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Transcript of Michael L. Metzker, Ph.D.

Date: December 3, 2025
Case: Qiagen Sciences, LLC -v- Tecan Genomics, Inc. (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 _____

3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4

5 QIAGEN SCIENCES, LLC,

6 Petitioner,

7 vs.

8 TECAN GENOMICS, INC.,

9 Patent Owner.

10 _____

11 IPR2025-00026; -00027; -00028; -00029

12 U.S. Patent No. 10,036,012

13

14 DEPOSITION OF MICHAEL L. METZKER, Ph.D.

15 via videoconference

16 Wednesday, December 3, 2025

17 12:46 p.m. EST

18

19 Job No.: 610711

20 Pages: 1 - 134

21 Stenographically Reported By:

22 Alison C. Webster, CSR-6266, RPR, RMR, CRR, RDR

1 Videotaped deposition of MICHAEL L. METZKER,
2 Ph.D., produced as a witness at the instance of the
3 Patent Owner, and duly sworn, was taken in the
4 above-styled and numbered cause on Wednesday,
5 December 3, 2025, from 12:46 p.m. EST to 4:03 p.m.
6 Eastern Time, before Alison C. Webster, RPR, CRR,
7 RMR, RDR, CSR-6266 (Michigan); License No. 14559
8 (California); License No. 084.004953 (Illinois);
9 CSR-12432 (Texas), reported by stenographic method,
10 via videoconference, pursuant to the Federal Rules
11 of Civil Procedure and the provisions stated on the
12 record or attached hereto.
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1 T A B L E O F C O N T E N T S

2 Witness Page
3 MICHAEL L. METZKER, Ph.D.
4 EXAMINATION
5 BY MR. BEAVERS: 11
6
7
8 E X H I B I T I N D E X

9 Exhibit Page
10 (Exhibits attached to transcript.)
11 EXHIBIT 2201 54
12 Civil Docket For Case
13 #: 1:18-cv-01019-MN
14 EXHIBIT 2202 56
15 Plaintiffs' Identification of Accused
16 Products
17
18
19
20
21
22

1 E X H I B I T I N D E X C O N T I N U E D

2 EXHIBIT 2203 62
3 Declaration of Eric J. Rutt in
4 Support of Plaintiffs' Motion For
5 Partial Summary Judgment of No
6 Invalidity as to U.S. Patent No.
7 10,450,597 and to Strike and Preclude
8 Testimony
9 EXHIBIT 2204 62
10 Case 1:18-cv-01019-MN Document 338-1
11 Filed 03/08/21
12 EXHIBIT 2205 62
13 Case 1:18-cv-01019-MN Document 338-2
14 Filed 03/08/21
15 EXHIBIT 2206 80
16 Defendants' Opposition to Plaintiffs'
17 Motion For Injunction, Ongoing
18 Royalty, Supplemental Damages, Pre-
19 and Post-Judgment Interest, and
20 Enhanced Damages
21
22

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E X H I B I T I N D E X C O N T I N U E D

EXHIBIT 2207 84
Brief For Defendants-Appellants
EXHIBIT 2208 90
Article, Targeted Single Primer
Enrichment Sequencing with Single End
Duplex-UMI
EXHIBIT 2209 102
Pub. No: US 2025/0002900 A1 - Lader
EXHIBIT 2210 102
European Patent Specification
EP 3 362 577 B1
EXHIBIT 2211 102
Document, Reply to the Communication
Pursuant to Article 94(3) EPC Dated
18 June 2020
EXHIBIT 2212 102
Patent No.: US 10,941,438 B2 - Wang

1 DEPOSITION OF MICHAEL L. METZKER, Ph.D.
2 Wednesday, December 3, 2025
3
4 STENOGRAPHER: The attorneys
5 participating in this deposition and the
6 witness have verified that he is Michael
7 Metzker, Ph.D. In lieu of an oath
8 administered in person, the witness will
9 visually affirm his testimony in this matter
10 is under penalty of perjury.
11 The parties and their counsel consent
12 to this arrangement and waive any objections
13 to this manner of reporting or admissibility
14 of the transcript.
15 Would counsel please state their
16 appearance and any objections to proceeding in
17 this manner, starting with scheduling counsel.
18 MR. BEAVERS: This is Timothy Beavers
19 on behalf of Tecan Genomics Incorporated, the
20 patent owner in this proceeding. I am joined
21 by two of my colleagues, Linnea Cipriano and
22 Samuel Herron.

1 MR. BILSKER: It's David Bilsker for
2 Petitioner, and I'll note that it still says
3 on our screen that this meeting is being
4 recorded, which we just agreed that it's not
5 going to be recorded.
6 PLANET DEPOS TECH: Sir, that may
7 be --
8 STENOGRAPHER: The recording's been
9 stopped.
10 PLANET DEPOS TECH: Yeah, the
11 recording is stopped on my end. It may still
12 be recording on your Zoom screen. If you go
13 to the top of your screen and -- you'll see a
14 stop button. You can click on that and stop
15 it from recording.
16 MR. BILSKER: Do you see how to do
17 it?
18 All I see is something that says the
19 meeting is being recorded, and it says,
20 "Okay." If I hit "okay," then it's going to
21 get recorded.
22 STENOGRAPHER: I think you just hit

1 "okay" and then it will go away. It's not
2 being recorded.
3 Just let me know when you're ready
4 and I'll proceed with the swearing in.
5 MR. BILSKER: Go ahead.
6 STENOGRAPHER: All right.
7 Dr. Metzker, would you please raise
8 your right hand.
9 Do you swear or affirm the testimony
10 you are about to give in this matter will be
11 the truth, the whole truth, and nothing but
12 the truth?
13 DR. METZKER: I do.
14 STENOGRAPHER: Thank you.
15 You may proceed.
16 MR. BEAVERS: Good morning,
17 Dr. Metzker. Thank you for sitting with us
18 today.
19 MICHAEL L. METZKER, Ph.D.,
20 was thereupon called as a witness herein, and
21 after having first been duly sworn to testify
22 to the truth, the whole truth and nothing but

1 the truth, was examined and testified as
2 follows:
3 EXAMINATION
4 BY MR. BEAVERS:
5 Q. Just to go ahead and set a little bit of the
6 background here, you submitted a declaration
7 in support of the Petitioner's reply regarding
8 the '012 and '108 patents; is that correct?
9 A. That is correct.
10 Q. And that declaration has been marked as
11 Exhibit 1121. Right?
12 A. I don't have that in front of me, but I think
13 that number is correct.
14 Q. So you do not have a clean copy of the
15 declaration in front of you?
16 A. Oh, yes, I do. I'm sorry. I was looking at
17 the reply, and those are not marked. But my
18 declaration is Exhibit 1121 --
19 Q. Correct.
20 A. -- for the '012 and the '108 patents.
21 Q. And you mentioned a second ago that you were
22 looking at the reply. So Petitioner's reply

1 is also in front of you; is that right?
2 A. That is correct.
3 Q. And do you have any other documents in front
4 of you?
5 A. I also have my declaration, Exhibit 1035 for
6 the '357 patent. I also have the
7 Petitioner's reply for that patent as well.
8 Q. And have you reviewed the Petitioner's replies
9 that are in front of you?
10 A. I have.
11 Q. So I would like to direct your attention to
12 the reply -- or the declaration that you
13 submitted with respect to the '012 and '108
14 patents, Exhibit 1121, and I would like you to
15 take a look at the Table of Contents in your
16 declaration.
17 A. Yes, I'm there.
18 Q. Okay. And you'll see that you have a section
19 titled Nothing in Patent Owner's Response
20 Changes the Conclusion that Shapero Combined
21 with Delseny Renders the Claims of the '012
22 and '108 Patents Obvious.

1 Do you see that?
2 A. I do see that.
3 Q. Now, in forming that opinion, did you review
4 the entirety of Patent Owner's response?
5 A. Yes.
6 Q. And did you review the entire declaration
7 submitted by Dr. Bustamante?
8 A. Yes.
9 Q. Did you review all exhibits that were cited in
10 Patent Owner's response and Dr. Bustamante's
11 declaration?
12 A. Yes.
13 Q. You reviewed Dr. Bustamante's full deposition
14 transcript as well. Right?
15 A. I did.
16 Q. Which is Exhibit 1120 in this proceeding.
17 Right?
18 A. 1120... I mean, I --
19 MR. BILSKER: Objection. Form.
20 So you're asking him like from a
21 memory test if he knows, like, what --
22 BY MR. BEAVERS:

1 Q. I'll represent to you, Dr. Metzker, that that
2 is the number.
3 Now, with respect to Dr. Bustamante's
4 deposition --
5 A. I'm sorry, can I just have a moment?
6 Yeah, so I can confirm in my
7 declaration the October 7th, 2025, deposition
8 of Dr. Bustamante is Exhibit 1120.
9 BY MR. BEAVERS:
10 Q. Thank you.
11 And with respect to Dr. Bustamante's
12 deposition, you were present. Right?
13 A. That is correct.
14 Q. Now, I would like to start by talking about
15 Shapero. That has previously been marked as
16 Exhibit 1006.
17 MR. BEAVERS: Lawrence, could we
18 bring that exhibit up?
19 PLANET DEPOS TECH: Sure. What was
20 that number again?
21 MR. BEAVERS: It's 1006.
22 PLANET DEPOS TECH: One moment,

1 please.
2 BY MR. BEAVERS:
3 Q. And, Dr. Metzker, you should have a PDF
4 version in the Chat now if you would like to
5 download it and follow along that way.
6 A. Okay. I also have a hard copy in front of me
7 as well.
8 Q. Excellent. Okay.
9 Okay. Now, Dr. Metzker, Shapero
10 discloses a library preparation method that it
11 calls Multiplexed Anchored Runoff
12 Amplification, or MARA. Right?
13 A. That's correct. That's cited in the abstract
14 of Exhibit 1006.
15 Q. And Shapero describes how the MARA method
16 works on pages 2 and 3 of the publication; is
17 that right?
18 A. So are you referring to 2 and 3 at the top of
19 the document with respect to the nucleic acid
20 research numbering system and not the Bates
21 numbering system?
22 Q. Thank you. Yes. So we'll be referring to

1 native pagination in this proceeding, so it
2 will be page 2 of 9 and page 3 of 9 in the
3 document.
4 A. Okay. Great. Thank you.
5 Can you repeat that question?
6 Q. Yeah.
7 So Shapero describes how the MARA
8 method is performed on pages 2 and 3 of the
9 publication. Right?
10 A. Well, I mean, I can see on page 2 and 3
11 there's a title under the Results of MARA,
12 and also -- sorry, under the Methods and
13 Material there's a section called MARA. And
14 then -- that's on page 2. And then on page 3
15 there is a titled section MARA under Results.
16 But I would say that Shapero
17 describes MARA in other sections of this
18 publication as well.
19 Q. Including Figure 1 which is on page 4 of the
20 reference.
21 A. Yes, Figure 1 illustrates the MARA method and
22 then in the figure legend provides more

1 detail of how that figure is being described.
2 Q. Now, I want to walk through that method, and
3 I'm going to focus on Figure 1.
4 MR. BEAVERS: Lawrence, could we zoom
5 in a little bit on Figure 1 in the left-hand
6 column?
7 PLANET DEPOS TECH: I need to take
8 back control from you. Just one moment.
9 MR. BEAVERS: Okay.
10 Perfect.
11 PLANET DEPOS TECH: All right, I'm
12 going to give back control.
13 Okay, you have control again. Just
14 click on the screen.
15 MR. BEAVERS: Thank you.
16 BY MR. BEAVERS:
17 Q. Now, at the beginning of the MARA process,
18 Shapero discloses that the first step is that,
19 "Human genomic DNA [(pink)] is digested to
20 completion with a restriction enzyme"...
21 Is that correct?
22 A. Yes, you are correctly reading the first

1 sentence of Figure 1 legend.
2 Q. And Shapero uses specific restriction enzymes
3 for this digestion. Right?
4 A. Well, in the example that's being shown here,
5 yes, they are using -- well, they actually
6 don't describe any specific restriction
7 enzyme in the figure legend.
8 Q. Now, I want to direct your attention, then, to
9 page 2 of the reference, and I will show you
10 where I'm going on the screen as well.
11 You'll see under the Materials and
12 Methods the subsection MARA, and it notes,
13 "Genomic DNA (100 nanograms) was digested with
14 MseI (NEB) or Sau3AI (NEB)"...
15 Do you see that?
16 A. I do see that.
17 Q. And you would understand MseI and Sau3AI to be
18 digestion enzymes. Correct?
19 A. Well, not -- not the way you've phrased the
20 question.
21 Q. Could you explain to me why not?
22 MR. BILSKER: Objection. Relevance.

1 Beyond the scope of his declaration.
2 MR. BEAVERS: David, this is the
3 process he opines about.
4 MR. BILSKER: Well, actually --
5 BY MR. BEAVERS:
6 Q. You can proceed, Doctor.
7 MR. BILSKER: Actually -- hold on.
8 Objection. You guys have not disputed that
9 the Shapero enrichment method is the same as
10 the method disclosed in the patent. There's
11 no dispute about that, so...
12 MR. BEAVERS: David, this deposition
13 is not for you and I to argue. That's what
14 our papers are for. You've noted your
15 objection.
16 BY MR. BEAVERS:
17 Q. Dr. Metzker, you may proceed.
18 MR. BILSKER: So hold on. So if you
19 then just start blabbing after I make my
20 objection, I have to sit here quietly, that's
21 not the way it's going to work. If you
22 respond, then I'll respond to you.

