UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CRUSOE ENERGY SYSTEMS, LLC,

Petitioner,

v.

CERTIFIED COPY

UPSTREAM DATA INC.,

Patent Owner.

Case PGR2023-00039 (US Patent No. 11,574,372)
Ref. 54598-0001PS1

VIDEOCONFERENCE DEPOSITION OF

STEPHEN BARBOUR

JUNE 12, 2024

Page 1 - 306 11:03 a.m. EST - 8:54 p.m.

REPORTED BY:
Tamara L. Houston
CA CSR No. 7244, RPR, CCRR No. 140
Job Number 24-137874

Exhibit 1033
Crusoe v. Upstream
PGR2023-00039

REMOTE VIDEOCONFERENCE DEPOSITION OF STEPHEN BARBOUR, taken on behalf of the Petitioner, commencing from 11:03 a.m. EST to 8:54 p.m., Wednesday, June 12, 2024, before Tamara L. Houston, CSR No. 7244, CCRR, RPR.

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WITNESS: STEPHEN BARBOUR

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STEPHEN BARBOUR

CRUSOE ENERGY SYSTEMS, LLC vs. UPSTREAM DATA INC.

JUNE 12, 2024

Tamara L. Houston, CSR No. 7244, CRR No. 140, RPR

EXHIBIT	DESCRIPTION	PAGE
Ex 1024	Patent Filing For Hash Generator	128
Ex 1025	U.S. Patent No. 11,907,029	134
Ex 1027	Document Titled "Hash Hut"	232
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REFERENCED EXHIBITS:

Ex 1001	U.S. Patent No. 11,574,372	142
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Ex 1017	Patent Application Titled "U.S. Application No. 2014/0096837 Titled Belady"	56
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(Exhibits marked electronically.)

WEDNESDAY, JUNE 12, 2024, 11:03 A.M. EST

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All counsel present stipulate that the witness shall be sworn remotely by the court reporter

*** * ***

Whereupon, STEPHEN BARBOUR, having been called as a witness was duly sworn to tell the truth, the whole truth, and nothing but the truth testified as follows:

DIRECT EXAMINATION BY MR. ZHU:

Q. Mr. Barbour, can you please spell your name for the record.

A. S-T-E-P-H-E-N, Stephen Barbour, B-A-R-B-O-U-R.

Q. So are you located in Calgary, Canada?

A. Yes, sir.

Q. Can you give us your business address, for the record?

A. Yep. The business is 5702 63rd Avenue, Lloydminster, Alberta T9V, for "Victor," 3T7, postal code.

Q. I think we went over this earlier. You are at home, right?

Is there anyone else with you in the room?

A. No. The family, wife and kids and dog are out of the house for the day. Just for you guys.

Q. Okay. Have you been deposed before?

A. No, this is my first -- first experience.

Q. Have you testified in other court proceedings or administrative proceedings before?

A. No, I don't think so.

Q. Okay. Let me go over the rules with you, then.

Well, I ask, first of all, do you understand you're testifying under oath today?

A. Yes, sir.

Q. And do you understand the oath you just swore, you know, has the same effect as if you were testifying in a courtroom?

A. Yes, sir.

Q. Is there any reason, medical or otherwise, you know, that means you cannot provide your whole, complete, and truthful testimony today?

A. There's no reason that I can think of.

Q. Okay. Do you understand today I'll be asking questions and you'll be providing answers?

A. Yes, sir.

Q. Okay. So I just want to know -- it's

important you and I try to not speak over each other. This is for the benefit of the court reporter because she needs to type things down.

In other words, if I ask a question, you think you know the answer even before I finish, it's still important to let me finish my question so that the court reporter can take down the testimony.

Does that make sense?

A. Yes. I'll pause after every question.

Q. Okay. Perfect.

Along the same lines, you know, for the benefit of the reporter, can you please provide verbal answers as opposed to nodding or shaking your head?

A. Yes, sir, I will.

Q. And hopefully my answers will be -- I'm sorry.

Hopefully my questions will be clear today so -- but if you don't understand the question, let me know if it's unclear.

If you don't ask for a clarification, I'll assume you understand the question. Okay?

A. Yes, sir.

Q. All right. And during the depo today, if you ever need a break, you know, for water, for

bathroom, please just let me know, and we'll take a break as long as there is not a pending question. If there is a question pending, you must still answer the question before the break.

Do you understand that?

A. Yes, I understand.

Q. All right. And I'm sure your counsel probably went over this with you. So from time to time, he'll say "objection" for various reasons, but you're still required to answer the question unless you are instructed not to.

Do you understand that?

