure, right? 10:27

6 A. Correct.

7 Q. But you don't dispute that if Thurler
8 were modified in that way, that it would have
9 shown every claim element of Claim 18?

10 A. I have not considered it from that 10:27
11 review.

12 Q. Right. You don't say -- your opinion
13 is not that it wouldn't meet every claim
14 element; your opinion is that a POSITA wouldn't
15 have made that modification? 10:27

16 A. That's correct.

17 Q. And you've indicated that the
18 modification to this -- to Thurler depicted in
19 this figure in paragraph 122 of your
20 declaration, it maintains the downward direction 10:27
21 of the fluid outlet?

22 A. Correct.

23 Q. And there is no -- nothing in Claim 1
24 or 18 dictate the direction in which the gas
25 escapes from the common off axis chamber, right? 10:28

1 A. Let me look at the claims quickly.
2 That's correct.

3 Q. Okay. So downward exit as depicted
4 in Thurler's figure in paragraph 122 of your
5 declaration, that doesn't somehow fall outside 10:28
6 of the scope of Claim 1 or 18?

7 A. Correct.

8 Q. All right. Ground 4, which is
9 paragraph 125, again, you understand
10 petitioner's Ground 4 covers more claims than 10:28
11 the ones you discussed, right?

12 A. Yes.

13 Q. But you only discuss Claims 6, 9, 12,
14 13, 14, and 20 with respect to Ground 4?

15 A. Correct. 10:29

16 Q. Okay. I actually want to look at
17 paragraph 130 real quick within your Ground 4,
18 and it's the depiction from the prior art
19 reference Barlowatz.

20 Do you see that? 10:29

21 A. Yes.

22 Q. That's Exhibit 1018, that's where the
23 figure is from. In terms of fluid flow that we
24 discussed earlier, what fluid flow is depicted
25 by Barlowatz? 10:29

1 Q. Right. So that the fluid outlet is
2 at the outlet end of the silencer?

3 A. Yes.

4 Q. Okay. Ground 5, back to your
5 declaration, starts at paragraph 135. Again, 10:31
6 you understand that Ground 5 in the petition
7 covered more claims than just Claim 9, but you
8 only have opinions with respect to Ground 5 as
9 it relates to Claim 9?

10 A. And 20. 10:31

11 Q. And 20, sorry.

12 A. Yes.

13 Q. Same thing with Ground 6, starts on
14 paragraph 142. You only --

15 A. Correct. 10:31

16 Q. You only discuss Ground 6 with
17 respect to Claims 9 and 20, not any other
18 grounds that were covered by ground -- not in
19 any of the other claims covered by Ground 6?

20 A. Right. 10:31

21 Q. Ground 7 was just Claim 18. So you
22 did cover all the claims that were covered by
23 Ground 7. Ground 8, starting at paragraph 150,
24 you only discuss Ground 8 with respect to -- oh,
25 sorry, let me correct that. Ground 7 only 10:32

1 covers Claim 2. You discuss Ground 7 with Claim
2 2, not Claim 18?

3 A. Right.

4 Q. I apologize. Ground 8, you only
5 discussed Ground 8 and only set forth opinions 10:32
6 with respect to Ground 8 as it related to Claims
7 3, 9, and 19, not --

8 A. 18, yeah.

9 Q. 3, 9, and 18, not the other claims of
10 Ground 8? 10:32

11 A. Correct.

12 Q. Okay. All right. The next section,
13 which is Section 11 of your declaration, you're
14 discussing --

15 A. Can you give me a page number? 10:32

16 Q. Oh, sorry. Paragraph 159 starts at
17 page 60.

18 A. Got it.

19 Q. In this section of your report, you
20 set forth your opinions as they relate to 10:32
21 HUXWRX's motion to amend; is that correct?

22 A. That's correct.

23 Q. And all of your opinions are set
24 forth in this section as they relate to HUXWRX's
25 motion to amend? 10:33

1 A. Correct.

2 Q. Let's turn to paragraph 161. And in
3 this section of your declaration, you discuss
4 and provide your opinions with respect to
5 whether or not the proposed substitute claims 10:33
6 are supported by the disclosures of the
7 application for the '750 patent?

8 A. Right.

9 Q. All right. Let's look at
10 paragraph 175. 10:34

11 A. All right.

12 Q. All right. So in paragraph 175, you
13 point to Figure 1a as disclosing an axially
14 serpentine configuration; is that correct?