1 MR. BEAVERS: David, are you
2 instructing the witness not to answer the
3 question?
4 MR. BILSKER: Did you ever hear that?
5 I mean, are you hearing things in your head?
6 Because I never -- those words never came out
7 of my mouth.
8 MR. BEAVERS: Okay.
9 BY MR. BEAVERS:
10 Q. Dr. Metzker, will you answer the question?
11 A. I'm sorry, I've lost track of the question.
12 Can you repeat your question?
13 Q. Understood.
14 So a moment ago -- and I will read
15 back to you the Q&A here so that we can get to
16 the point -- I had noted that Shapero
17 discloses that genomic DNA (100 nanograms) was
18 digested with MseI or Sau3AI, and I asked you
19 whether these were digestion enzymes. And I
20 phrased it as: "And you would understands
21 MseI and Sau3AI to be digestion enzymes.
22 Correct?"

1 You testified: "Well, not -- not the
2 way you've phrased the question."
3 And so then I asked you: "Could you
4 explain to me why not?"
5 MR. BILSKER: Objection. Multiply
6 compound. Relevance. Beyond the scope.
7 BY MR. BEAVERS:
8 Q. Dr. Metzker, could you please answer the
9 question?
10 A. So MseI, Sau3A1 are referred to as
11 restriction endonucleases.
12 Q. And so Shapero uses these restriction
13 endonucleases to digest genomic DNA at the
14 beginning of the MARA process; is that
15 correct?
16 MR. BILSKER: Objection. Relevance.
17 Beyond the scope.
18 A. On page 2, they do describe two ways of
19 digesting genomic DNA. There's many ways to
20 do that, but in this particular passage they
21 are referring to two different restriction
22 endonucleases.

1 BY MR. BEAVERS:
2 Q. And so just to clarify, when you say "two
3 ways," you mean the two endonucleases.
4 A. I'm sorry, I thought --
5 MR. BILSKER: Objection.
6 Mischaracterization.
7 A. I thought I said there were numerous ways,
8 which could be both site directed or randomly
9 directed, and those are well-known in the
10 art.
11 BY MR. BEAVERS:
12 Q. So, Dr. Metzker, you, a minute ago said, "On
13 page 2, they do describe two ways of digesting
14 genomic DNA."
15 To which I asked you, just to
16 clarify -- I understand you said more after,
17 but I asked, just to clarify, ..."when you say
18 'two ways,' you mean the two endonucleases."
19 MR. BILSKER: Objection.
20 Mischaracterization. Beyond the scope.
21 Relevance.
22 A. No, I wasn't referring to MseI and Sau3A1 as

1 two different ways. Those are two different
2 restriction endonucleases that digest DNA by
3 a sequence specific manner.
4 What I was saying, there are other
5 ways to digest genomic DNA using enzymes that
6 introduce random breaks in fragmentation, and
7 those are the numerous ways that I was trying
8 to refer to.
9 BY MR. BEAVERS:
10 Q. And so just to clarify, when you testified a
11 moment ago that Shapero describes two ways of
12 digesting genomic DNA, what is the second way
13 that you were referring to?
14 MR. BILSKER: Objection.
15 Mischaracterization. Beyond the scope.
16 Relevance.
17 A. Yeah, I don't think I said "two ways." I
18 said -- I thought I said numerous ways.
19 One way is using restriction
20 endonucleases, and there are hundreds of
21 restriction endonucleases that are
22 commercially available mostly through New

1 England Biolabs, with the acronym NEB, but
2 you can use enzymes such as DNase 1 or other
3 exonucleases that randomly introduce breaks
4 into genomic DNA.
5 Q. Now, Shapero also discloses that after
6 enzymatic digestion adapters are ligated to
7 the fragments; is that correct?
8 MR. BILSKER: Objection. Relevance.
9 Beyond the scope of his reply declaration.
10 Not in dispute.
11 A. So if you're looking at page 2 under the
12 Materials and Methods section, under the
13 subsection MARA, Shapiro described after
14 digestion with restriction endonucleases
15 there is a heat treatment process that will
16 activate the endonucleases. After that, it
17 states, "Adapters were ligated to genomic DNA
18 in 20 microliter reactions containing the 100
19 nanograms of restriction enzyme digested
20 genomic DNA"...
21 And it goes on to give the ligation
22 buffer and ligase reaction conditions.

1 Q. And the adapters that were ligated contained a
2 sequence that Shapero refers to as A2; is that
3 right?
4 MR. BILSKER: Objection. Relevance.
5 Beyond the scope.
6 A. Well, I see A2 in Figure 1, little i, where
7 A2 is a partially double-stranded adapter
8 construct, including the top strand which is
9 longer and a bottom strand which is shorter
10 that is blocked on the 3 prime end with an
11 amino.
12 BY MR. BEAVERS:
13 Q. Now, looking at Figure 1, under the second
14 Romanette, Shapero uses a forward primer that
15 contains a common sequence called A1; is that
16 right?
17 MR. BILSKER: Objection. Relevance.
18 Beyond the scope.
19 A. In Figure 1, Romanette ii, there is depicted
20 a target-specific primer that specifically
21 anneals to the single-stranded,
22 adapter-ligated genomic DNA that on it's 5

1 prime end has a common sequence referred to
2 as A1.
3 BY MR. BEAVERS:
4 Q. And that forward primer is what Shapero
5 separately refers to as the locus-specific
6 primer. Right?
7 MR. BILSKER: Objection. Beyond the
8 scope. Relevance. And you've waived any
9 arguments with respect to this.
10 A. I believe that's correct, Shapero refers to
11 it as a locus-specific primer, but a person
12 of ordinary skill in the art would understand
13 that is the same term as target-specific
14 primer.
15 BY MR. BEAVERS:
16 Q. What is a locus?
17 MR. BILSKER: Objection. Relevance.
18 Beyond the scope.
19 A. Do you -- can you be more specific in what
20 you --
21 BY MR. BEAVERS:
22 Q. In the context -- sorry, Dr. Metzker.

1 In the context of this publication,
2 what is a locus?
3 A. So we're talking about a genome, and in
4 particular the human genome, which
5 constitutes about 3 billion base pairs in the
6 haploid form. And within that genome there
7 are specific locations that are targets of
8 interest, and that would be referred to as a
9 locus.
10 So it's a position on the genome
11 that's of interest.
12 Q. Now, does Shapero disclose another way to
13 introduce the A1 common sequence other than
14 through the use of this locus-specific primer?
15 A. I don't understand the question.
16 Q. Certainly.
17 So if we look at Romanette ii, as we
18 discussed a moment ago, there is a forward
19 primer that contains the A1 common sequence --
20 common sequence on its tail. Do you see that?
21 A. I do.
22 Q. Does Shapero disclose any other way, besides

1 using this locus-specific primer, to introduce
2 the A1 common sequence into any of the
3 extension products that are generated in MARA?
4 MR. BILSKER: Objection. Relevance.
5 Beyond the scope. Waived.
6 A. Your -- I'm sorry, your question is confusing
7 because the figure speaks for itself.
8 Shapero is showing a target-specific primer
9 that has a common sequence that has an A1 --
10 that is designated as a A1. I mean, that's
11 how I would answer that question.
12 BY MR. BEAVERS:
13 Q. So in the second step, Shapero is annealing
14 the forward primer, the locus-specific primer,
15 to specific loci in the sample. Right?
16 MR. BILSKER: Objection. Relevance.
17 Beyond the scope. Waived.
18 A. All right, so I'm just going to go to page 2
19 in the Materials and Methods section to
20 answer your question under the subtitle of
21 Oligonucleotide Design and Synthesis, and it
22 says that the "Locus-Specific

1 oligonucleotides were designed using Primer
2 3" -- referencing the Rozen 2000 article that
3 describes the Primer 3 algorithm:
4 "All oligonucleotides contained 23
5 bases of common sequence at the 5 Prime end
6 (T3 promoter" -- and it provides the actual
7 DNA sequence -- "followed by about 25 bases
8 of locus-specific sequence at the 3 prime
9 end. [The] primers were designed using the
10 July 2023 human reference sequence based on
11 NCBI" -- and those are all capitalized --
12 "Build 34 that was produced by the
13 International Human Genome Sequencing
14 Consortium."
15 Those are -- those are how the
16 primers were described by Shapero.
17 BY MR. BEAVERS:
18 Q. Thank you, Dr. Metzker.
19 My question was whether in the second
20 step Shapero is annealing the forward primer
21 to specific loci in the sample.
22 MR. BILSKER: Objection. Relevance.

1 Beyond the scope. Waived.
2 A. Yes. And you can -- that is described on
3 page 3 of Shapero. It's on the left-hand
4 column, it is a little over ten lines down.
5 It says [as read]: Conditions of
6 the primary MARA amplification were as
7 follows: 1 cycle of 95 degrees for 7
8 minutes, followed by 18 cycles of 95 degrees
9 for 20 seconds, 68 degrees for 2.5 minutes
10 (minus 0.5 degrees Celsius per cycle) and 72
11 degrees for 60 seconds. The annealing and
12 elongation times were increased to 5 and 2
13 minutes, respectfully [sic], per cycle for
14 the 4565-plex MARA.
15 BY MR. BEAVERS:
16 Q. And so to clarify here, the annealing part of
17 the cycle is the 68 degrees Celsius for 2.5
18 minutes; is that right?
19 MR. BILSKER: Objection. Relevance.
20 Beyond the scope. Waived.
21 A. No, that's incorrect. And I've read that
22 into the record already that there were 18

1 cycles. The annealing step first starts at
2 68 degrees for 2.5 minutes, but with each
3 cycle the temperature is lowered by one half
4 of a degree Celsius.
5 BY MR. BEAVERS:
6 Q. Okay. I understood the parenthetical there.
7 But that portion of the cycle is the annealing
8 step. Correct?
9 MR. BILSKER: Objection. Relevance.
10 Beyond the scope. Waived.
11 A. That's how a person of ordinary skill in the
12 art would have understood that step.
13 BY MR. BEAVERS:
14 Q. And I noticed, before, that there is one cycle
15 of 95 degree Celsius for 7 minutes and then
16 you have the 18 cycles where it's 95 degree
17 Celsius for 20 seconds. What's the purpose
18 of, you know, those temperatures and at those
19 different times?
20 A. So I'll draw your attention --
21 MR. BILSKER: Objection. Relevance.
22 Beyond the scope. Waived.

1 A. -- to a section above where we just read, and
2 it -- I guess I'll read the whole sentence
3 just for completeness. Let's see, where does
4 it start?
5 It says, "Primary MARA 4365-plex
6 reactions were carried out in a total volume
7 of 60 microliters containing 60 nanograms of
8 adapter-ligated genomic DNA, 250 micromolar of
9 each dNTP (dATP, dCTP, dGTP, and dTTP), 1X
10 GeneAmp PCR Gold Buffer" -- it provides the
11 composition of that buffer -- "2.5 millimolar
12 magnesium chloride, 0.025 micromolar of each
13 locus-specific oligonucleotide, and 1.25
14 units" -- just u -- "AmpliTaq Gold (Applied
15 Biosystems)"...
16 Now, that particular DNA polymerase,
17 the AmpliTaq Gold, is a -- is a modified
18 polymerase that is inactive, and I believe it
19 could be by an antibody or some kind of
20 structural variant within the polymerase
21 itself, and the 95 degrees for 7 minutes is
22 necessary to activate the AmpliTaq Gold DNA

1 polymerase so that you can perform what is
2 called hot-start PCR.
3 After that, the 95 degrees for 20
4 seconds, the 68 degrees as we've described as
5 the annealing, and then the 72 degrees for 60
6 seconds constitutes the general cycles of
7 denaturation, annealing, and extension in the
8 PCR cycle.
9 BY MR. BEAVERS:
10 Q. Now I would like to direct your attention back
11 to Figure 1.
12 A. Okay, I'm there.
13 Q. Okay. So if we look, going on to
14 Romanette iii, we see that Shapero describes
15 the primary MARA reaction, and that is the
16 multiple cycles of denaturation, annealing,
17 and extension that we just discussed a minute
18 ago. Right?
19 A. Right. It's described in the figure legend,
20 Romanette iii, "The primary MARA reaction
21 involves multiple cycles of primer annealing
22 and extension, which can lead to a

1 full-length extension product (dashed line)
2 that has" been copied -- "that has copied the
3 adapter sequence (A2) from the genomic DNA
4 template."
5 That's what's described.
6 Q. And so the full-length extension product
7 that's generated will contain the A1 adapter
8 sequence and then a complementary sequence to
9 the A2 adapter sequence. Right?
10 MR. BILSKER: Objection. Relevance.
11 Beyond the scope. Waived.
12 A. That's not complete.
13 BY MR. BEAVERS:
14 Q. Why not?
15 A. Well, it will -- the extension product will
16 have the A1 common sequence, it will have the
17 target-specific primer sequence, it will also
18 contain the complement of the target-specific
19 loci, and then it will also have the
20 complement of the A2 sequence.
21 Q. And that is the product that is depicted
22 immediately under Romanette iv in Figure 1.