A. Yes.

Q. Okay. Mr. Barbour, do you swear to tell the truth, the whole truth, and nothing but the truth?

A. Yes.

Q. All right. Mr. Barbour, where did you go to college?

A. I went to university at Memorial University of Newfoundland, Labrador.

Q. And when was that?

A. I graduated in 2011.

Q. When did you start college over there?

A. I was enrolled at the end of 2005.

Q. I see.
A. After my high school graduation.
Q. So you spent -- let's see -- 2005 to 2011 in college? Right?
A. Yes. Approximately six years.
Q. Okay. So is there any reason it took you six years instead of four to finish college?
A. Yes. Our engineering program had what they call cooperative work placements, and there was two years' worth of six periods of four-month work placements that I participated in.
Q. I see.
A. So four years of education and six years of -- or sorry, two years of work placements.
Q. I see. I see.
So that will be, you know, similar to the internship, right, at a company?
A. Yes.
Q. What did you study in college?
A. I enrolled in -- to get a bachelor's in engineering degree, in which case I had specialized in mechanical engineering.
Q. I see.
Did you take any classes on blockchain technology in college?

(Reporter requested clarification.)
MR. ZHU: Blockchain.
THE WITNESS: As far as I know, it didn't exist. Probably the only thing close to it was cryptography.
BY MR. ZHU:
Q. I see.
And -- and did you take cryptography in class? Sorry.
Did you take that class in college?
A. No. With great regret.
Q. I see.
Did you take any classes on generators or generator design?
A. No. The closest thing that we learned -- that we would have taken in a class was a small lab rebuilding a lawnmower engine.
Q. I see.
Did you publish any academic articles, you know, any of the related subjects?
A. Related to what? Related to --
Q. Related to blockchain technology or generators.
A. No.
Q. Have you personally designed a blockchain

miner?

A. No, I have not.

Q. Have you personally designed a generator?

A. When you -- when you say "blockchain miner," you're talking about the mining -- the miner as defined by the miner design, right?

Q. Yeah, yeah, yeah. Like a hand mine, yeah.

A. Is your question related to my time in school or at the present?

Q. Throughout your life.

A. Throughout any time?

Q. Yeah.

A. I have participated in generator design, at least in terms of the complete system configuration at this point, yes.

Q. What's your role in the designing team?

A. Well, my role, generally, at the company, beyond being the head of the company and all that goes with that, I do the principal product scoping. So I have a team now -- when I started, I subbed out some help from an engineering firm.

But as of right now, I do have a team in-house, so my role is scoping out products and product market fit and product design.

Q. I see.

So you didn't start from scratch, right?

You took an existing generator and modified it; is that correct?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: Why would you say -- like, what do you mean by "existing generator"? Just like adapting an existing generator?

BY MR. ZHU:

Q. Yeah. So let me rephrase.

When you said you participated in designing a generator before, do you mean you participated in designing from scratch a completely new generator?

A. Not from scratch. Would be modifications.

Q. I see.

A. Different configurations.

Q. What kind of modification? Can you be a little bit more specific?

A. Well, at least for the application of blockchain mining, different voltage configurations, basically taking -- scoping out different vendors, if that's classified as part of the design process, and applying -- applying those changes to the generators that we --

Q. I see.

So, for example, if the generator is

generating 480 volts, you know, you may have an adapter to transmit it down to a 480-volt.

Is that, you know, the things you did?

A. Yeah. Yeah, volt -- yes, voltage reconfiguration as well as switchgear, so the electrical side. It's also getting custom-made alternators, although that design was also subbed out.

Q. I see.

So after college, did you pursue any advanced degrees, like a master degree or...

A. No, I did not.

Q. So what did you do after college?

A. Took me a little bit to get my first job. But I received my first professional role at -- like, full time at Husky Energy in Lloydminster.

Q. I see.

And when did you start at Husky Energy?

A. I started October 17th, 2011.

Q. And what was your role at Husky Energy?

A. My primary role was -- my title was production engineer. So that related to fixing and optimizing oil wells.

Q. And how long were you there at Husky Energy?

A. I was there until approximately 2016.
Q. I see.
So a span of about five or six years at Husky?
A. It was -- I believe it just under five years, because I didn't receive the five-year prize.
Q. I see.
Why did you decide to leave Husky Energy?
A. Husky -- I was doing a lot of extracurricular, basically tool design, which was out of scope for the company. Being an E&P, they don't -- they basically don't do that work. They buy it from others.
So I invented a couple tools and improvements on safe pumping systems while at Husky. And I quit because they would not let me commercialize it with the company, and they would not let me commercialize it on my own. So that's specifically why I quit.
Q. I see.
A. At which time I started a consulting company and joined -- or looked for partners on helping me develop that tech.
Q. I see.
So did you obtain a patent on the design

you developed at Husky?

A. Yeah. So I did certain patents for Husky while employed there. And then later on, I did more patents for the new firm I started, Activate Artificial Lift.

Q. I see.

So Artificial Lift is a consulting company you were talking about, right?

A. Activate Artificial Lift is a corporation wholly owned by me, which, prior to starting Upstream Data, my -- my objective was to basically design tools for oil services businesses and consult to them.

Q. I see.

How many people do you have at Activate Artificial Lift?