15 A. Correct. 10:34

16 Q. And that Figure 1a is a silencer with
17 an off axis chamber having multiple concentric
18 tubes, correct?

19 A. Correct.

20 Q. Are there any other figures in the 10:34
21 '989 application that depict an axially
22 serpentine fluid pathway?

23 It starts on page 267 of --

24 A. Of this?

25 Q. -- Exhibit 1004, I think is where the 10:35

1 figures start.

2 A. 267?

3 Q. They're the same figures that are in
4 the '750 patent.

5 A. Yeah, but let me just look at -- 10:35
6 since you asked me about this, let me just look
7 at this. Okay. 1a is the one on 267. Figure
8 16 is axially serpentine.

9 Q. Figure 16 as well?

10 A. Correct. 10:36

11 Q. And that is silencer that does not
12 have multiple concentric tubes, correct?

13 A. Correct.

14 Q. And that's axially serpentine because
15 the fluid flows up and down the length of the 10:36
16 silencer?

17 A. Correct.

18 Q. Okay. No other figures in 8 -- 989
19 -- sorry, strike that.

20 No other figures in the '989 10:36
21 application that depict an axially serpentine
22 fluid pathway?

23 A. Not that I can see offhand, no.

24 Q. And in paragraph 176 you point to
25 Figure 14 -- 10:36

1 A. Right.

2 Q. -- as depicting a radially serpentine
3 fluid flow?

4 A. Correct.

5 Q. Are there any other figures in the 10:37
6 '989 application that depict a radially
7 serpentine fluid flow?

8 A. I believe not.

9 Q. Okay. And the Figure 14 has multiple
10 concentric tubes, correct? 10:37

11 A. Concentric shells.

12 Q. Concentric shells.

13 A. Yeah. They aren't complete tubes.

14 Q. So Figure 14 has multiple concentric
15 shells? 10:37

16 A. Yes.

17 Q. Let's look at paragraph 182.

18 A. All right.

19 Q. And that is your opinions based on
20 the written descriptions support for Claim 24? 10:38

21 A. Right.

22 Q. So for Claim 24, which is identical
23 to Claim 2, other than the claim from which it
24 depends, right?

25 A. I'm sorry, say again? 10:38

1 Q. Yeah, sorry. The claim language of
2 Claim 2 and Claim 24 are the same --
3 A. I believe so.
4 Q. -- other than what claim depends
5 from? 10:38
6 A. Correct.
7 Q. With respect to Claim 24, the
8 configuration for this claim would require a
9 silencer with multiple concentric shells or
10 tubes in the off axis chamber, right? 10:38
11 A. Let me read it.
12 Q. Okay.
13 A. This is specifically oriented to the
14 depiction in Figure 14 where --
15 Q. Right. Go ahead. Sorry, I didn't 10:39
16 mean to interrupt.
17 A. In which there are multiple
18 concentric shells.
19 Q. Okay. You couldn't have sub-chambers
20 being nonlinear in their connected if there were 10:39
21 no concentric shells, right?
22 A. Yeah, that's -- that's strange
23 language, they're "non-linearly interconnected."
24 I guess I would agree with that.
25 Q. Let's go back to paragraph 123 of 10:39

1 your declaration.

2 A. Okay.

3 Q. You still -- that's still your

4 opinion --

5 A. Yes. 10:40

6 Q. -- what you describe in paragraph

7 123?

8 A. Yes.

9 Q. So in paragraph 23 [sic], the last

10 sentence, you still stand by that statement? 10:40

11 A. "Thurler itself notes that

12 experimental results confirm its device does not

13 interfere with automatic reloading or obstruct

14 the sight c that projects over the device."

15 Yes. 10:41

16 Q. Is that paragraph 123?

17 A. Yes.

18 Q. Okay, sorry.

19 A. That's what you asked me about.

20 Q. I said paragraph 23. I meant to say 10:41

21 paragraph 123. So we're discussing paragraph

22 123. You still -- those are still your opinions

23 contained in paragraph 123?

24 A. Yes.

25 Q. Okay. So the phrase "these 10:41

1 conditions" in that sentence refers to not
2 interfering with automatic reloading or
3 obstructing the sight that projects over the
4 device?