1 Right?
2 MR. BILSKER: Objection. Relevance.
3 Beyond the scope. Waived.
4 And from now on, for shorthand, I'm
5 just going to say on that one, same. So when
6 I say "same objection," it will be those three
7 bases.
8 BY MR. BEAVERS:
9 Q. You may answer, Dr. Metzker.
10 A. Can you repeat the question, please?
11 Q. Yeah.
12 So the extension product that you
13 just described, that is depicted as the first
14 product under Romanette iv in Figure 1.
15 Right?
16 MR. BILSKER: Same objection.
17 A. And what I described in my previous answer is
18 the first depiction shown in Shapero
19 Figure 1. There are other extension products
20 that Shapero was also showing that are the
21 result of the step in Romanette iii.
22 BY MR. BEAVERS:

1 Q. And let's walk through those products.
2 The second and third product both
3 depict partial extension products that lack
4 the complement to the A2 adapter sequence.
5 Right?
6 A. That's correct.
7 Q. And the final product here is really just the
8 forward primer and solution. Right?
9 MR. BILSKER: Same objection.
10 A. I wouldn't refer to it as a "product." It
11 is -- it is the target-specific primer that
12 contains the A1 common tail that has not been
13 extended at all.
14 BY MR. BEAVERS:
15 Q. And now after the primary MARA reaction,
16 Shapero discloses a secondary PCR reaction.
17 Right?
18 MR. BILSKER: Same objection.
19 A. Right. That's described -- that's first
20 illustrated in Romanette v, and it's also
21 described in the figure legend for Figure 1.
22 BY MR. BEAVERS:

1 Q. Before we get there, Shapero also tells us
2 that they did something different with the
3 250-plex reaction than the other plex
4 reactions. Right?
5 A. I believe that's correct.
6 Q. In fact, Shapero describes an enrichment step
7 that follows the primary reaction. Right?
8 A. Well, in the figure legend, it says, "An
9 enrichment step [was] used in the MARA
10 250-plex reactions following the primary
11 reaction."
12 Q. And that step uses one-cycle PCR with primer
13 A2 to convert the full-length extension
14 products into double-stranded DNA. Right?
15 A. I think that's correct. I mean, I think they
16 realize that was an unnecessary step because
17 in the presence of A1 and A2, by default, you
18 would create that second string from the A2
19 primer.
20 Q. And now with this additional step, though,
21 with the 250 plex, Shapero creates
22 double-stranded DNA by targeting the

1 complementary A2 sequence that is only present
2 in the full-length extension products. Right?
3 MR. BILSKER: Same objection.
4 A. That's correct. The whole purpose of their
5 single primer extension reaction was to
6 create the complement of A2, and only those
7 full-length products could be amplified in
8 the next step.
9 BY MR. BEAVERS:
10 Q. So Shapero tells us that any of the fragments
11 that lack the A2 primer site are not converted
12 into double-stranded DNA. Right?
13 MR. BILSKER: Same objection.
14 A. Any extension product, or even the
15 target-specific loci that does not have on
16 the 3 prime end a complement of A2 will not
17 participate in the next PCR step, and that's
18 one of the key advantages that Shapero talks
19 about.
20 BY MR. BEAVERS:
21 Q. Now, before we get to that next PCR step, with
22 the 250 plex, Shapero discloses that they used

1 an exonuclease I digestion after converting
2 the extension products to double-stranded DNA.
3 Right?
4 MR. BILSKER: Same objection.
5 A. So I'll just continue to read on.
6 It says, "One cycle of PCR with
7 primer A2 converts full-length amplification
8 products (which contain an A2 primer
9 annealing site)" to -- "into double-stranded
10 DNA, while incomplete products lacking the A2
11 primer annealing site are not converted into
12 a double-stranded product. Exonuclease I
13 digestion removes single strand[ed] products,
14 while double-strand[ed] products are
15 resistant to digestion."
16 That's what is described in Shapero
17 Figure legend 1.
18 BY MR. BEAVERS:
19 Q. And so after this digestion step, Shapero is
20 telling us that you only have the
21 double-stranded products left because of
22 digestion process. Right?

1 MR. BILSKER: Same objection.
2 A. It says -- it goes and says, "This step
3 enriches for full-length products generated
4 by the primary reaction, but cannot
5 discriminate between products derived from
6 specific and non-specific primer-target DNA
7 annealing."
8 BY MR. BEAVERS:
9 Q. Non-specific target-primer annealing is
10 something that we would refer to as
11 mispriming. Right?
12 MR. BILSKER: Same objection.
13 A. That could be -- that could be one way of
14 thinking about non-specific primer-target
15 annealing. I think what they're trying to
16 describe here is, this exonuclease step
17 doesn't discriminate between those two. What
18 Shapero did is show other experiments that
19 showed that the non-specific primer-target
20 annealing was not an issue in the MARA
21 reaction.
22 BY MR. BEAVERS:

1 Q. And when you say "other experiments," you're
2 referring to the hybridization array data that
3 Shapero later reports in the publication.
4 Right?
5 MR. BILSKER: Objection. Assumes
6 facts. Mischaracterization.
7 A. No, I'm not really referring to that at all.
8 BY MR. BEAVERS:
9 Q. Now I want to pivot a little bit here. I want
10 to talk about a concept that's been a little
11 bit at issue here, primer dimers, and so I
12 just want to get a little bit of a better
13 understanding of your view on this,
14 Dr. Metzker.
15 So when primers dimerize, the primers
16 bind to each other. Right?
17 A. That's the understanding.
18 Q. And so when we refer to a primer-primer
19 structure, we would call that a primer dimer.
20 Right?
21 A. Yeah, I mean, it's been well described in the
22 art. There's a reference in the case called

1 Brownie (1997) which quite nicely illustrates
2 how a primer dimer is formed from two
3 primers.
4 Q. And so then this primer dimer that's formed,
5 we would expect the length of it to be
6 somewhere between the length of one of the
7 primers to the length of the two primers
8 combined. Right?
9 MR. BILSKER: Objection. Vague and
10 ambiguous.
11 A. I don't think I would expect it to be as
12 small as the length of a single primer. The
13 way these typically form is the 3 prime ends
14 of the primers can anneal to each other, and
15 those products are extended.
16 So typically a primer dimer is going
17 to be slightly less than double the length of
18 a single primer.
19 BY MR. BEAVERS:
20 Q. And these primer dimers are undesirable
21 byproducts of library preparation. Right?
22 MR. BILSKER: Objection. Assumes

1 facts. Incomplete hypothetical.
2 A. I think it depends on the way the library is
3 constructed.
4 MR. BEAVERS: We can take down
5 Shapero for now.
6 BY MR. BEAVERS:
7 Q. So I want to direct your attention,
8 Dr. Metzker, to your declaration, and I'd like
9 to direct you to paragraph 14.
10 A. Okay, I'm at paragraph 14.
11 Q. Okay. Now, you state that, ..."one of
12 ordinary skill in the art would have
13 understood that the data presented --
14 A. I'm sorry, Mr. Beavers, where are you reading
15 from?
16 Q. Oh, I'm sorry, who -- was this David?
17 A. No. It was -- it was Dr. Metzker.
18 Q. Oh, okay. Sorry. I heard a voice in the
19 void.
20 A. Yeah, sorry. But it -- I don't see where
21 you're reading from.
22 Q. Yeah, if you turn to page 10 of your

1 declaration, it's paragraph 14. I started
2 right after you say, "In actuality"... I
3 started right there.
4 Do you see it?
5 A. All right. I do now. Thank you.
6 Q. Okay. Great.
7 So you wrote, ..."one of ordinary
8 skill in the art would have understood that
9 the data presented in Shapero (2004) leads to
10 the conclusion that MARA is achieving high
11 on-target rates, not the opposite."
12 Do you see that?
13 A. That's right. And that beginning phrase, "in
14 actuality," is actually responding to
15 Dr. Bustamante in paragraph 13.
16 Q. And in this paragraph, the data that you cite
17 is the result from Figure 2A, the gel in
18 Figure 2A. Right?
19 A. Well, that's one piece of data that I relied
20 on.
21 Q. That's the data that you cite in this
22 paragraph. Right?

1 MR. BILSKER: Objection.
2 Mischaracterization. Vague and ambiguous.
3 A. Can I have a moment to read through this
4 paragraph?
5 BY MR. BEAVERS:
6 Q. Yes, please.
7 A. Okay. Thank you.
8 Can you repeat the question, please?
9 Q. Yeah, so the data that you cite to in that
10 paragraph is the gel read in Figure 2A of the
11 publication. Correct?
12 A. Well, paragraph 14 is really responding to
13 the gel in Figure 2A in particular reference
14 to the lack of primer dimers in the gel, and
15 in refuting Dr. Bustamante's suggestion that
16 maybe the reason why he couldn't see primer
17 dimers in Figure 2A is because maybe they
18 just ran off the gel, which is kind of -- I
19 mean, it's possible, but not the way that the
20 data are presented.
21 Because the data are presented where
22 there are molecular weight markers, and I

1 would have expected -- and I say this in
2 paragraph 14 -- that if there were primer
3 dimers, they would be slightly under 100 base
4 pairs because each primer is almost 48 base
5 pairs.
6 And I've run lots of PCRs and lots
7 of gels. Primer dimers are very prominent
8 when they're in a library, and what I'm
9 speaking to here is that Figure 2A does not
10 show any evidence whatsoever of primer dimers
11 being created from the 250-plex MARA
12 reaction.
13 Q. Thank you, Dr. Metzker.
14 So just to confirm the answer to my
15 question, the gel read is the only data that
16 you cite in that paragraph. Right?
17 A. With respect to the absence of primer dimers.
18 That's -- that's what I'm talking -- there's
19 other information in Figure 2A that also
20 speaks to on-target specificity. For
21 example, the size range of the expected
22 extension products are exactly what you --

1 what -- the way they design the assay to be.
2 That is another indication of on-target
3 specificity.
4 But paragraph 14 is really only
5 dealing with the lack of primer dimers in
6 Figure 2A.
7 Q. And when you say that it speaks to how they --
8 let me make sure I get this right.
9 The way they design the assay to be,
10 you are referring to the specific use of
11 endonucleases to fragment the genome and then
12 from there do the library preparation method.
13 Right?
14 MR. BILSKER: Objection. Vague and
15 ambiguous.
16 A. No, not at all. I mean, if you go back to
17 Figure 1A and if you actually look at
18 Romanette Number ii, Shapero is very clear of
19 how it defined what the extension product --
20 how long the extension product would be in
21 relation to where the SNP existed in the
22 locus.

1 So, for example, they have a D1
2 region which is the distance from the 3 prime
3 end of the target-specific primer to the SNP,
4 and then they have a D2 distance which is from
5 the SNP to the end where one of the
6 restriction enzymes that were used in MARA
7 would cut genomic DNA.
8 So based on that, they had an
9 expected size range of about 150 to 550 base
10 pairs, and when you look at Figure 2A, that's
11 exactly what they get and it's reproducible
12 over nine different samples, genomic samples.
13 Q. So, again, just to answer my question, with
14 respect to paragraph 14, the data that you are
15 referring to there is from the gel that is in
16 Figure 2A of the publication. Correct?
17 MR. BILSKER: Objection.
18 Argumentative. Asked and answered. Vague and
19 ambiguous.
20 A. I am answering your question, and your
21 question leaves out details that are in
22 Figure -- in paragraph 14. And so I'm

1 filling in the gaps of what I'm talking about
2 in relation to the gel in Figure 2A.
3 BY MR. BEAVERS:
4 Q. So let's go to paragraph 17 of your
5 declaration.
6 A. Okay, I'm there. I guess, can I have a
7 moment to read through that?
8 Q. Yes, please.
9 A. Okay. Thank you.
10 Q. And, here, I'm going to direct you to page 15,
11 so it's the latter part of paragraph 17, and
12 you will see a sentence that states, "Rather,
13 the data in Shapero (2004) would have led them
14 to believe that it was performing
15 exceptionally well."
16 Do you see that?
17 A. I do see that sentence.
18 Q. And just to confirm, the data that you are
19 referring to in paragraph 17 is the
20 hybridization array outputs, the call rates
21 and the concordance rates, that Shapero
22 reports. Correct?

1 A. Well, that's not complete.
2 It's referring to, first, their
3 discrimination scores, and they're describing
4 them as greater than 0.08. And they provide
5 what that formula is, where they look at
6 perfect matches of both the wild-type
7 variant, the reference variant, and then
8 mismatches in either the wild type or the
9 reference variant. And it provides a way of
10 estimating how good the data are coming from
11 the array, and they are describing that their
12 array was calling greater than 99 percent of
13 the SNPs with a DS score greater than 0.08.
14 And then I also do rely on the call
15 rates, which Shapero refers to as a proxy for
16 on-target specificity, and then the
17 concordance rates with a different assay that
18 Affymetrix was using called WGSA.
19 Q. Now, just to be clear, you never -- in any
20 part of your declaration, you never rely on
21 the relative abundances of the target
22 sequences before or after amplification, do

1 you?
2 MR. BILSKER: Objection. Vague and
3 ambiguous. Unintelligible.
4 MR. BEAVERS: Thank you, David.
5 A. I would disagree with that.
6 BY MR. BEAVERS:
7 Q. So you cite relative abundances in your
8 declaration?
9 A. Well, I -- what I do cite to is the
10 difference between Figure 2A and Figure 2B.
11 For example, you can look at the gel
12 and you can see the abundance of
13 target-specific loci being amplified in the
14 presence of the target-specific primers, and
15 then the lack of signal, i.e., the lack of
16 abundance when the same assay is performed,
17 except that the target-specific primers are
18 not included in the MARA reaction.
19 Q. I want to change gears a little bit.
20 Dr. Metzker, this is not the first
21 time that you've provided sworn testimony to a
22 court or a tribunal on behalf of Qiagen

1 Sciences LLC; is that correct?
2 A. That is correct.
3 Q. You previously testified in the ArcherDX
4 versus Qiagen Sciences litigation in the
5 United States District Court for the District
6 of Delaware. Right?
7 A. Yes. I think that's included in my CV, which
8 I think is Exhibit 1004.
9 Q. And in that litigation, the plaintiffs accused
10 various Qiagen entities, including Qiagen
11 Sciences, of patent infringement and trade
12 secret misappropriation. Right?
13 MR. BILSKER: Objection. Relevance.
14 A. I do know -- it's been a while. I do know
15 that there was a patent infringement suit. I
16 don't remember all the details of any trade
17 secrets that you're referring to.
18 BY MR. BEAVERS:
19 Q. Uh-huh. Now, the plaintiffs accused Qiagen of
20 infringing two patents in that litigation.
21 Right?
22 A. Again, it's been a long time. That could

very well be true, I just don't remember that detail at this point.