A. It's just me. It's pretty passive at the moment. There hasn't been -- outside of active licenses, there's -- there's no actual -- very little actual business operations.

Q. I see.

So it's dormant right now.

But, you know, did you have any business licenses before it became dormant?

A. I don't know if "dormant" is the right word

because it's -- it's still a licensed business.

Q. Okay.

A. Still paying taxes and generating income.

Q. Okay.

A. It's all passive through patent licenses.

Q. I see. Got it.

So in other words, you don't make products, right?

The business, Activate Artificial Lift, is to license the technology out to other people; is that correct?

A. Yeah. I mean, we didn't make products yet at the company. I built prototypes for the products that eventually got licensed.

Q. I see.

And the prototype you're referring to is the pump design, right?

A. Specifically with Activate, yes. Just really basic 3D-print-style prototypes as part of the product pitch, if you will.

Q. I see.

And have you actually licensed it out to customers? I mean, the pump design patent.

A. Yeah. The -- any patents I did at Husky, I don't know if they ever licensed them out.

With Activate -- or they wouldn't when I was there, anyway.

With Activate Artificial Lift, we have -- I basically have an exclusive license to one sole company, who then basically uses it exclusively.

Q. I see.

And when did you start Upstream Data?

A. We incorporated January 1st, 2017.

Q. I see.

So one year after you left Husky Energy?

A. Yeah. It was approximately that time when it -- about, approximately, a year. I can't remember specifically the date I quit Husky, but it was somewhere around a year.

Q. I see.

And while operating Upstream Data, you were still operating Activate Artificial Lift in the background; is that correct?

A. Yeah. The company still functions.

Q. I see.

And let's see.

So my record shows the filing date of the '372 patent was actually later 2017. Right?

So after you formed Upstream Data; is that correct?

A. That is correct.
Q. I see.
But in terms of the invention work of the '372 patent, was it finished, you know, before you incorporated Upstream Data, or was it after?
A. It wasn't -- can you explain what you mean by "invention work"? Might be easier to answer.
Q. Like, you know, when did the idea occur? When did you put it down in writing? Did that occur prior to your start of Upstream Data?
A. Yeah. The conception of the invention would have started before I incorporated. The final -- call it -- you know, obviously there was a big research period, so that was from conception through to the final application.
But I don't know when I specifically had all of the ducks in the row for the patent application, but it would have been very close to the incorporation date, probably just after.
Q. I see. Got it.
So -- but the conception was earlier than that.
Do you know, like, a general time frame on the conception date? Is that one year before the filing, or is that half a year before the filing?

A. It was sometime after the summer of that 2016 year. Probably around August because that's when I first heard about Bitcoin.

Q. I see.

And that was after you quit your job at Husky Energy, right?

A. Yes, sir.

Q. I see.

Do you remember when -- you know, when did that -- when did that idea occur to you? Did you talk to someone? Did you watch a video? Did you read a book? How did that occur to you?

A. What idea, specifically? Like, the idea of exploring Bitcoin or the idea to conceive the patent?

Q. The idea to conceive the patent.

A. The idea was predicated on my background in oil and gas and dealing with, effectively, like, what I call in my business liability gas, but stranded continuous gas that has no -- has no demand.

So I believe I was first interested in Bitcoin -- you know, heard about it, found out about mining. And once I dug into mining and its energy intensity, at some point around then, conceived of the preface, anyway, to the patent application.

Q. I see.

So how -- do you remember how you became aware of the stranded gas issue in the oil and gas industry?

A. Primarily -- primarily through my work at Husky oil. Lloydminster, where I was posted and responsible for production, was one of the worst offenders for venting, for natural gas venting.

Q. I see.

A. So it was at that time the problem was understood.

Q. I see.

So was Husky Energy internally also looking for ways to utilize the stranded gas?

A. I would say every oil company is interested in that.

Q. I see.

Do you remember, did they ever, you know, made any, you know, strides forward in terms of utilizing stranded gas back in 2016?

A. For me -- there was a gas conservation team at Husky. So that would probably have been more within their scope.

My scope, as -- I was on the gas team as the -- the oil team. My scope was focused on the optimization of the oil well, such as downhole

pumping systems --

Q. Yep.

(Reporter requested clarification.)

THE WITNESS: Downhole pumping systems, artificial lift.

The kind of things I would observe is, with my field operators, we have to shut in wells from time to time if it was excessively venting, for example.

BY MR. ZHU:

Q. I see.

So do you know what kind of solutions the gas conservation team was proposing at that time?

A. Well, I know corporate wide there was probably some initiatives on tying in the grid, so selling power to the grid. I know that was a topic that would come up from time to time. Usually pipelines.