5 A. I don't see the phrase "these 10:41
6 conditions" in that sentence.

7 Q. I think they're in the sentence right
8 before.

9 A. In 123?

10 Q. Let me see. 10:41

11 A. I still don't see the words "these
12 conditions." This is paragraph 123 of my
13 declaration. I'll read the whole paragraph.
14 "Petitioner's assertion that one of ordinary
15 skill would further add the outermost tube from 10:42
16 Bouton's muffler finds no motivation in either
17 reference. And doing so would potentially
18 undermine the benefits of Thurler. Thurler
19 itself notes that experimental results confirm
20 its device does not interfere with automatic 10:42
21 reloading or obstruct the sight c that projects
22 over the device." There is no phrase "these
23 conditions" in that.

24 Q. Okay. So the last sentence of
25 paragraph 23 [sic], the last two words? 10:42

1 A. "The device."

2 Q. Yeah, sorry. Go down --

3 A. Sorry. I'm sorry. It continues on
4 to the next page. Okay. "A fundamental design
5 change such as moving the location and direction 10:42
6 of the fluid outlet as Petitioner proposes could
7 not be expected to maintain these conditions."
8 Yes.

9 Q. Right. So "these conditions" in that
10 last sentence, you're referring to the device 10:43
11 not interfering with automatic reloading or
12 obstructing the sight?

13 A. Correct.

14 Q. Okay. So is it your testimony that
15 modifying the suppressor of Thurler to include 10:43
16 the forward-facing fluid outlet taught by Bouton
17 would interfere with automatic reloading?

18 A. This was Barlowatz, was it not? Oh,
19 wait a minute. Figure 2. Paragraph 124 says,
20 "As Figure 2 of Bouton shows, adding the 10:43
21 outermost tube from Bouton's muffler to Thurler
22 would cause the device to obstruct Thurler's
23 sight c, which Thurler explicitly avoids."

24 So I guess that's my opinion.

25 Q. Would doing so, would modifying 10:44

1 Thurler to include that forward-facing fluid
2 outlet, would that interfere with automatic
3 reloading of the weapon?

4 A. No, but it might obscure the sight.

5 Q. So it wouldn't interfere with 10:44
6 automatic reloading?

7 A. Not necessarily, no.

8 Q. What does "not necessarily" mean?

9 A. Could I look at the --

10 Q. Yeah, for sure. 10:44

11 A. -- Bouton figure? Can you point me
12 to the Bouton figure? It will make it easier
13 for me.

14 Q. I've got Bouton for you here.

15 A. Page 34, is that it? 10:44

16 Q. Yes. And there's Bouton itself,
17 which is Exhibit 1016.

18 A. Great. Thank you.

19 (Exhibit No. 1016 introduced.)

20 Q (BY MR. ROESER) Okay. Are you good? 10:44

21 A. Yes.

22 Q. So is it your opinion that modifying
23 the suppressor of Thurler to include that
24 forward-facing fluid outlet taught by Bouton,
25 would that interfere with automatic reloading of 10:45

1 the weapon?

2 A. Not that I can see.

3 Q. Okay.

4 A. I have a problem with how the bullet
5 gets out of that device. 10:45

6 Q. So the only reason not to combine
7 Thurler and Bouton for Thurler's suppressor to
8 include that fluid outlet would be to not
9 interfere with the sight?

10 MR. DEZERN: Objection, 10:45
11 form.

12 A. Correct. That's one reason. The
13 other is it's going to require substantial
14 modifications to the device of Bouton to make it
15 work as a suppressor. 10:45

16 Q (BY MR. ROESER) And those are your
17 opinions set forth in that section of your
18 declaration?

19 A. I didn't say that in that section.
20 I'm stating it now. 10:46

21 Q. Okay. But that's not included in
22 your declaration?

23 A. Correct.

24 Q. Okay. Repeat that new opinion that
25 you have sitting here today. 10:46

1 MR. DEZERN: Objection,
2 form.

3 A. I said I believe it would require
4 significant modifications to the Bouton device
5 in order to get it to work as a suppressor for a 10:46
6 firearm.

7 Q (BY MR. ROESER) Right, yeah. That's
8 not -- I mean...

9 A. It would require undue
10 experimentation for a POSITA in order to 10:46
11 accomplish that, in my opinion.

12 Q. To modify Bouton to fit onto a --

13 A. Correct.

14 Q. -- firearm?

15 A. Correct. 10:46

16 MR. ROESER: Okay. Let's
17 take a quick break. I'm going to
18 look at my notes. I think we're
19 pretty close. I just want to make
20 sure. 10:47

21 MR. DEZERN: Okay.

22 (Recess 10:47 a.m. to 11:00 a.m.)