Q. Now, do you recall offering testimony concerning the invalidity data of the asserted patents in that litigation?

MR. BILSKER: Objection. Relevance.

A. Yes, I believe I did provide invalidity declarations and testimony in the Archer case.

BY MR. BEAVERS:

Q. And you also offered testimony that several of Qiagen's products did not infringe the patents. Right?

MR. BILSKER: Objection. Relevance.

A. I may have. Again, it's been a long time.

MR. BEAVERS: So why don't we take a break -- we've been going for about an hour -- before I get to this next module. Let's go ahead and take a ten-minute break.

THE WITNESS: Okay.

STENOGRAPHER: Okay, off the record, Counsel.

1 (Off the record at 1:39 p.m.)
2 (Back on the record at 1:49 p.m.)
3 MR. BEAVERS: Lawrence, if you don't
4 mind, could you pull up Exhibit 2201?
5 PLANET DEPOS TECH: Stand by, please.
6 MR. BILSKER: Is that something
7 that's previously marked?
8 MR. BEAVERS: No, David. This is a
9 new exhibit.
10 MR. BILSKER: All right. Then we may
11 have to print it out.
12 MR. BEAVERS: If you would like to
13 print this one out. This one you may not need
14 to print out. Once you see it, I'll leave it
15 up to you as to whether or not Dr. Metzker
16 would prefer a paper copy of it.
17 MARKED FOR IDENTIFICATION:
18 EXHIBIT 2201
19 1:50 p.m.
20 BY MR. BEAVERS:
21 Q. And so, Dr. Metzker, we will put a copy of it
22 in the Chat as well so you can download it.

1 But while we're doing that, just for
2 context here, this exhibit is a docket report.
3 Have you seen a docket report before?
4 A. It's possible.
5 Q. Well, I'm going to represent to you that this
6 is the docket report for the ArcherDX
7 litigation that we were just discussing. I
8 pulled this document from PACER. I'll also
9 represent to you that this document reflects
10 the entire docket from the start of the
11 litigation up through yesterday.
12 Now, let me know when you're ready
13 because I would like to direct your attention
14 to a specific page in the docket report.
15 A. Trying to... okay, I've downloaded it and
16 it's now on my computer.
17 Q. Great. And I also have control of the screen,
18 so I will -- oops. I don't know what's
19 happened here. Here we go.
20 So I would like to direct your
21 attention to page 57 of the document.
22 And so you'll see a docket entry

1 number that is 451. Do you see that?
2 A. Yes, I see it.
3 Q. And this docket entry number is for:
4 "Plaintiffs' Identification of Accused
5 Products by ArcherDX, LLC."
6 Do you see that?
7 MR. BILSKER: Objection. Relevance.
8 A. I mean, I see those words.
9 BY MR. BEAVERS:
10 Q. Okay.
11 MR. BEAVERS: Lawrence, I'd like to
12 introduce what is Exhibit 2202.
13 PLANET DEPOS TECH: Stand by.
14 MR. BILSKER: Objection. Relevance.
15 MARKED FOR IDENTIFICATION:
16 EXHIBIT 2202
17 1:52 p.m.
18 BY MR. BEAVERS:
19 Q. Dr. Metzker, we'll get a copy for you to
20 download.
21 As you will see and I will represent
22 to you, this document bears the same docket

1 entry number, 451, and it is the same document
2 that is referred to in that docket report.
3 A. I do see Exhibit 2202 with a document number
4 of 451.
5 Q. Thank you.
6 And you'll see that this document is
7 titled Plaintiffs' Identification of Accused
8 Products. Right?
9 A. I do see those words.
10 Q. It lists two patents, the '810 and '597
11 patents. Right?
12 MR. BILSKER: Objection. Relevance.
13 A. Yes, I do see those two patent numbers on the
14 document.
15 BY MR. BEAVERS:
16 Q. And these patents were directed to sequencing
17 library preparation methods that used nested
18 gene-specific primers. Right?
19 MR. BILSKER: Objection.
20 Mischaracterization. Relevance.
21 A. I don't see where that's described on this
22 document.

1 BY MR. BEAVERS:
2 Q. Do you recall what these patents cover?
3 MR. BILSKER: Hold on. Objection.
4 Relevance. Beyond the scope. And I'm just
5 going to remind you of your obligations under
6 37 C.F.R. Section 42.51(b)(1)(ii).
7 MR. BEAVERS: David, we are entitled
8 to impeach Dr. Metzker and the testimony that
9 he's provided in this proceeding.
10 MR. BILSKER: So now you're asking
11 me -- so now you're asking me to engage with
12 you? I just stated an objection. Now you're
13 asking me to engage with you because you're
14 responding.
15 BY MR. BEAVERS:
16 Q. Dr. Metzker -- Dr. Metzker, you may answer the
17 question.
18 MR. BILSKER: Same objections.
19 A. I don't remember the details of this case.
20 This case was tried more than four years ago.
21 BY MR. BEAVERS:
22 Q. Now, you'll see on this document that for both

1 patents the plaintiffs accuse the QIAseq
2 targeted DNA panels of infringement. Do you
3 see that?
4 MR. BILSKER: Objection. Relevance.
5 Beyond the scope.
6 A. I can see those words on this document.
7 BY MR. BEAVERS:
8 Q. And you also see that they accuse the QIASeq
9 targeted RNA scan panels. Right?
10 MR. BILSKER: Objection. Beyond the
11 scope. Relevance.
12 A. Again, I see those words on this document.
13 BY MR. BEAVERS:
14 Q. Okay. Now I'd like to direct your attention
15 back to Exhibit 2201.
16 A. Okay, I'm there.
17 Q. And I'd like you to look at page 23 of the
18 exhibit.
19 I'm sorry, this is not the page I
20 want.
21 One second and I will tell you the
22 right page.

1 Here we go. It's going to be page 46
2 of the exhibit.
3 A. Okay, I'm at page 46.
4 Q. You'll see a Docket Entry Number 338. Do you
5 see that?
6 A. It's the very bottom one? Yes.
7 Q. Yes.
8 And you'll see that the name of this
9 exhibit -- this entry is, "Redacted Version of
10 323 Declaration"... and it states that there
11 are Attachments 1 and 2.
12 Do you see that?
13 MR. BILSKER: Objection. Relevance.
14 Beyond the scope. And 37 C.F.R. 42.12, I'm
15 citing that section to you now so that you're
16 aware of it for abuse of discovery under the
17 PTAB rules. You're actually referring now to
18 a document submitted by Archer. I have no
19 idea what possible relevance this could have
20 for this case.
21 And I'm just making you aware of 47
22 -- 37 C.F.R. 42.12 for abuse of discovery with

1 potential sanctions available.
2 MR. BEAVERS: Thank you, David.
3 BY MR. BEAVERS:
4 Q. Dr. Metzker, back to my question. So you'll
5 see that this entry is named "Redacted Version
6 of 323 Declaration"... and it includes
7 Attachments 1 and 2. Correct?
8 MR. BILSKER: Objection. Incomplete,
9 improper reading.
10 A. I mean, I think the document speaks for
11 itself. It says, "Redacted Version of 232
12 Declaration, by ArcherDX, LLC, The General
13 Hospital Corporation." And in parentheses,
14 "(Attachments: Number 1 Part 2 of 3, Number
15 2 Part 3 of 3 (Joyce, Alexandra) (Entered:
16 March 8th, 2021.
17 BY MR. BEAVERS:
18 Q. Thank you.
19 MR. BEAVERS: Lawrence, we're going
20 to introduce three exhibits. It will be
21 Exhibit 2203, 2204, and 2205.
22 PLANET DEPOS TECH: Just one moment.

1 MR. BILSKER: And these are not
2 previously marked; is that correct?
3 MR. BEAVERS: These are new exhibits.
4 Yes.
5 MARKED FOR IDENTIFICATION:
6 EXHIBITS 2203 - 2205
7 1:59 p.m.
8 BY MR. BEAVERS:
9 Q. And, Dr. Metzker, I will apologize that we
10 have three exhibits here. This is how this
11 was filed in the public docket, and these were
12 filed in tranches of documents. So I do
13 apologize for the fact that there are multiple
14 exhibits within each of these, but this is how
15 they were filed publicly.
16 And so, Dr. Metzker --
17 A. I'm sorry, I don't even see them in the Chat
18 yet.
19 Q. Okay. Yeah, let's wait a second for you to
20 have to them in the Chat.
21 MR. BILSKER: So this first document
22 is a almost 300-page document filed by Archer,

1 and you want to question him about this?
2 MR. BEAVERS: David, we have a couple
3 more questions and we'll get there.
4 A. Okay, I have Exhibit twenty -- I'm sorry,
5 Exhibit 2203 open.
6 BY MR. BEAVERS:
7 Q. Okay. And, Dr. Metzker, could you confirm
8 that Exhibit 2203 lists the same case number
9 as the docket report that we've been
10 discussing?
11 MR. BILSKER: Objection. How is he
12 supposed to confirm that?
13 MR. BEAVERS: He has both documents.
14 A. So, actually, I'm not following -- which
15 document do I -- do you want me to compare to
16 this document?
17 BY MR. BEAVERS:
18 Q. Yes, Dr. Metzker. So 2201, you will recall,
19 is the docket report that we've been
20 discussing, and so I'm asking you whether or
21 not the case number, which you'll see at the
22 top of 2203, is the same as the docket report

1 that we've been discussing.
2 A. Right. So Exhibit 2201, I would find that on
3 the cover page?
4 Q. Yes.
5 A. Is that where you want to me to look?
6 Q. And if helpful, I could direct you to the
7 numbers on that if that's easier.
8 A. I'm just asking for direction of where you
9 want me to go and confirm the numbers.
10 Q. Certainly. So let's look at Exhibit 2203.
11 You'll see "Case," and then you'll see
12 "1:18-CV-01019-MN." Do you see that?
13 A. I do see those numbers.
14 Q. And if we could go back to Exhibit 2201, and
15 we'll go to the first page, you'll see up at
16 the top Civil Docket for Case Number:
17 1:18-cv-01019-MN.
18 Do you see that?
19 A. I do see that.
20 Q. And if you'll recall, a minute ago we were
21 talking about Docket Entry Number 338. Right?
22 A. I think that's right.

1 Q. And so if we go back to Exhibit 2203, you'll
2 see that the docket number at the top of the
3 document is 338. Do you see that?
4 A. I do see document 338 listed on Exhibit 2203.
5 Q. Okay. And now this document contains an
6 attorney declaration starting at page 1, and
7 then starting at page 5 it has attached to it
8 Exhibit 1.
9 Do you see that?
10 A. I have no idea whether this is an attorney
11 document or not.
12 MR. BILSKER: So objection.
13 Relevance. Beyond the scope of his
14 declaration.
15 BY MR. BEAVERS:
16 Q. So I'll direct you to paragraph 1,
17 Dr. Metzker. You'll see that Eric J. Rutt
18 declared, "I am an attorney with the law firm
19 Wolf Greenfield & Sacks, P.C."
20 And so what I want to direct you to
21 is paragraph 3. You will see that this
22 declaration states, "Attached as Exhibit 2 is

1 a true and correct copy of excerpts from the
2 transcript of the February 9, 2021 deposition
3 (Volume 1) of Dr. Michael Metzker."
4 Do you see that?
5 A. I do see those words.
6 Q. And now I want to direct you to page 54 of
7 this document, and you'll see that it has a
8 cover sheet, Exhibit 2. Do you see that?
9 A. I do.
10 Q. And if we look at the next page, we'll see the
11 beginning of a transcript, Remote Oral and
12 Videotaped Deposition of Dr. Michael Metzker.
13 Do you see that?
14 A. I do see that sentence.
15 Q. And this is the transcript -- from this cover
16 page, this is dated February 9th, 2021.
17 Correct?
18 A. That is the date on this document.
19 Q. And do you recall giving deposition testimony
20 in the ArcherDX case?
21 A. I generally remember giving a deposition, but
22 not even specific to what date it was on.

1 Q. No worries about the specific date.
2 The deposition that you gave, though,
3 was under oath. Right?
4 A. Yes.
5 Q. Now, we can set this document aside. I want
6 to look at 2204 and 2205 real quick. We'll
7 look first at -04 and then we can go to the
8 next document.
9 And I just want to confirm with you
10 that this document has the ID number 338-1.
11 Do you see that?
12 MR. BILSKER: Objection. Relevance.
13 Beyond the scope.
14 A. I do see Document 338-1 listed in
15 Exhibit 2204.
16 BY MR. BEAVERS:
17 Q. And then in 2205, we'll see Document 338-2.
18 Do you see that?
19 MR. BILSKER: Same objection.
20 A. I do see listed Document 338-2 in
21 Exhibit 2205.
22 MR. BEAVERS: Okay, we can set this

1 aside for now.
2 BY MR. BEAVERS:
3 Q. Dr. Metzker, at the beginning of the
4 deposition you testified that you had reviewed
5 Qiagen's reply papers in this proceeding.
6 Right?
7 A. That is correct.
8 Q. Now, I would like to direct your attention to
9 page 24 of the reply paper.
10 MR. BEAVERS: And, Lawrence, if we
11 could display that on the screen. It's Paper
12 22 in the box.
13 PLANET DEPOS TECHNICIAN: One moment,
14 please.
15 MR. BILSKER: Mr. Beavers, which
16 reply?
17 MR. BEAVERS: Oh, sorry. So this
18 will be for the '012 patent.
19 MR. BILSKER: And is that also being
20 put in the Chat?
21 MR. BEAVERS: We can do that as well,
22 if that's helpful.