Q. I see.

A. Or combustion.

Q. By "combustion," do you mean --

A. Sorry. Not -- combustion wouldn't be conserving the gas, but distributing the gas.

Q. Were you aware of any other solutions, other than, you know, generating energy for the grid?

A. Well, as -- in terms of what Husky oil -- and I would even say today what most oil companies are mainly interested in -- is effectively disposing a gas because we're speaking specifically about continuous associated gas streams.

They don't really care about the value; they just want to dispose of it. So there's a lot of really odd, creative ideas that you hear about from time to time. For example, boiling water. Boiling produced water, for example.

Q. Can you explain that a little bit?

A. Well, nobody -- I would say, generally, then and now, oil companies don't care about associated gas in terms of monetizing it so much as they care about just getting rid of it as a problem.

So boiling it would be -- an example would be either designing a purpose-built tank to allow the water that's also produced to allow the oil to boil off using that excess gas or modifying existing facilities.

I do recall, for example, someone on the conservation team proposing something like that.

Q. I see.

Were you aware of, you know, ideas, you know, regarding utilizing the vent gas to generate

electricity, other than, you know, selling it to the grid? Any other ideas regarding how you may utilize that electricity?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Was I aware of using electricity for anything other than the grid?

BY MR. ZHU:

Q. Yep.

A. The only -- the only example I can think of is destroying the energy in a load bank.

Q. I see.

A. Which is -- which effectively is a form of combustion. It's not conservation.

Q. I see.

But can you tell me why people do that instead of selling it to the grid?

A. Well, frankly, I would always -- I would say it's a bad idea, generally. There's a lot of maintenance involved with running an engine.

So I believe Husky might have had an operation where it is proposed to do so because, primarily, the regulatory cost of whether it's having to shut the well in or other penalties was so high that doing something ridiculous like running an

engine into a load bank, which can be electric or hydraulic, was feasible for them, or at least potentially feasible.

Q. I see.

And were you aware of, you know, ideas regarding utilizing the engine to, for example, run the oil pumping facility?

A. Sorry. Can you say that again?

Q. Were there ideas about using the vent gas to generate electricity to power the oil drilling facility?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The -- well, drilling is out of my -- I've never been involved in drilling.

Production -- if you mean production facilities --

BY MR. ZHU:

Q. Yep.

A. -- normally any well site that has no access to external power will attempt to use the gas as a fuel to power the well site.

Q. Oh, interesting.

Was it, like, common practice?

A. I would say -- well, it's normal practice

in the oil and gas industry to use the gas that's available any way possible. Conserve it, otherwise, as in ship it, sell it somehow.

Or, you know, if they have utility power, that's usually desirable because it's reliable, generally lower costs over time. So using the gas is always the oil company's objective, if they can.

Q. I see.

Did Husky Energy utilize the gas that way?

A. To power well sites?

Q. Yeah.

A. Yes.

Q. Oh, and when did that start?

A. Well, the associated gas stream is commonly used by oil companies where necessary. Like, if they don't have an external power to power facilities.

Q. So would you say that practice started before you joined Husky Energy?

A. Before I joined Husky Energy?

Q. Mm-hmm.

A. Yes.

Q. I see.

So how would you do that? You just hook the vent gas to a gas generator?

A. Well, there's -- Husky, in particular,

let's say, in my job, we had almost no generators for upstream oil wells.

What we had were -- we call them hydraulic power packages. So we would bring them to Husky, and in my role, we would connect hydraulic engines, like hydraulic-powered engines -- or sorry, engines powering hydraulics to run the well sites. There was no electricity generated outside of low voltage power for the engine battery.

Q. I see.

So while you were employed at Husky Energy, I guess it's been the company's, you know, practice, right, to utilize vent gas that way? To -- I guess to power the well operation?

A. It is a company's practice, every oil company's practice, to utilize the energy available, if possible.

Q. I see.

Is there any other ways, other than to power the hydraulic engine?

A. Any other ways to --

MR. ZOLOTOREV: Vague and ambiguous. Objection. Vague and ambiguous.

BY MR. ZHU:

Q. Any other way an oil company would use to

vent gas to power -- to power other things, other than the hydraulic pump?

MR. ZOLOTOREV: Objection. Still vague and ambiguous. And calls for speculation.

THE WITNESS: Yeah. Can you just rephrase that? Because the second way you rephrased it was a little different.

BY MR. ZHU:

Q. Yeah, yeah, yeah, let me rephrase that.

Were you aware of any other ways that an oil company would use the vent gas to power their operation?

A. Any other ways other than what? Hydraulics?

Q. Yeah. Other than hydraulics.

A. Generators.

Q. I see.

And was this performed by Husky Energy?

A. Husky Energy would have had generators in their -- in their -- across their basin somewhere, yes.

Q. I see.

And so Husky Energy would use vent gas to produce electricity using generators?

A. They would use any gas available depending

on the site.

Q. I see.

A. Just depending on the site requirements.

Q. Right.

And what do they use the generated electricity for?

A. Traditionally, oil company will use the generator to power the well site --

Q. And that includes --

A. -- for the facility.

Q. I see.

And what kind of equipment would need power at the well site?