23 Q (BY MR. ROESER) Dr. Neitzel, you
24 understand we're back on the record and you're
25 still under oath? 11:00

1	A. Yes.
---	---------

2 Q. Okay. Just a few follow-up
3 questions. I want to turn to paragraph 140 of
4 your declaration.

5	A. Okay.	11:00
---	----------	-------

6 Q. And here we're discussing -- or here
7 you are discussing Ground 5 and specifically
8 discussing Barlowatz?

9	A. Yes.
---	---------

10 Q. All right. In paragraph 140, your 11:01
11 opinion is that Barlowatz fails to disclose a
12 plurality of deflectors because there's a single
13 helical strip?

14	A. Correct.
----	-------------

15 Q. So the helical strip in your opinion 11:01
16 is one single deflector?

17	A. Correct.
----	-------------

18 Q. Why is that not multiple deflectors?

19	A. The flow hits that strip and then	
20	migrates along that strip. It never sees a	11:01
21	break to see a second deflector. It's just in	
22	contact with the strip the entire way.	

23 Q. So if a deflector is a single piece,
24 it constitutes a single deflector?

25	A. I think so.	11:02
----	----------------	-------

Q. The -- the -- each helical or each coil, you wouldn't consider that to be a deflector?

A. Each coil could be a second deflect-
-- another deflector, yes. 11:02

Q. Okay. So the individual coils themselves could be each their own separate deflector?

A. Yes.

Q. And say you had a helical wall going one direction and a helical wall going the other direction, they're not the same wall, that would be multiple deflectors?

A. Yes.

Q. Does a change in the direction of the fluid flow indicate that there's more than one deflector?

A. I haven't thought about it, but I guess it could indicate that there's more than one deflector. 11:03

Q. Can you think of a situation in which there's a change in direction without multiple deflectors?

A. I could have a deflector deflecting a
flow in helical patent and then terminate that 11:03

1 -- that deflector and then the flow might
2 migrate to a straight flow, and that would only
3 be one deflector.

4 Q. Okay. I want to go back to our
5 discussion about your definitions or your 11:03
6 opinions as to the definitions of some terms in
7 the '750 patent. What is the difference between
8 serpentine and radially serpentine, in your
9 opinion?

10 A. Serpentine we -- we discussed earlier 11:03
11 just implies a change in direction. I mean, it
12 comes from the word meaning snake-like, so it's
13 any changing in direction. Radially serpentine
14 means changing direction around an axis, a fixed
15 axis. In order to get over your earlier 11:04
16 confusions about that axis, I could think of,
17 say, a radial fin along the -- along the axis of
18 the silencer, a sheet attached to the inner
19 chamber, and that would define a fixed radius
20 for that particular thing. And so then if the 11:04
21 flow moved along that and went back and forth
22 around it, that would maybe make it easier to
23 interpret as radially serpentine.

24 Q. So in your opinion, a radially
25 serpentine fluid pathway is one in which it 11:04

1 crosses a radius at some point while it changes
2 directions?

3 A. Yes.

4 Q. Can you -- don't all serpentine --

5 A. Crosses a radius more than one -- in 11:04
6 more than one direction, sorry.

7 Q. Don't all serpentine fluid pathways
8 cross a radius in more than one direction --

9 A. No.

10 Q. -- if they're serpentine? 11:04

11 A. No.

12 Q. Which -- how could something be --

13 A. If I had a wall here that was
14 defining my radius all along the axis of the
15 device, and I went around it in a serpentine 11:05
16 fashion in only one helical direction, it would
17 only be crossing that in one direction.

18 Q. But it wouldn't be serpentine. So my
19 question is a little different. My question is:
20 How can something be serpentine but not radially 11:05
21 serpentine because doesn't every serpentine
22 fluid --

23 A. I didn't --

24 Q. -- pathway cross the --

25 A. -- I didn't call that serpentine. I 11:05

1 called it helical.