1 And that is in the Chat now.
2 A. Okay, I have it open.
3 BY MR. BEAVERS:
4 Q. Okay. Perfect.
5 And so on page 24, I want to direct
6 you to the first paragraph. Do you see
7 Qiagen's statement, "Dr. Bustamante admitted,
8 however, the QIAGEN workflow is closer to the
9 Shapero workflow than PO's"?
10 A. I'm sorry, you didn't start at the beginning
11 of the paragraph. You're into the second
12 sentence of the paragraph?
13 Q. Yes, this is the second sentence.
14 A. Okay, could I just have a moment to review
15 the whole paragraph?
16 Q. Yes, please.
17 A. Okay, I've reviewed that paragraph now.
18 Q. Okay. Do you agree that the Qiagen workflow
19 is closer to the Shapero workflow than patent
20 owners?
21 A. Well, I agree -- again, you pointed out that
22 I was present during Dr. Bustamante's

1 deposition when these questions were asked,
2 and I do agree with this -- with the steps
3 that were shown to be side by side that the
4 Shapero workflow was closer to the Qiagen
5 workflow than the Tecan workflow.
6 Q. So I would like to now go back to Exhibit two
7 thousand -- there we go. I would like to now
8 go back to Exhibit 2205.
9 A. Okay.
10 Q. And I'm going to direct your attention to --
11 on the PDF, it's page number 65. You will see
12 what is noted as Exhibit 17. Do you see that?
13 A. Well, I don't really know what this document
14 is, in the first place. I really have no --
15 because it looks incomplete.
16 Q. So you understand, a moment ago when we were
17 talking about the docket report, we looked at
18 a public filing from the plaintiffs in that
19 case where they filed excerpted versions of
20 documents to the public docket. Do you recall
21 that?
22 MR. BILSKER: Objection. Assumes

1 facts not in evidence. Beyond the scope of
2 his declaration.
3 A. So can we go back to that section in the
4 docket?
5 BY MR. BEAVERS:
6 Q. Yeah, let's look at the docket report.
7 So we're going to go back to Docket
8 Entry Number 338, which I believe was on
9 page 42, if I recall -- 46.
10 A. Sorry, which exhibit number are we?
11 Q. So this is going to be Exhibit 2201.
12 A. -1, okay.
13 And which page?
14 Q. Page 46.
15 A. Right. So I do see there are attachments. I
16 have no idea what those attachments are or
17 the relevance of those attachments based on
18 this description here. I just see that there
19 are attachments.
20 Q. And a moment ago we discussed that the first
21 document, Exhibit 2203, bears the number --
22 the Docket Entry Number 338, and that document

1 contained a portion of your deposition
2 transcript. Do you recall that?
3 MR. BILSKER: Objection. Relevance.
4 Beyond the scope.
5 A. Well, you took me to Exhibit 2 of
6 Exhibit 2203, and on the first page you took
7 me to the cover page of what is titled Remote
8 Oral and Videotaped Deposition of Dr. Michael
9 Metzker. I have no idea whether this is
10 partial, complete, if it's an exhibit to -- I
11 don't understand what the attachments are
12 that you're trying to take me to now.
13 BY MR. BEAVERS:
14 Q. I'm going to represent to you that this is an
15 excerpted version of your deposition
16 transcript. This is the only thing that's
17 available to the public and this is an
18 excerpted version. I will show you -- as you
19 will see, it is, as I said, a portion of your
20 deposition transcript.
21 If you would like to take a moment to
22 read through it, by all means, please.

1 A. Right. But I -- that actually wasn't my
2 question. My question was, you're taking me
3 to exhibit -- I think it's 2205.
4 Q. Yes, that is Exhibit 17 which we are about to
5 discuss.
6 A. Which is part of this deposition that was
7 shown to me as an exhibit?
8 Q. It may be more helpful if we look at
9 Exhibit 17. I think that may clear up some of
10 the questions you have.
11 A. Okay.
12 Q. So if you look, you will see that this exhibit
13 is titled Noninfringement and No Trade Secret
14 Misappropriation Expert Report of Dr. Michael
15 Metzker Responding to the Expert Report of
16 Niall Lennon.
17 Do you see that?
18 A. I do see that, yes.
19 Q. And do you recall authoring a noninfringement
20 report in the ArcherDX litigation?
21 A. This has reminded me that I did provide a
22 noninfringement and no trade secret

1 misappropriation expert report.
2 Q. And just to confirm, again I will represent to
3 you that this is excerpted because this is a
4 public filing, and so this is not a complete
5 version since that is not public. But I would
6 like to show you the end -- I will scroll
7 through, and I would like to show you the end
8 of the report to confirm that it is your
9 signature.
10 MR. BILSKER: Objection. Relevance.
11 And if you need to read through the
12 whole thing, go ahead and read through it.
13 BY MR. BEAVERS:
14 Q. And so you'll see --
15 MR. BILSKER: Well, hold on. You're
16 just scrolling through it. He's actually
17 sitting there and reading it now. And I
18 couldn't even keep up with it, it was
19 scrolling so fast. So he's actually reading
20 it.
21 MR. BEAVERS: Yes, David, I'm
22 directing him to his signature page to ask him

1 about that.
2 BY MR. BEAVERS:
3 Q. Dr. Metzker, is this an accurate copy of your
4 signature?
5 A. That is my signature.
6 Q. And this was executed November 20th, 2020; is
7 that correct?
8 A. That's what the document says.
9 Q. Now I would like to -- once you have oriented
10 yourself with the document, please let me know
11 because I would like to direct your attention
12 back to Table of Contents.
13 And please let me know whenever
14 you're ready for the next question.
15 A. I'm at the Table of Contents.
16 Q. Okay. Great.
17 So you'll see that you have a
18 Section V to the Table of Contents. Do you
19 see that?
20 A. I do.
21 Q. And that's the Overview of the Qiagen Accused
22 Products, is what it says. Right?

1 A. You read that title correctly.
2 Q. Thank you.
3 And does this refresh your memory
4 that you provided opinions with respect to the
5 noninfringement of Qiagen's products that were
6 accused in that litigation?
7 A. Well, as I testified, it refreshed my memory
8 that I did provide a noninfringement and a no
9 trade secret expert report.
10 Q. And, now, do you recall that one reason you
11 offered as to why the asserted -- the accused
12 products were not infringing the asserted
13 patents was that the accused -- the asserted
14 patents were directed to a nested PCR
15 approach, while the Qiagen products used only
16 one PCR step with a gene-specific primer
17 followed by one universal PCR step? Do you
18 recall offering that opinion?
19 MR. BILSKER: Objection. Relevance.
20 A. Not to that detail, I do not recall. If it's
21 in this document, I'm happy to review it.
22 BY MR. BEAVERS:

1 Q. Certainly. And so I'll direct you to subparts
2 A and B.
3 A. Okay, I've read those two titles in the
4 subsection -- Section V.
5 Q. And so would you agree that Qiagen's accused
6 products do not use nested gene-specific
7 primers?
8 A. So --
9 MR. BILSKER: Objection. Assumes
10 facts. Vague and ambiguous.
11 A. So there is not enough information to answer
12 that question. And I have scrolled down
13 below the document, and the pages 29 and 32
14 are not included in this document so there's
15 no way for me to answer that question with
16 any certainty.
17 BY MR. BEAVERS:
18 Q. And as I noted earlier, this is excerpted. We
19 do not have a full copy of the report.
20 But you would agree that, based on
21 what we do have here, that you provided
22 testimony that the Qiagen products use only a

1 single gene-specific primer.
2 MR. BILSKER: Objection. Vague and
3 ambiguous. Relevance.
4 A. I can agree that there is a title that says
5 The Accused QIAGEN Products Use Only One PCR
6 Step With a Gene Specific Primer Followed by
7 One Universal PCR Step. Beyond that, I can't
8 provide any detail without being able to
9 review what was actually written starting on
10 page 29 of this -- of my declaration.
11 BY MR. BEAVERS:
12 Q. And you could also agree that you provided a
13 title that states, Inventors of the '810
14 Patent and '597 Patent Were Surprised That
15 QIAGEN Could Achieve High Specificity Without
16 a Second PCR Round Using Nested Gene-Specific
17 Primers.
18 Do you see that?
19 MR. BILSKER: Objection. Relevance.
20 A. I can agree that that's what the title says.
21 BY MR. BEAVERS:
22 Q. And do you recall providing testimony that the

1 inventors of the asserted patents were
2 surprised that Qiagen was able to achieve high
3 specificity without using a nested PCR
4 approach?
5 MR. BILSKER: Objection. Asked and
6 answered. Relevance.
7 A. Can you be more specific on "testimony"?
8 BY MR. BEAVERS:
9 Q. Certainly.
10 Do you recall whether -- offering a
11 written opinion, deposition testimony, or
12 trial testimony with respect to the statement
13 that we see here?
14 A. Well, I don't have the benefit of reviewing
15 my declaration starting on page 32 of what I
16 actually wrote. I can agree what the title
17 says in this document.
18 As to what I was asked at deposition
19 or at trial, I have no memory of that, being
20 asked or not, and whether I provided any
21 testimony or not.
22 Q. And I understand, you know, again, these are

1 excerpted. This is all that we have publicly.
2 I think there may be another document that may
3 help shed some light here.
4 MR. BEAVERS: I'd like to introduce
5 Exhibit 2206.
6 PLANET DEPOS TECH: One moment.
7 MARKED FOR IDENTIFICATION:
8 EXHIBIT 2206
9 2:22 p.m.
10 BY MR. BEAVERS:
11 Q. And so, Dr. Metzker, we'll put that in the
12 Chat for you so you can download it as well.
13 A. Thank you.
14 Q. And as you will see on the cover page of this
15 document, this is a public version of a brief
16 that Qiagen filed in the ArcherDX case. And I
17 will represent to you that it bears the exact
18 same case number as the other documents that
19 we've discussed, the new exhibits today, and
20 the docket report that we've discussed today.
21 A. Okay.
22 Q. And I'm also going to represent to you that

1 this is a redacted public version of the
2 opposition brief. So, again, we will not have
3 a complete brief given the fact that there is
4 some confidential information that was not
5 included in the public version.
6 A. Okay.
7 Q. Now, if we look at pages 25 and 26 of the
8 brief --
9 A. I have no idea what the relevance of this is.
10 I didn't -- this is something I did not
11 author, and I probably have never reviewed
12 this in this case or in the Archer case.
13 Q. So would it surprise you if Qiagen had taken a
14 position in litigation that was different than
15 the opinions that you had authored in that
16 litigation?
17 MR. BILSKER: Objection. Assumes
18 facts not in evidence. Incomplete
19 hypothetical. Relevance.
20 A. There's no way for me to answer that
21 question.
22 BY MR. BEAVERS:

1 Q. Would you be surprised? Whether or not -- I'm
2 not saying that they did or didn't, but would
3 you be surprised if they did take a position
4 contrary to testimony that you provided?
5 MR. BILSKER: Same objections.
6 A. I would have to review the details to
7 determine whether I would have a surprised
8 reaction or not. I have no idea how to
9 answer that question.
10 BY MR. BEAVERS:
11 Q. Well, I want to refer you to the bot- --
12 middle of the first paragraph on 26. You'll
13 see a statement -- and just for context,
14 you'll see that this is identified as Read
15 Factor 1: Copying in their brief.
16 And you will see a statement that
17 Qiagen made: "QIAGEN did what Archer's
18 inventors said it was unable to do: produce a
19 product with only one enrichment step."
20 Do you see that?
21 A. I agree that that's what the sentence says.
22 Q. And does that at all refresh your recollection

1 as to the opinions that you authored in the
2 noninfringement report that we just discussed?
3 MR. BILSKER: Objection. Assumes
4 facts. Relevance.
5 A. It does not.
6 BY MR. BEAVERS:
7 Q. Okay. Now, in the ArcherDX litigation, do you
8 recall that it went to trial?
9 A. Yes.
10 Q. And do you recall testifying at trial?
11 A. Yes, I did.
12 Q. And do you recall testifying on the
13 noninfringement opinions that you offered in
14 that case?
15 A. I believe that's correct.
16 Q. Now, ultimately the jury found that Qiagen
17 infringed the ArcherDX patents. Right?
18 A. Well, I think initially the jury found that.
19 That ruling was overturned.
20 Q. Right. Because Qiagen appealed to the Federal
21 Circuit. Right?
22 A. I mean, that's my understanding. I wasn't

1 involved in that, but that's my
2 understanding.
3 Q. Now, I'd like to show you what is marked as
4 Exhibit 2207.
5 MARKED FOR IDENTIFICATION:
6 EXHIBIT 2207
7 2:26 p.m.
8 MR. BEAVERS: And we'll put this in
9 the Chat as well for you.
10 THE WITNESS: Thank you.
11 BY MR. BEAVERS:
12 Q. And so you'll see that this document is the
13 opening brief that Qiagen submitted on appeal
14 to the Federal Circuit. I am going to
15 represent to you that I pulled this document
16 off of the public docket for that appeal.
17 A. I'm sorry, if I could just have a moment to
18 look at this because I'm not familiar with
19 reading court documents like this.
20 Q. Absolutely.
21 A. Where does it say -- where does it say it's
22 an opening brief?