A. Typically pumps, depending on the site. If it's a small upstream oil well, it might just need pumps. If it's a bigger facility, transfer pumps, maybe could be heat tracing. General industrial equipment. Control valves, et cetera.

Q. Would that include lighting?

A. Yes.

Q. Would that include computers?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: Yeah. Specifically what kind?

BY MR. ZHU:

Q. For example --

A. Any kind?

Q. Yeah. Any kind.

A. There's some kind of computer on most industrial equipment, so, yes.

Q. I see.

And have you personally observed this practice at Husky?

A. The practice of powering computers off a generator?

Q. Yeah.

A. I observed powering industrial equipment off generators, and some of that equipment would have some kind of control computer on it.

Q. I see.

And would you say that it's not just Husky Energy, that it's most oil companies would do this?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for speculation.

THE WITNESS: Generally, as an engineer or technologist, I'm aware that oil companies will power well sites with equipment.

BY MR. ZHU:

Q. I see.

Is there any special requirement for the generator, or is it just, you know, regular off-the-shelf gas generators?

A. Special requirement for what specifically?

Q. So for the generators generating electricity off of stranded gas, right, at oil sites, is there any special requirement for those generators, or are those pretty, you know, well available commercially?

A. You're saying a power well?

MR. ZOLOTOREV: Vague and ambiguous.

I'll just remind the witness to pause so that I may lodge my objection so we're not speaking over each other.

THE WITNESS: Noted.

Can you rephrase the question?

BY MR. ZHU:

Q. Yeah. For sure.

So earlier you mentioned, for example, Husky Energy would use generators to generate electricity to power the oil operation, right?

Are those generators specially designed for stranded gas, or are those generators just off-the-shelf generators you can buy?

A. There is some design considerations that go

into any application of the generator.

Q. Can you be more specific?

A. You can't use a diesel generator off of natural gas, so you have to have the right fuel systems. The engine must have some tolerance to the gas quality, depending on specifics.

Oil fields in USA is generally 480 volts, so usually that's the spec -- the kind of spec of the generator that's applied.

Q. Okay. Let's talk a little bit about Crusoe Energy.

Have you ever heard of Crusoe Energy before?

A. Yes.

Q. When did you first hear about Crusoe?

A. I believe the first time I heard about Crusoe was in 2019. I think it might have been because they put out a press release.

Q. I see.

What do you know about Crusoe Energy?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for a narrative.

THE WITNESS: What -- what exactly -- other than they are infringing on my patent, what -- what specifically?

BY MR. ZHU:

Q. Do you know what they do? Do you know what their market is?

MR. ZOLOTOREV: Same objections.

THE WITNESS: I wouldn't say I know a lot of their -- the specifics on their business. I've -- I've never had -- aside of -- I met both Chase and Cully at a conference before, but we've never had any business discussion. So I'm mostly limited to what I've seen in publications.

BY MR. ZHU:

Q. I see.

Do you think Crusoe is a competitor for Upstream?

A. Yes.

Q. Have you analyzed Crusoe's products?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

And I'll also caution the witness to answer in a way that does not reveal any attorney-client privilege discussions.

THE WITNESS: I pretty much have only had the opportunity to see Crusoe's public -- public info. I've never been to a Crusoe well site, or operation, I mean.

BY MR. ZHU:

Q. I see.

So just generally, do you think Crusoe's products are different from Upstream's products?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Different on what level, like, and how?

BY MR. ZHU:

Q. The technology, the design. Are the products different?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, I haven't -- I haven't had the opportunity to inspect the Crusoe product personally. I have loosely reviewed a couple of their patent applications, which they enforced against my client. So that's probably the limit to my -- outside of what I might try to infer.

BY MR. ZHU:

Q. I see.

So what -- do you remember the name of the client?

A. Crusoe sued Alkane Energy for patent infringement -- I think it was the end of 2022.

Q. 2022. I see. Got it.

Are you aware that Upstream also sued Crusoe?

A. Yes.

Q. Did you make that decision?

A. Yes.

Q. I see.

Why did you choose to sue Crusoe?

MR. ZOLOTOREV: I'll, again, caution the witness to answer in a way that does not reveal attorney-client privileged communications/discussions.

THE WITNESS: My understanding, from what I reviewed, is they're infringing on my IP.

BY MR. ZHU:

Q. Have you ever reviewed other companies for whether they infringe on your IP, other than Crusoe?

MR. ZOLOTOREV: And, again, I'll caution the witness to answer in a way that does not reveal attorney-client privileged communications.

THE WITNESS: I normally just deal with my customers who use our products, but I haven't reviewed, or, say, studied other companies as of yet.

BY MR. ZHU:

Q. I see. Got it.

Yeah. Let's talk about your invention in the '372 patent a little bit.

How would you describe, you know, the invention, in one sentence, if you can?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: I believe the patent is titled "A Portable Blockchain Mine at an Oil and Gas Facility."