2 Q. Right, yeah. So I'm just trying to
3 figure out the difference in your opinion as to
4 the definitions of radially serpentine versus
5 serpentine. Setting aside helical right now. 11:05

6 A. Okay.

7 Q. So in your opinion, serpentine is
8 just a fluid pathway that changes directions?

9 A. Correct.

10 Q. A radially serpentine fluid pathway 11:05
11 is one which changes directions while also
12 crossing a radius?

13 A. Correct.

14 Q. So is there -- how can there be a
15 serpentine fluid pathway that does not cross the 11:05
16 radius in two different directions?

17 A. An axially serpentine pathway doesn't
18 cross the radius in two different directions.

19 Q. But isn't axially serpentine, it's
20 coming up and down the length of the silencer, 11:06
21 right?

22 A. You just asked me for an example of a
23 serpentine pattern.

24 Q. Right. But in -- yeah. So your
25 example of a serpentine pathway that was not 11:06

1 radially serpentine was an axially serpentine
2 fluid?

3 A. Yes.

4 Q. But an axially serpentine fluid
5 pathway, doesn't it cross the radius going in 11:06
6 two different directions?

7 A. No.

8 Q. How does it not?

9 A. It may be just going along the same
10 radius. 11:06

11 Q. But wouldn't it have to come -- it
12 would have had to come over at some point on --

13 A. If --

14 Q. -- around the circumference?

15 A. Once again, if I use this as a sheet 11:06
16 defining radii coming out from the center --

17 Q. So you're using a sheet of paper
18 right now demonstrating --

19 A. Yeah, I'm saying at any point along
20 the flow path the distance from here to here is 11:06
21 a radius.

22 Q. Right. But this is from the center
23 axis to the outer --

24 A. To this --

25 Q. -- edge? 11:06

1 A. To the end of my vector is a radius.
2 That vector can be in the fluid. It doesn't
3 have to end at a wall.

4 Q. Isn't the radius half the diameter?
5 So doesn't it go from the central point to an 11:07
6 outer edge?

7 A. No.

8 Q. It's not?

9 A. A radius is a -- is a coordinate in a
10 cylindrical spherical coordinate system. 11:07
11 Cylindrical or spherical coordinate system. So
12 it's just a coordinate as is drawn by Mr. Nixon
13 in his Figure 2, I should say. That's a radius.
14 It's a coordinate that extends outward from the
15 axis of symmetry to some point. It doesn't have 11:07
16 to end at a wall. It can end in the fluid.

17 Q. But it has to extend at least in some
18 direction along that radius from the center
19 point to some point along the --

20 A. That's what defines the radius. 11:07

21 Q. Right, and that's what I'm asking.

22 A. Yeah.

23 Q. It has to -- it has to travel from a
24 center point, a center axis, to some point along
25 that radius as it travels from the center point 11:07

1 to the outer --

2 A. What has to travel?

3 Q. The fluid flow.

4 A. Oh, I didn't say that.

5 Q. That's what I'm asking. 11:08

6 A. No, no.

7 Q. I'm trying to understand your

8 definition.

9 A. I'm saying the radius is a fixed

10 point space, and it can exist at multiple points 11:08

11 along that same axis of symmetry. It's a fixed

12 point. And the flow passes across that radius

13 in a counterclockwise to clockwise or vice versa

14 fashion at least once (indicating).

15 Q. And your -- your hand movement is 11:08

16 that it's crossing over it?

17 A. Yes, circumferentially.

18 Q. So it goes -- so radially serpentine

19 goes circumferentially crossing a radius --

20 A. Yes. 11:08

21 Q. -- in your opinion? And serpentine

22 is just a change of direction?

23 A. With a change of direction.

24 Q. With a change of direction.

25 A. Right. 11:08

1 Q. And then serpentine is just a change
2 of direction?

3 A. Is just a change of direction, right.

4 Q. Without traveling in a
5 circumferential manner? 11:08

6 A. No. Axially serpentine was the
7 example.

8 Q. Okay. Any other serpentine -- any
9 other examples of serpentine pathways that are
10 not radially serpentine pathways? 11:09

11 A. Not that come to mind immediately.

12 Q. Okay. And now I want to understand
13 the difference between your opinion as to what a
14 helical fluid flow and a circumferential fluid
15 flow are. 11:09

16 A. Okay. Helical flows flow
17 circumferentially but also longitudinally. A
18 circumferential flow could just be a back and
19 forth motion at a fixed longitudinal distance,
20 but we don't see any of those in the flows in 11:09
21 the silencers because everything is moving
22 toward the exit of the silencer.