1 Q. Yeah, so I'm representing to you it's the
2 brief for the defendants-appellants, and so
3 this will be the opening brief in the appeal.
4 The appellants will issue the first brief.
5 I will represent to you that that is
6 their opening brief.
7 A. Okay.
8 Q. Let me know when you're ready for a question.
9 A. I will do my best. I don't think I've
10 reviewed this document as well, so...
11 Q. I want to direct you to page 11 in the
12 document. And this -- we'll get through a
13 couple of forms that are included as well
14 before we get to their brief.
15 Now, you'll see there is a paragraph
16 that starts with, "There is no dispute that
17 the only unique primer that anneals to a
18 sequence one is interested in analyzing, that
19 is, the target, is the GSP, the gene specific
20 primer."
21 Do you see that?
22 A. I do. But I have no idea where -- what the

1 relevance of this is. Can I have some time
2 to review this document? Because you've
3 taken me into 11 pages, and I don't know what
4 the first 10 pages are even describing to get
5 to this statement.
6 Q. Certainly. Please take your time.
7 A. Thank you.
8 Q. Let me know when you're ready.
9 A. I've read through the end of this page here.
10 Q. Okay. Great.
11 So to direct your attention back to
12 the paragraph in -- on page 11 that starts
13 with, "There is no dispute that the only
14 unique primer that anneals to a sequence one
15 is interested in analyzing, that is, the
16 target, is the GSP, the gene specific primer."
17 Do you see that paragraph?
18 A. I see that sentence.
19 Q. And you see the paragraph that that sentence
20 belongs to. Right?
21 A. I do see the paragraph, but you didn't read
22 anything after the first sentence.

1 Q. Well, we're getting there.
2 So then Qiagen wrote, "All of the
3 other primers are the same across all of
4 QIAGEN'S kits."
5 Do you see that?
6 A. I do see that sentence.
7 Q. "This includes the UP, FP and SIP."
8 Do you see that sentence?
9 A. After the citation, yes, I see that sentence.
10 Q. And then after the citation, do you see the
11 sentence where Qiagen wrote, "QIAGEN carefully
12 designed its process and constructed its GSPs
13 so that its process can enrich for the
14 sequence to be analyzed with a single pair of
15 primers: the GSP and the FP"?
16 Do you see that?
17 A. I do see that sentence.
18 Q. Now, does this sentence refresh your
19 recollection of the testimony that you
20 provided in the district court case?
21 A. It does not.
22 Q. Sitting here today, do you agree with Qiagen's

1 statement?
2 MR. BILSKER: Objection. Relevance.
3 Beyond the scope.
4 A. Which statement would that be?
5 BY MR. BEAVERS:
6 Q. Do you agree that Qiagen carefully designed
7 its process and constructed its GSPs -- oh,
8 sorry. Let me go back to that page.
9 And I'll -- I'll start from the
10 beginning on the question.
11 Sitting here today, do you agree
12 that, "Qiagen carefully designed its process
13 and constructed its GSPs so that its process
14 can enrich for the sequence to be analyzed
15 with a single pair of primers: the GSP and
16 the FP"?
17 MR. BILSKER: Objection. Beyond the
18 scope. Relevance.
19 A. Well, I can read the sentence. I have no
20 reason to disagree with it. But it's nothing
21 that I wrote, so it's -- and there's
22 really -- I mean, I can just agree that

1 that's what the word says, and I have no
2 reason to disagree with that statement.
3 BY MR. BEAVERS:
4 Q. Now, you'll see next, in the next paragraph --
5 it's only a line -- it points to the joint
6 appendix, so "JX 8.12 that both parties relied
7 on depicts the QIAGEN workflow:"
8 Do you see that?
9 A. I do.
10 Q. And on page 12, we see a workflow. Do you see
11 that?
12 A. Yes, I do see the workflow.
13 Q. And that is the same product workflow that
14 Dr. Bustamante compared in his declaration.
15 Right?
16 A. Oh, I would have to confirm that.
17 Q. Oh, I'm -- I'm sorry, I didn't hear you.
18 A. I don't know. I would have to confirm that.
19 Q. Okay.
20 MR. BILSKER: Objection. Beyond the
21 scope of his declaration.
22 MR. BEAVERS: Okay. We can take this

1 exhibit down.
2 Lawrence, I'd like to introduce
3 Exhibit 2208.
4 MARKED FOR IDENTIFICATION:
5 EXHIBIT 2208
6 2:41 p.m.
7 BY MR. BEAVERS:
8 Q. And so I'm going to introduce, and we'll put
9 this into the Chat for you as well, a
10 publication from 2019 that's titled Targeted
11 Single Primer Enrichment Sequencing with
12 Single End Duplex-UMI.
13 Do you see that?
14 A. I do see the title. I don't know if I've
15 reviewed this one or not.
16 MR. BILSKER: Hold on -- hold on just
17 a second.
18 I'm going to ask that we email this
19 to somebody so that we can print this one out.
20 THE WITNESS: Yeah.
21 MR. BILSKER: You have it open. Do
22 you have a way to email it? So can you just

1 email it to me and my secretary Marita [ph].
2 Let me just make sure she's there.
3 MR. BEAVERS: Okay, David, I will
4 email this exhibit to you real quick.
5 MR. BILSKER: Yeah, but I only have
6 my phone. I'm not going to read it on my
7 phone.
8 MR. BEAVERS: Because I don't have
9 your secretary's email so you could forward it
10 to her or whoever.
11 MR. BILSKER: Mike is doing that.
12 MR. BEAVERS: Okay.
13 MR. BILSKER: Stay on the record.
14 I'm just going to let her know that it's
15 coming.
16 MR. BEAVERS: Okay. Perfect. So no
17 need for me. Perfect.
18 THE WITNESS: And this is 2208; is
19 that right?
20 MR. BEAVERS: Yes, this is 2208.
21 Correct. And we'll give your counsel a moment
22 to get that printed before we continue.

1 THE WITNESS: Okay. I have just
2 emailed that to David and his secretary.
3 MR. BEAVERS: Perfect.
4 MR. BILSKER: I just got it, so she's
5 probably printing it out right now.
6 If you have a bunch of other
7 scientific articles that you're going to do,
8 you can email them to me right now so I can
9 send them to my sect.
10 MR. BEAVERS: This is the only
11 scientific article.
12 MR. BILSKER: Dr. Metzker now has a
13 hard copy of the ten-page article.
14 MR. BEAVERS: Great. Okay.
15 BY MR. BEAVERS:
16 Q. Dr. Metzker, let me know when you're ready to
17 resume questions.
18 A. I can agree what the title says. If you want
19 any more detailed questions, I'll probably
20 have to review this document because I have
21 not seen this document before.
22 Q. Okay, so you have not reviewed this document

1 before. Correct?
2 A. I do not remember reviewing this document.
3 Q. Okay. I'm going to ask you some questions.
4 To the extent you feel that you need to look
5 through the document, then we can cross that
6 bridge at that point.
7 But, first, this document --
8 MR. BILSKER: This is 2208? Is that
9 what it is?
10 MR. BEAVERS: Yes. Correct. Yep.
11 BY MR. BEAVERS:
12 Q. So this paper was published in Nature's
13 Scientific Reports. Right?
14 A. That's correct.
15 Q. And Nature's Scientific Reports is a
16 periodical?
17 A. That's kind of an old term. I mean, it is a
18 peer-reviewed journal article.
19 Q. Okay. And so where it's peer-reviewed, you
20 would consider it a reliable source in your
21 field. Right?
22 A. Yeah, I think Scientific Reports is a

1 reputable journal for sure.
2 Q. Now, if we look at the bottom of the first
3 page, you will see a statement, Research and
4 Foundation Department QIAGEN Sciences,
5 Incorporated."
6 Do you see that?
7 A. I do see that.
8 Q. And then you'll see that it -- after it
9 provides the geographical location, Frederick,
10 Maryland, USA, it states, "Correspondence and
11 requests for materials should be addressed to
12 Y.W. (email: yexun.wang@qiagen.com."
13 Do you see that?
14 A. I do see that at the bottom of the page.
15 Q. Now, in your experience, what does it mean
16 when a company is listed on the publication
17 like this?
18 MR. BILSKER: Objection. Vague and
19 ambiguous.
20 A. Well, usually scientific papers will list the
21 authors, which are right below the title, and
22 then they will list their affiliation. And

1 it appears at least the senior author is a
2 Qiagen employee because he has a Qiagen email
3 address.
4 BY MR. BEAVERS:
5 Q. And do you recognize the senior author?
6 A. I do not.
7 Q. Okay. Now, I want to look at the last
8 sentence in the second paragraph of the body,
9 so this will be the last paragraph in -- on
10 the first page.
11 A. Okay. I can have a chance to read at
12 least --
13 Q. Sorry, it will be the middle paragraph.
14 Sorry.
15 And, yes, please, take your time.
16 A. Okay, I've read the first three paragraphs of
17 the introduction.
18 Q. Okay. Great.
19 And I want to direct your attention
20 to the last sentence in the second paragraph,
21 so the middle paragraph in the body.
22 And do you see where the authors

1 wrote, "Although traditional amplicon
2 enrichment using two locus-specific primers
3 can severely limit the coverage of large
4 indels and translocations, and is prone to SNP
5 induced allele dropouts, newer single primer
6 technologies based on ligation mediated PCR
7 have alleviated those concerns."
8 Do you see that sentence?
9 A. I do see that sentence.
10 Q. And do you see that following that sentence,
11 there is -- there are -- is a citation, and
12 I'll zoom in for those following on the
13 screen, to references 3 through 5. Do you see
14 that?
15 A. I do see that.
16 Q. Okay. I want to direct your attention to
17 what's going to be page 9 of the publication,
18 and this will be the References page.
19 A. Yes, I'm there.
20 Q. Okay. Perfect.
21 And if we look at reference 3, we see
22 an article by Zheng titled Anchored multiplex

1 PCR for targeted next-generation sequencing,
2 and this was published in 2014.
3 Do you see that?
4 A. I do see that.
5 Q. And do you recall that Zheng was one of the
6 named inventors on the patents that were
7 asserted in the ArcherDX litigation?
8 MR. BILSKER: Objection. Assumes
9 facts.
10 A. I don't recall if Zheng was a named inventor
11 on the patents in the Archer case.
12 BY MR. BEAVERS:
13 Q. Do you know of Dr. Zheng?
14 A. I'm familiar with this publication.
15 Q. Now, if we look at the next reference,
16 reference 4, we'll see Scolnick, Dimon, Huelga
17 -- or, sorry, Wang, Huelga, and Amorese. Do
18 you see that?
19 A. I do see those authors listed in reference 4.
20 Q. And do you recognize that that is a paper that
21 Dr. Bustamante testified about in his
22 declaration?

1 A. I remember -- I read this paper, and I read
2 it because it was cited in his declaration.
3 I don't remember specifically what he said
4 about this paper in his declaration.
5 Q. You recall that this paper describes NuGEN's
6 ovation product workflow?
7 A. I think as of 2015, I think that's correct.
8 Q. And then if we look at the fifth reference,
9 we'll see that the senior author here is
10 Dr. Wang, and it's titled Detecting Very Low
11 Allele Fraction Variants Using Targeted DNA
12 Sequencing and a Novel Molecular Barcode-Aware
13 Variant Caller, and this is the 2017
14 publication.
15 Do you see that?
16 A. I do see those authors in Reference 5.
17 Q. And you understand that those authors are
18 Qiagen employees. Correct?
19 A. I actually wouldn't know that just by reading
20 Reference 5.
21 Q. Okay. Now, looking at references 3 through 5,
22 does it surprise you that Qiagen did not cite

1 to Shapero or Jones?
2 MR. BILSKER: Objection. Vague and
3 ambiguous.
4 A. Mr. Beavers, can you repeat your question,
5 please?
6 BY MR. BEAVERS:
7 Q. Yes.
8 So my question was whether it
9 surprised you that Qiagen does not cite to
10 Shapero or Jones.
11 MR. BILSKER: Objection. Vague and
12 ambiguous.
13 A. No, it doesn't -- doesn't surprise me at all.
14 MR. BEAVERS: And we've been going
15 for quite some time. I think this is a good
16 time to take a break, so let's say ten
17 minutes.
18 MR. BILSKER: Sure.
19 (Off the record at 2:58 p.m.)
20 (Back on the record at 3:09 p.m.)
21 BY MR. BEAVERS:
22 Q. Dr. Metzker, would it surprise you that Qiagen

1 has taken the position that its single primer
2 enrichment technology is eligible for patent
3 protection?
4 MR. BILSKER: Objection. Vague and
5 ambiguous. Overbroad. Assumes facts not in
6 evidence.
7 A. Can you repeat that question, please?
8 BY MR. BEAVERS:
9 Q. Certainly.
10 Would it surprise you that Qiagen has
11 taken the position that its single primer
12 enrichment technology is eligible for patent
13 protection?
14 MR. BILSKER: Same objections.
15 A. I have no idea what Qiagen has done or plans
16 to do or anything else.
17 MR. BEAVERS: Lawrence, I'd like to
18 introduce what is marked as Exhibit 2209.
19 MR. BILSKER: So I -- is this a
20 patent application?
21 MR. BEAVERS: This exhibit is a
22 patent application.