BY MR. ZHU:

Q. I see.

What problem were you trying to solve for, you know, when you came up with this invention?

A. I was trying to solve problems in the oil and gas industry as well as the Bitcoin or blockchain mining industry.

Q. I see.

So before the filing day, which was February 2017, did you tell anyone about your invention?

MR. ZOLOTOREV: I'll caution the witness to answer in a way that does not reveal attorney-client privileged communications, including those made with regard to the preparation and filing of any patent applications.

THE WITNESS: So the question was: Did

I -- did I tell anyone about the patent application? Is that what -- can you --

BY MR. ZHU:

Q. About -- about your invention.

A. About the general invention.

The only person is my business partner that was involved in the application, but more so as a silent partner.

Q. Sorry. What -- what's his name?

A. My business -- my co-founder, I guess you would -- you could call him, or my primary early investor, his name is Evan Stephens.

Q. Did he contribute to this invention?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Contribute in what way?

BY MR. ZHU:

Q. For example, give you ideas on how to better, you know, utilize this -- this invention.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Evan -- I don't know about better utilize. He helped me with drafting some drawings specifically related to submitting some things, you know, semiprofessional, to the -- to the

board, to the patent office.
BY MR. ZHU:
Q. Oh, I see. Got it.
So in other words, Evan helped drafting the initial application; is that correct?
A. Well, it was -- it was actually -- Evan owns an engineering firm, and I did hire them to do the drawings.
Q. I see.
Is there any reason you didn't find an attorney to prepare the application for you?
MR. ZOLOTOREV: Objection. Assumes facts not in evidence. Vague and ambiguous.
THE WITNESS: Yeah. The premise of that question is false.
BY MR. ZHU:
Q. I see.
A. I do have a patent attorney.
Q. I see.
So do you remember, you know -- at what time did you tell Evan about your invention?
A. It would have been -- it would have been around the very end of 2016.
Q. I see.
Is there any evidence to show an invention

date prior to February 2017?

A. Would that mean, like, a publication of some kind?

Q. Yeah. Like, any -- anything? Like paper, video, or --

A. But you mean as, like, a public record, right?

Q. No, no. Just anything.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

(Reporter requested clarification.)

MR. ZOLOTOREV: Vague and ambiguous.

THE WITNESS: Are you asking about personal notes?

BY MR. ZHU:

Q. Sure.

That also counts.

A. So can you rephrase the question?

Q. Is there any evidence that may establish an invention date that is prior to February 7, 2017?

A. So you're asking about private evidence that's not on the public record?

Q. Yeah. Sure.

A. Yes. I have working documents.

Q. I see.

During the development of your invention, did you have any technical challenges?

A. Actually, yes.

MR. ZOLOTOREV: Objection. Vague.

BY MR. ZHU:

Q. What kind of technical problems did you have?

A. And the question was development of the invention or the prototype?

Q. Mm-hmm.

A. What kind of technical challenges did I face?

Generally speaking, how to provide proper power quality configuration, Internet consistency, or network consistency to the blockchain miners, trying to figure out how to effectively design a system that could withstand extremely harsh conditions, including that related to the power quality.

How to basically procure and configure and optimize the power generation side that applied to the energy source, and that could provide the required inputs into the -- into the mine -- miner devices.

Q. I see.

When -- when did you make your first

prototype?

A. I started -- well, I made it, in terms of finished it, in around September 2017. And I think it was a few weeks later it was in the field.

Q. I see.

How long did it take you to make it?

A. Well, it would have taken me -- I can't remember when I specifically started on researching and trying to design it, but it was sometime before incorporation, and so it would have been about a year.

Q. I see.

Did you sell a prototype?

A. Say that again, please.

Q. Did you sell the prototype to someone?

A. Yeah. The prototype, which I believe I put in my declaration, was deployed at the end of that -- that year in October, and I sold it to a gentleman -- it was at the very end of the year.

Q. I see.

Sorry. What's the name of this gentleman?

A. His name is -- assuming this is relevant, his name is James Hilliard.

(Reporter requested clarification.)

THE WITNESS: James Hilliard,

H-I-L-L-I-A-R-D.

BY MR. ZHU:

Q. I see.

Did you engage in any marketing efforts? How did you -- how did you sell it to him?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I didn't -- what I did with James -- or I met James -- James was a software engineer in the Bitcoin space. I reached out to him, at some point, I think for assistance. That's how we -- that's how we made contact.

BY MR. ZHU:

Q. I see.

So did James also help you realize your invention?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Can you be a little specific on that?

BY MR. ZHU:

Q. Yeah. Prior, you said, you reached out to James for help, right?

In what way did he help you?

A. The -- given that I personally had very --

back then, and arguably today, a very limited knowledge on managing, you know, IT systems loosely, James -- I requested James's help to basically -- I think the first thing was to, like, make a script for disconfiguring the miners, which I was doing manually. So it would take me hours to do when they could be automated.