23 Q. So we don't see a circumferential
24 fluid flow?

25 A. Not purely circumferential. 11:09

1 Q. We don't see a -- strike that.
2 We don't see a purely circumferential
3 fluid flow in your opinion in the '750 patent?
4 A. Not purely circumferential, no.
5 Q. And explain to me why you're 11:10
6 qualifying circumferential with purely.
7 A. Well, I gave you that example from
8 fluid mechanics of the oscillatory stokes flow
9 in the cylinder, and that is purely a back and
10 forth flow in the fate of direction if we look 11:10
11 at a cylindrical coordinate system. There's no
12 movement in the Z direction and there's no
13 movement in the R direction. It's just in the
14 theta direction.
15 Q. A purely circumferential fluid flow 11:10
16 is impossible to achieve in the context of a
17 silencer, right?
18 A. I would think so.
19 Q. Okay. That's just a theoretical
20 fluid flow? 11:10
21 A. Yes.
22 Q. And that's not disclosed in the '750
23 patent?
24 A. No.
25 Q. And then tell me again what helical 11:10

1 flow is in your opinion.

2 A. Circumferential flow plus axial flow
3 with no change of direction.

4 Q. With no change of direction. But
5 once you have that circumferential flow with an 11:10
6 axial movement which meets your definition of
7 helical and you reverse that direction, that
8 helical flow then becomes a radially serpentine
9 fluid flow in your opinion?

10 A. Yes. 11:11

11 Q. In your opinions in your declaration,
12 do you apply that definition of radially
13 serpentine in forming your opinions?

14 A. Yes.

15 Q. And that's throughout your 11:11
16 declaration?

17 A. Yes.

18 MR. ROESER: Okay. I have
19 no other questions right now.

20 MR. DEZERN: No questions 11:11
21 for you.

22 (Deposition concluded at 11:12 a.m.)
23
24
25

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CHANGES AND SIGNATURE

G. PAUL NEITZEL, PHD

07/09/2025

PAGE	LINE
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CHANGE

REASON

This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the entire width of the page. There are no margins, text, or other markings present.

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SIGNATURE BY WITNESS

I, G. PAUL NEITZEL, PHD, have read
the foregoing deposition and hereby affix my
signature that same is true and correct, except
as noted above.

G. PAUL NEITZEL, PHD

THE STATE OF _____)
COUNTY OF _____)

Before me, _____, on
this day personally appeared G. PAUL NEITZEL,
PHD, known to me (or proved to me under oath or
through _____ (description of identity
card or other document) to be the person whose
name is subscribed to the foregoing instrument
and acknowledged to me that they executed the
same for the purposes and consideration therein
expressed.

Given under my hand and seal of
office this _____ day of _____, 2025.

NOTARY PUBLIC IN AND FOR
THE STATE OF TEXAS

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UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

SILENCERCO WEAPONS	*	
RESEARCH, LLC	*	
	*	
VS.	*	IPR 2024-01214
	*	PATENT 8,286,750 B1
HUXWRX SAFETY CO. LLC	*	

REPORTER'S CERTIFICATION
DEPOSITION OF G. PAUL NEITZEL, PHD
JULY 9, 2025

I, GAIL SPURGEON, Certified
Shorthand Reporter in and for the State of
Texas, hereby certify to the following:
That the foregoing deposition of G.
PAUL NEITZEL, PHD was reported by me
stenographically at the time and place
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a party before the completion of the deposition
and is to be returned within 30 days from date
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attached Changes and Signature Page contains any
changes and the reasons therefor;
_____ was not requested by the
deponent or a party before the completion of the
deposition;

I further certify that the amount of time
used on the record:
JEFFREY ROESER 1:41

1 I further certify that I am neither
2 counsel for, related to, nor employed by any of
3 the parties or attorneys in the action in which
4 this proceeding was taken, and further that I am
5 not financially or otherwise interested in the
6 outcome of the action.

7
8 Given under my hand this the
9 14th day of July, 2025.
10



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3 July 14, 2025

4 RE: Silencerco Weapons Research, Llc vs. Huxwrx Safety Co. Llc

5 DEPOSITION OF: G. Paul Neitzel, Ph.D. (#7448945)

6 The above-referenced witness transcript is
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[& - 39]

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[right - serpentine]

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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