1 MR. BILSKER: So you're going to need
2 to email it to us, and then I can have my
3 secretary print it out.
4 MR. BEAVERS: If you don't mind,
5 Lawrence, could we add that to the Chat as
6 well?
7 PLANET DEPOS TECH: It's uploading.
8 MR. BEAVERS: Perfect.
9 And to save you time -- so, David,
10 were you going to print these documents out --
11 I'm going to go ahead as well and introduce
12 Exhibits 2210, 2211, and 2212. We'll talk
13 about those in time, but I just want to
14 introduce those now so that you can print them
15 before we continue.
16 THE WITNESS: I just sent you 2209.
17 MR. BEAVERS: And those exhibits are
18 all in the Chat.
19 MR. BILSKER: You sent it to Mel, is
20 what you're saying?
21 THE WITNESS: Uh-huh.
22 MR. BEAVERS: And let's go ahead --

1 while you print those, David, let's go ahead
2 and take, I guess, a five-minute break.
3 MR. BILSKER: No, we're going to stay
4 -- no, no, we're staying on the record.
5 Because, again, I asked you to send these to
6 us beforehand so that we wouldn't be wasting
7 time, so we're staying on the record while we
8 do this.
9 MR. BEAVERS: That's fine with me,
10 David.
11 Let me know when you're ready.
12 THE WITNESS: I'm sending the next
13 three that he just sent us, emailed it to you.
14 MR. BILSKER: So that's five total?
15 THE WITNESS: There's four.
16 MR. BILSKER: Four. Right?
17 MR. BEAVERS: Yes, there are four
18 exhibits. It's 2209 through 2212.
19 MARKED FOR IDENTIFICATION:
20 EXHIBITS 2209 - 2212
21 3:13 p.m.
22 MR. BEAVERS: All good on the

1 printouts?
2 MR. BILSKER: We're waiting still.
3 MR. BEAVERS: Okay.
4 THE WITNESS: I don't know how big
5 that patent was. 23 pages? Or application,
6 rather.
7 FEMALE SPEAKER: So I only received
8 one exhibit.
9 MR. BILSKER: There's another email.
10 FEMALE SPEAKER: It's probably
11 coming.
12 MR. BILSKER: And it has three
13 attachments.
14 FEMALE SPEAKER: Okay.
15 MR. BILSKER: You can start with the
16 patent. We're printing out the other ones.
17 MR. BEAVERS: Okay. Thank you.
18 And that's Exhibit 2209. Correct?
19 MR. BILSKER: Sorry, say that one
20 more time?
21 MR. BEAVERS: So it's Exhibit 2209
22 that you have printed, the patent application

1 that's on the screen now?
2 MR. BILSKER: Correct.
3 MR. BEAVERS: Okay. Great.
4 BY MR. BEAVERS:
5 Q. So, Dr. Metzker, if we look at this exhibit,
6 you'll see that this patent application
7 publication published at the beginning of this
8 year. Do you see that?
9 A. I see, at the top, a publication date of
10 January 2nd, 2025.
11 Q. And you'll see that the applicant is Qiagen
12 Sciences LLC. Do you see that?
13 A. I do see that.
14 Q. And you'll see that it also states PCT Filed,
15 and the date is October 15, 2021. Do you see
16 that?
17 A. I do see that date.
18 Q. Okay. And I want to direct your attention to
19 Figure 1 of the patent.
20 Now, if we look at Figure 1 of the
21 patent, it illustrates the single primer
22 enrichment workflow. Right?

1 A. I'm sorry, which workflow are you referring
2 to?
3 Q. The Qiagen single primer enrichment workflow.
4 MR. BILSKER: Objection. Vague and
5 ambiguous.
6 A. I would have to review this document to
7 answer that question, because when I look
8 just at the abstract, this is about
9 incorporating the UTPs into DNA fragments and
10 treating with uracil-DNA glycosylase, and
11 kits for preparing DNA libraries.
12 And so, I mean, I do see there is a
13 single primer extension, but I don't really
14 think that's what this patent is about.
15 BY MR. BEAVERS:
16 Q. Uh-huh. And so you do see, though, with
17 respect to Figure 1, that it has a targeted
18 enrichment by SPE step.
19 MR. BILSKER: Objection. Relevance.
20 Beyond the scope.
21 A. I'm sorry, what was the question?
22 BY MR. BEAVERS:

1 Q. So if you look at Figure 1, you see that it
2 has a step labeled "Target enrichment by SPE."
3 Do you see that?
4 A. I see those words in Figure 1.
5 Q. And then you see a subsequent step, "Universal
6 PCR amplification i5/i7 indexing."
7 Do you see that?
8 A. I do see those words.
9 Q. Okay.
10 MR. BEAVERS: Now, let me know,
11 David, when you have Exhibit 2210 printed.
12 MR. BILSKER: I will let you know.
13 MR. BEAVERS: Thank you.
14 THE WITNESS: Yeah, it shows that it
15 was sent from my computer.
16 MR. BILSKER: We have the other
17 exhibit.
18 MR. BEAVERS: Great.
19 BY MR. BEAVERS:
20 Q. Dr. Metzker, are you ready to resume?
21 A. Yes.
22 Q. All right. So I'll direct your attention to

1 Exhibit 2210.
2 A. Yes. I have it in front of me.
3 Q. And you'll see that this exhibit bears the
4 European Patent Number 3,362,577. Do you see
5 that it lists, at 73, the proprietor as Qiagen
6 Sciences LLC?
7 A. I do see that.
8 Q. And you can see that Qiagen filed for this
9 patent on October 14th, 2016.
10 MR. BILSKER: Objection. Relevance.
11 Beyond the scope.
12 A. Sorry, Mr. Beavers, what was that date again?
13 BY MR. BEAVERS:
14 Q. So if you look at "Date of filing" next to 22,
15 you'll see a 14.10.2016.
16 So you would agree that Qiagen filed
17 for this patent on October 14, 2016. Right?
18 MR. BILSKER: Same objections.
19 A. That's what's listed on the cover page.
20 BY MR. BEAVERS:
21 Q. And if we look at the International
22 Application Number -- this is 86 -- you'd

1 agree that it lists PCT/US2016/057073.
2 Do you see that?
3 A. I do see that at number 86.
4 Q. And then at number 54, you'll see that this
5 patent is titled Methods and Kits for Highly
6 Multiplex Single Primer Extension.
7 Do you see that?
8 A. Can you repeat that, please?
9 Q. Yes.
10 So if you look at what is
11 paragraph 54, you'll see Methods and Kits for
12 Highly Multiplex Single Primer Extension.
13 Do you see that?
14 A. I do see that title.
15 Q. Okay. Great.
16 Now I'd like you to flip to the last
17 page of the document.
18 A. Okay, I'm at the last page.
19 Q. And so at the last page you'll see a statement
20 References Cited in the Description.
21 Do you see that?
22 A. I do.

1 Q. Okay. And you'll see two subsections. One
2 contains patent documents that are cited in
3 the description, and the other contains
4 nonpatent literature cited in the description.
5 Do you see that?
6 A. I do.
7 Q. Okay. And if we look at the nonpatent
8 literature, do you see any reference to
9 Shapero or Jones?
10 A. I don't. I don't see any reference, and I'm
11 not surprised because this is a patent about
12 improving the primer annealing efficiency
13 using a protein called MutS.
14 Q. Uh-huh. And we'll talk about that in a
15 second.
16 But if you look then at the patent
17 documents cited in the description, do you
18 recognize any of these numbers as being a
19 patent for Jones or Shapero, to the best of
20 your ability?
21 MR. BILSKER: Objection. Beyond the
22 scope. Relevance.

1 A. Well, I'm -- for this case, I'm only familiar
2 with two patents from Jones. There may be
3 other patents that Jones has filed, and I
4 would not be familiar with those numbers at
5 all.
6 BY MR. BEAVERS:
7 Q. Okay. And the U.S. -- you'll see there are
8 three U.S. patent applications, and for those
9 applications, the starting numbers are either
10 2009 or 2010. Correct?
11 A. That's what's listed here.
12 Q. Okay. And then there's two issued patents,
13 which are then -- the first patent has a
14 bracket for paragraph 1, and the second patent
15 has a bracket for paragraph 61. Correct?
16 A. I don't know what those bracketed numbers
17 represent.
18 Q. Okay. I will represent to you that those
19 bracketed numbers refer to the paragraphs that
20 are within this document, the labeled
21 paragraphs.
22 A. Okay.

1 Q. And so I'd like to take a look at the first
2 U.S. patent, so this is going to be at
3 paragraph 1. So we'll flip back to the
4 beginning.
5 And so you will see this on page 3 of
6 the document.
7 A. Yes, I'm there.
8 Q. Okay. And you will see that there's a
9 statement here, that, "This application claims
10 the benefit under 35 U.S.C. Section 119(e) to
11 U.S. Provisional Application Number
12 62/242,766, filed October 16, 2015."
13 Do you see that?
14 A. I see the sentence.
15 Q. Okay. And then let's flip to paragraph 61.
16 A. I don't see the relationship to the issued
17 patent on page 23, though.
18 Q. Understood.
19 Let's look at paragraph 61. And if
20 we look at paragraph 61, first off, if you
21 look -- and if you'd like, here, at the end of
22 the paragraph, you will see a reference to a

1 U.S. patent number. And if you'd like to
2 compare that to -- this is 5,877,280. And you
3 will see that that is the same patent number
4 that's recorded on the last page for paragraph
5 61.
6 Do you see that?
7 MR. BILSKER: Objection. Beyond the
8 scope. Relevance.
9 A. Mr. Beavers, if I can have a moment to review
10 paragraph 61.
11 BY MR. BEAVERS:
12 Q. Absolutely.
13 A. Okay. Again, I think that's what the real
14 scope of the invention is, is about the use
15 of this MutS protein for increasing the
16 hybridization efficiencies, and it's
17 describing things that have mismatches or
18 unpaired bases or insertion/deletion loops,
19 things like that, and it's not surprising
20 that it's citing to a patent. Probably -- I
21 haven't read that patent, but the one that
22 ends in '280 is related to the MutS protein.

1 Q. And so you would agree that the sentence right
2 before that string citation that includes the
3 patent states, "Exemplary thermostable MutS
4 proteins include MutS proteins from" -- and
5 then there are five different species.
6 Do you see that?
7 A. I do.
8 MR. BILSKER: Objection. Relevance.
9 BY MR. BEAVERS:
10 Q. Have you used a MutS protein before?
11 MR. BILSKER: Objection. Relevance.
12 Beyond the scope.
13 A. I don't think I actually have used a MutS
14 protein. I'm familiar with their uses, but
15 in my own work, I don't think I've used it.
16 BY MR. BEAVERS:
17 Q. Okay. Now I want to direct you back to the
18 first page. And so at the first page, you'll
19 see -- and this is going to be at number 21 --
20 you'll see there's an application number, and
21 this is 16784755.7. Do you see that?
22 A. I do see that.

1 Q. Okay. I want you to bear that in mind for a
2 minute.
3 So would it surprise you that Qiagen
4 described to a patent office that its use of a
5 single target-specific primer rather than a
6 primer pair was what differentiates its
7 invention from the standard prior art methods?
8 MR. BILSKER: Objection. Assumes
9 facts not in evidence. Mischaracterization.
10 Beyond the scope. Relevance.
11 A. Yeah, I think the patent application in
12 Exhibit 2210 really is an invention around
13 the scope of the use of MutS and improving
14 the hybridization efficiencies of primers.
15 BY MR. BEAVERS:
16 Q. So you would be surprised, then, if Qiagen had
17 described its use of a single target-specific
18 primer rather than a primer pair is what
19 differentiated its invention from the standard
20 prior art methods. Right?
21 MR. BILSKER: Objection. Assumes
22 facts not in evidence. Mischaracterization.