Q. I see.

What kind of miners was -- did -- did you use in this prototype?

A. Our first prototype was Bitmain Antminer S9s.

Q. I see.

Do you remember how much those were?

A. How much money?

Q. Yeah.

A. I don't remember specifically excessive -- excuse me -- in excess -- I think I ordered 32 for that prototype. And it might have been between -- somewhere between 1- and 3,000 each. I honestly can't remember.

Q. I see.

Do you remember what kind of generator you used for this prototype?

A. Yes. I had a rebuilt V8 engine that we

configured to the proper settings, configuration, and application for powering these devices.

Q. And where did you buy it from?

A. I bought that from a shop in Lloydminster called Tri-Power.

Q. Let's see. So what kind of configurations did you do on the generator you got from Tri-Power?

A. We did -- we reconfigured the alternator to a lower voltage setting, switched out to a different disconnect, and added a bunch of fuel gas system stuff upstream for redundancy. Modified the heat so that the heat output -- so it could be utilized in the -- in the overall system.

Q. How did you modify the heat output?

A. The heat output in terms of the -- basically where the heat is disposed of, we -- for that prototype, we wanted to reutilize the heat when needed. So we have -- we put in a -- what is called sort of like a plenum to be able to make use of the heat it required.

Q. Sorry. Can you explain that a little bit. What is a "plenum"?

A. So effectively, the system -- the generator being one aspect of the system, Antminer S9s at the time were not -- at least as far as I know -- I

couldn't find any applications with, say, potential power quality issues like we would have, but also in harsh environments.

So when it comes to the heat output of the generator, we modified the integration of the generator so that we could utilize the heat that, of course, in engine outputs, instead of just blowing it away, we had the -- the plenum served to be able to recapture it and just make the actual prototype operate because we -- running the blockchain miners in these conditions was unknown, so we wanted to utilize the heat, if needed.

Q. I see.

So was it deployed in a cold-air environment? That's why you needed to reutilize the heat?

A. Yes. Cold -- that's the main reason, generally. We were also worried about condensation risks when it's -- you know, not so much cold, but humid in the morning conditions kind of thing.

Q. I see.

And earlier you said you added fuel gas systems upstream, right?

What kind of fuel gas systems did you add?

A. Pretty much, with that prototype, we

allowed for backup fuel, just knowing that we needed to rule out all uncertainty on the prototype. So propane and backup as well as, in that same fuel gas train, we put a backup heating system, which was pro -- which would be propane fuel. It's called, I think, a gravity furnace.

So we're trying to -- trying to basically develop a system that could -- could operate in these conditions.

Q. Was that also to avoid condensation issues?

A. That would be part of it.

Q. I see.

And earlier you mentioned, you know, you had an alternator to alternate it to a lower voltage, right?

But what exactly was the voltage from the generator?

(Reporter requested clarification.)

BY MR. ZHU:

Q. Lower voltage.

What exactly was the voltage output from the original generator?

A. From that prototype generator, we went to a very nonstandard voltage of -- it was 230 line-to-line voltage. 133 line to neutral.

Especially nonstandard even compared to today.

Q. I see.

And did you use an alternator to, you know, standardize it to, I don't know, 240 volts or something like that?

A. Well, I remember, at the time when I was developing the invention, there was basically next to no -- nothing I could find publicly to advise me on on the voltage stuff, so we -- we went to the -- that lower setting of 230/133.

We don't do that today, but we did that back then because the miners were recommended to be above 208 and below 250. And that seemed to be a good spot because we could use that neutral leg for other loads -- other loads, like lighting in the building.

Q. I see.

And you also mentioned you switched out to a different disconnect.

Can you elaborate on that?

A. Yeah. Tri-Power pretty much, for generators, exclusively sold 480-volt systems. That's all that -- well, for the smaller engines, that's pretty much the only voltage people buy in Canada and America. It's industry standard.

So we had to modify, basically, because of that lower voltage that we were reconfiguring to. We needed it kind of a -- it would be -- of course, higher capacity that force in the past a higher amp drum, so we had to upsize the disconnect cabling.

And they were also, as standard, using Murphy-style or, I guess, analog, you could say, engine controller. So, like, switches, like, manual switches and physical, not -- not -- no computer.

So we also integrated -- I paid them to integrate an engine controller so that I would be able to use the system more reliably.

Q. I see.

So aside from that, did you do any additional modification to the generator?

A. Probably, aside from the -- working with the supplier to make sure my design on the heat recirc would work while keeping the engine cool, I know that I worked with them on the structural level of the engine base so that I could contain it all properly in my -- in my prototype.

Q. Is that all of the modifications you did to that Tri-Power generator?

A. There may be other -- that's all I can think of at the moment. That's been a number of

years, though.