1 Beyond the scope. Relevance.
2 A. The invention being what is described in the
3 European patent application ending in '577?
4 BY MR. BEAVERS:
5 Q. Yes.
6 A. I have no idea what Qiagen has represented,
7 but, you know, I've briefly looked at the
8 European patent application.
9 And you can look at paragraph 31,
10 for example, where it is describing, "Faced
11 with challenges of low primer annealing
12 efficiency and specificity, the present
13 inventors have identified a solution to
14 increasing primer annealing extension
15 efficiency while improving primer extension
16 specificity via a combination of magnesium at
17 a concentration higher than in a typical PCR
18 reaction and a MutS protein."
19 I mean, I think that's what the
20 invention is really trying to describe, is the
21 improvements, that it may be in single primer,
22 but I think that's what the invention is

1 about.
2 Q. So you would understand -- where it says, "via
3 a combination of magnesium at a concentration
4 higher than in a typical PCR reaction," you
5 would understand that to mean that magnesium
6 was used in PCR reactions and the invention is
7 directed to higher concentrations; is that
8 correct?
9 MR. BILSKER: Objection. Beyond the
10 scope. Relevance.
11 And what paragraph are you referring
12 to?
13 MR. BEAVERS: So this is paragraph 31
14 of the patent.
15 A. Mr. Beavers, is there a pending question?
16 BY MR. BEAVERS:
17 Q. Oh, yes, there is.
18 So, Dr. Metzker, I had asked you, "So
19 you would understand -- where it says 'via a
20 combination of magnesium at a concentration
21 higher than in a typical PCR reaction,'" that
22 that would mean that magnesium was used in PCR

1 reactions and that the invention is directed
2 to a higher concentration of it.
3 MR. BILSKER: Objection. Beyond the
4 scope. Relevance.
5 A. Well, your question leaves out the MutS
6 protein. It's the combination of a higher
7 concentration of magnesium with the MutS
8 protein.
9 Now, if your question is geared
10 towards was magnesium used in PCR, a person of
11 ordinary skill in the art would know the
12 basics that polymerase requires a magnesium
13 ion cofactor to synthesize DNA in any
14 polymerase extension reaction, be it PCR,
15 single primer extension, or sequencing, that
16 magnesium ion is a required cofactor.
17 Q. Right.
18 So I'd like to direct your attention
19 now to Exhibit 2211.
20 A. Okay.
21 Q. Okay. And I'm going to show you a
22 communication from Qiagen to the European

1 Patent Office during the prosecution of this
2 application, the patent we just discussed, and
3 I'm going to represent to you that I retrieved
4 this document from a global dossier.
5 If we look at this document, you can
6 see --
7 A. Sorry, I don't know what that means at all.
8 Q. Certainly. I'm just going to represent to you
9 that I retrieved this from a public database
10 where you can retrieve prosecution materials
11 for European patent proceedings.
12 And so if we look at the document,
13 you'll see that it lists the same European
14 patent application number as the patent we
15 just looked at. Right? It's 16784755.7.
16 A. The letter has a -1111 which is not listed on
17 the European patent specification cover page.
18 Q. Understood.
19 And you'll see that the applicant is
20 Qiagen Sciences LLC. Do you see that?
21 A. I do see that in Exhibit 2211.
22 Q. And you also see that the title is "Methods

1 and Kits for Highly Multiplex Single Primer
2 Extension."
3 Do you see that?
4 A. I do see that title.
5 Q. Okay. And this letter is dated October 26,
6 2020. Do you see that?
7 A. Yes, I do see the date October 26th, 2020.
8 Q. Okay. Now I'm going to direct you to page 2
9 of the letter.
10 A. I'm going to need time to review this letter.
11 I have not seen this letter before. I'm not
12 even sure what the purpose of this letter is.
13 Q. Certainly.
14 And just to go ahead and give you
15 just a little bit of direction here, I'm going
16 to be asking you questions about paragraph 1.1
17 on the second page.
18 Please take your time in reviewing
19 this document.
20 A. Okay, I've read through paragraph 1.1.
21 Q. Okay. Great.
22 And so I want to direct your

1 attention toward the middle of this paragraph,
2 and so you'll see --
3 A. I'm sorry to interrupt. What I will say is,
4 it looks like it is a response to a European
5 proceeding. I have no idea what an IPRP,
6 Item VIII is. I have no idea what they're
7 responding to.
8 And so, I mean, can you -- I mean,
9 this is not enough information to -- I mean,
10 I can agree that maybe the words are in the
11 paragraph, but there's no way for me to
12 interpret what they are doing in this
13 document as they're responding to something
14 that I haven't looked at.
15 Q. Yeah, and I understand, Dr. Metzker, that you
16 were not involved in the prosecution of this
17 patent and that, you know, this is a
18 proceeding that may not be so familiar to you.
19 I want to ask you, though, about some
20 specific statements, and to the extent that
21 you feel that you need more context at that
22 point, by all means, please, you know, make

1 that note. But I do want to direct you to
2 some of the statements that Qiagen made to the
3 patent office.
4 And so you will see that Qiagen -- in
5 the section in this paragraph about clarity,
6 Qiagen mentions that the -- the application,
7 the invention they're applying to, are for --
8 "There are 1000 different target specific
9 primers, however each primer only binds to one
10 target and these primers are not
11 complementary. The one primer bound to one
12 target is then extended to amplify the target
13 sequence.
14 "There is no reverse primer directed
15 to the other end of the DNA, the amplification
16 only takes place from one end. This
17 difference is crucial, because it is what
18 differentiates the claimed methods from the
19 standard prior art methods for amplifying
20 polynucleotides, which require a forward and a
21 reverse primer."
22 Do you see that statement?

1 A. Okay, again, I can agree the words are in
2 this paragraph. What they're actually
3 responding to and the questions that the
4 examiner is raising, I have no idea.
5 Q. So does this statement refresh your
6 recollection at all about your testimony that
7 you gave in the ArcherDX case distinguishing
8 Qiagen's products from the ArcherDX
9 inventions?
10 MR. BILSKER: Objection. Vague and
11 ambiguous. Beyond the scope. Relevance. And
12 I'm going to again remind you of your
13 obligations under 37 C.F.R. 42.12.
14 MR. BEAVERS: Thank you, David.
15 BY MR. BEAVERS:
16 Q. Dr. Metzker, you may answer.
17 A. I have -- I have no idea how to answer that
18 question. Again, this -- this is in response
19 to an office action. I don't know what the
20 examiner is actually questioning and how
21 they're responding to that.
22 And again this invention seems to me

1 more related to the use of the MutS protein
2 and increasing the annealing efficiency of
3 their library production, so I have no idea
4 how this relates to Archer.
5 Q. You'd agree, though, that Qiagen is not
6 differentiating in this paragraph the prior
7 art based on the MutS protein or any other
8 point, they're differentiating based on
9 whether they're using a single target-specific
10 primer or a primer pair. Right?
11 MR. BILSKER: Objection. Absolute
12 mischaracterization. Relevance. Beyond the
13 scope. And I'm going to again remind you of
14 your obligations under 42.12.
15 MR. BEAVERS: Thank you again, David.
16 BY MR. BEAVERS:
17 Q. Dr. Metzker, you may answer.
18 A. Yeah, and I think Qiagen is responding to
19 something that the examiner said which I
20 don't have the benefit of even reviewing, so
21 I have no idea why they're writing this other
22 than they appear to be responding to a

1 question that the examiner is asking, and I
2 think they're being -- they're trying to
3 address, you know, whatever -- whatever.
4 Like, there's too many unknowns here
5 to know exactly what the purpose of this
6 paragraph is in the first place.
7 Q. Now, you're aware that U.S. patent
8 applications -- or applicants are required to
9 discuss -- or disclose relevant prior art that
10 they are aware of to the patent office during
11 prosecution. Right?
12 A. Right, so we're not talking about European
13 patents anymore, you're asking --
14 Q. And I should say, we're setting this aside.
15 This is a new topic.
16 A. Okay. Well, I'm not a patent agent and I'm
17 not a legal scholar, but my understanding is
18 there is a duty to disclose all of the
19 relevant prior art to the patent office.
20 That's not cumulative. There's no obligation
21 to do that, but the applicants are required
22 to disclose all the relevant art to their

1 knowledge.
2 Q. Now, when Qiagen sought U.S. patents on its SP
3 technology, it failed to disclose Shapero or
4 Jones to the patent office. Does that
5 surprise you?
6 MR. BILSKER: Objection.
7 Mischaracterization. Beyond the scope.
8 Relevance. Abuse of the process.
9 A. Are we on a different exhibit now, or just in
10 general? Because I have no idea which
11 patents you're referring to.
12 BY MR. BEAVERS:
13 Q. Just, first, the question, would it surprise
14 you if Qiagen had failed to disclose Shapero
15 or Jones to the patent office or a patent
16 directed to its single primer enrichment
17 technology?
18 MR. BILSKER: Objection. Assumes
19 facts not in evidence. Beyond the scope.
20 Relevance. And incomplete hypothetical.
21 A. I have no reaction one way or the other
22 because I don't have enough information to --

1 it all comes down to details of the patent
2 application, what is -- what is actually
3 being claimed and described in the patent
4 application, and you've provided none of that
5 to me so I really would not know how to
6 answer that question.
7 BY MR. BEAVERS:
8 Q. Certainly. Let's fix that. Let's look at
9 Exhibit 2212. And you'll see that this is a
10 U.S. Patent Number 10,941,438.
11 Do you see that?
12 A. I do see that as the patent number.
13 Q. And you see that the date of this patent is
14 March 9th, 2021. Do you see that?
15 A. I do see that as the date of the patent.
16 Q. And you'll see that the applicant is Qiagen
17 Sciences LLC.
18 A. I do see that.
19 Q. And if you look at related U.S. application
20 data -- so this is number 60 -- you'll see
21 that there is a Provisional Application
22 Number 62/242,766 which was filed on

1 October 16th, 2015.
2 Do you see that?
3 A. I do see that provisional application number.
4 Q. Now, Dr. Metzker, I'd like you to take a
5 moment, look at the References Cited at number
6 56, and please let me know if you see a
7 reference to Shapero or Jones listed in the
8 References Cited.
9 A. Well, again, I'm only familiar with two
10 patent publication numbers to Jones. There
11 may be others that they had filed as part of
12 a family of that patent portfolio.
13 I do not see, in the seven
14 applications or patents that are listed,
15 either belonging to Jones that I'm familiar
16 with, either the '577 or the '348. Those are
17 the only two that I would be familiar from
18 Jones, but there may be others out there that
19 I'm unfamiliar with.
20 Q. Uh-huh. And if we look at Other Publications,
21 do you see a reference to Jones or Shapero?
22 MR. BILSKER: Objection. Beyond the

1 scope. Relevance.
2 A. Well, this looks like the same patent that we
3 were talking about in Exhibit 2210, but this
4 is just the U.S. version. They both have the
5 same PCT/US2016/057073, which, again, as I've
6 testified, I think this invention is really
7 about increased magnesium concentration in
8 combination with the MutS protein.
9 So I'm not -- I wouldn't be
10 surprised at all because it's really about
11 improvement in the primer extension reaction,
12 not the actual method itself, and that's
13 what's described in the abstract here.
14 And if you look at the claims,
15 it's -- the claims are about performing
16 multiplex single primer extension reaction
17 comprising extending at least 1,000 different
18 primers and a single primer extension
19 reaction using a plurality of target nucleic
20 acids as templates in the presence of, one, a
21 MutS protein and, two, magnesium ion at a
22 minimum concentration of 6 millimolar to

1 generate extension products where the primers
2 of each differ from each other.
3 Q. Thank you, Dr. Metzker.
4 A. So that is -- that's what the invention is
5 about.
6 Q. So, Dr. Metzker, just to clarify, and I think
7 I know your answer based on what you've just
8 said, but there is no reference to Shapero or
9 Jones in the Other Publications section of
10 this patent. Correct?
11 MR. BILSKER: Objection. Beyond the
12 scope. Relevance.
13 A. No, but it's -- it's not because I think --
14 you know, if I look at the other
15 publications -- for example, there is one
16 from Brotherton titled "Single primer
17 extension (SPEX) amplification to accurately
18 genotype highly damaged DNA templates," so I
19 think that really is more of the focus of
20 this invention.
21 BY MR. BEAVERS:
22 Q. So to be clear, again, there is no reference

1 to Jones or Shapero in that list. Right?
2 A. I agree, I do not see a reference to Jones.
3 I'm not familiar with a Jones publication. I
4 am familiar with the Shapero publication and
5 I don't see it listed on the cover page.
6 Q. Thank you.
7 MR. BEAVERS: Let's take a break,
8 let's say five minutes, and then we'll go back
9 on the record.
10 MR. BILSKER: Yeah, hold on just a
11 second. It's 1:00 here almost. I don't know
12 how you're feeling as far as hunger.
13 THE WITNESS: I'm getting a little
14 hungry, actually.
15 MR. BILSKER: I assume we're going to
16 keep going for a little while?
17 MR. BEAVERS: So, actually, David,
18 you know, I just want to go back over my
19 notes. I think I am finished. So, you know,
20 I'd rather, you know, take a short break.
21 MR. BILSKER: If you think you're
22 almost finished or finished within 25, 30

1 minutes, then we'll take a short break and
2 come back.
3 MR. BEAVERS: Absolutely. Let's do
4 that. Let's do a five-minute break and then
5 we can come back.
6 (Off the record at 3:57 p.m.)
7 (Off the record at 4:03 p.m.)
8 MR. BEAVERS: Dr. Metzker, thank you
9 for your time. I have no further questions
10 with respect to the '012 and the '108 patents,
11 and then I have no questions with respect to
12 the '357 patent, so at least on my end we're
13 finished with the deposition for today.
14 MR. BILSKER: Okay. No questions.
15 MR. BEAVERS: Thank you.
16 (Proceedings concluded at 4:03 p.m.)
17
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22

1 REPORTER'S CERTIFICATE
2
3 I, Alison C. Webster, Certified Reporter
4 and Notary Public within and for the State of
5 Michigan do hereby certify:
6
7 That MICHAEL L. METZKER, Ph.D., the
8 witness whose deposition is hereinbefore set
9 forth, was duly sworn by me before the
10 commencement of such deposition and that such
11 deposition was taken before me and is a true
12 record of the testimony given by such witness.
13
14 I further certify that the adverse party,
15 TECAN GENOMICS, INC., was represented by
16 counsel at the deposition.
17
18 I further certify that the deposition of
19 MICHAEL L. METZKER, Ph.D., occurred at
20 remotely on Wednesday, December 3, 2025,
21 commencing at 12:46 p.m. to 4:03 p.m.
22

I further certify the inspection, reading and signing of said deposition was waived on the record by agreement of all parties.

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.

In WITNESS HEREOF, I have hereunto set my hand this December 6, 2025.

Alison C. Webster

ALISON C. WEBSTER, CSR NO. 6266

1 ACKNOWLEDGMENT OF DEPONENT
2
3
4 I, MICHAEL L. METZKER, Ph.D., do hereby
5 acknowledge that I have read and examined the
6 foregoing testimony and the same is a true,
7 correct, and complete transcription of the
8 testimony given by me and any corrections
9 appear on the attached errata sheet signed by
10 me.
11
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13
14
15
16 _____
17 (SIGNATURE)
18
19
20
21 _____
22 (DATE)

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