Q. Yep.

So how is this first prototype different from the current Hash Generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yeah, there's -- what I build today is different -- you can almost say that in different ways on parts, even some of the configurations we do. So I don't know if you want to get more definite on what specifically?

BY MR. ZHU:

Q. For example, did you use a different miner in the current Hash Generator?

A. The miner -- we do use different miners today than we -- we actually -- well, we still use Antminer S9s. There are customers we have and work with that use those.

So we do -- the product is -- we try to make it compatible for as many of these miners, you know, on the market, depending what the customer might want.

Q. Okay. Did you use a different generator?

A. Yes.

Q. What kind of generators are you using now?

A. We -- we have a product called a Hash Generator. That product -- where we're packaging the generator, we use -- we've tried -- tried varying base engine models -- excuse me -- but presently, say the most recent deployments, we're using an engine supplied by PSI.

Q. Did you make any modifications to the engine supplied by PSI?

A. Yeah, we do. We package and put our own -- our own components into the complete package.

Q. What other components do you mean?

A. So on the -- we buy, for example -- we actually build the generators now.

For example, as a Tri-Power for that prototype, we don't use -- that's a vendor we're not currently working with.

So we package -- my own staff, we purchase the engine block with the cooling kit, and we build the generators.

Q. So when you say you build the generators, do you mean you make modifications on the generator you bought? Or do you mean --

A. We don't -- well, we don't --

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yeah. I mean, what we do presently is we buy engines and we build generators.

BY MR. ZHU:

Q. I see. Got it.

Let's see.

Are you aware of the duty of disclosure as an inventor?

A. Sorry. Can you repeat that? I lost the last bit.

Q. The duty of disclosure as the inventor.

MR. ZOLOTOREV: I'll just caution the witness to answer in a way that does not reveal attorney-client privileged communications.

THE WITNESS: I'm aware of an inventor's duty to disclose any known -- anything relevant to their invention, yes.

BY MR. ZHU:

Q. Did you disclose any prior references to the patent office?

A. Yes, we did.

Q. Do you remember searching for prior references for that purpose?

MR. ZOLOTOREV: Again, I'll caution the witness to answer in a way that does not reveal attorney-client privileged communications.

THE WITNESS: I did research while -- after conception and during development of our -- of our IP, yes.

BY MR. ZHU:

Q. I see.

Do you have a protocol to collect those prior references that deal with that?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

And, again, to the extent the question calls for attorney-client privileged communications, I would advise the witness to answer in a way that does not reveal any such communications.

THE WITNESS: Protocol to collect the -- say that again, please.

BY MR. ZHU:

Q. Do you have any protocol to collect the prior references you looked at so that you can submit to the patent office?

MR. ZOLOTOREV: Same caution, please.

THE WITNESS: I can't say I have a documented protocol. But everything -- everything relevant that is my understanding could be relevant, we submitted.

BY MR. ZHU:

Q. Just off of the top of your head, do you remember any relevant prior references?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

And, again, I'll caution the witness to answer in a way that does not reveal attorney-client privileged communications.

THE WITNESS: Well, I would probably have to refer to the examination, or what you would -- whatever that -- the prosecution history, I guess.

BY MR. ZHU:

Q. I see.

A. I believe we submitted quite a lot.

Q. Okay.

MR. ZHU: I think it's been, you know, about an hour. Should I take a break before I go into the prosecution history?

MR. ZOLOTOREV: Sounds good to me.

THE WITNESS: Yeah. Sure. Quick break.

MR. ZOLOTOREV: Ten minutes?

MR. ZHU: Ten minutes. Yeah. Sounds good.

MR. ZOLOTOREV: Thanks.

(Recess: 12:14 p.m. to 12:25 p.m.)

BY MR. ZHU:

Q. Okay. Mr. Barbour, during the break, did you talk to your counsel?

A. No, sir.

Q. Okay. Mr. Barbour, have you seen this document before? It's a 700-page prosecution history of the '372 patent.

A. Just allow me a minute. I'm waiting for it to download.

Q. Okay. Sounds good.

MR. ZHU: I guess, for the record and for the court reporter, I'm introducing Exhibit No. 1002. And this is the prosecution history of the '372 patent.

(Whereupon Exhibit 1002 was referenced for identification.)

THE WITNESS: Okay. I have the document open on my computer.

BY MR. ZHU:

Q. Yeah.

Do you remember seeing this document before?

A. It looks like a copy of the prosecution history. I can't say for sure if I've reviewed it in detail, like, in terms of in this form.

Q. Okay. Do you have any reason to doubt it is a history of the '372 patent?

A. I have no reason to doubt it.

Q. Okay. So have you seen a rejection from the patent office that's been shown on page 329 of this document?

So let me scroll down a little bit to the actual rejection. Yeah.

So here, the examiner issued a 112 rejection and then a 103 rejection. And the 103 rejection was over two pieces of prior art. One is Belady; one is Gleichauf.

Do you remember seeing this rejection?

A. I do remember there was a rejection during examination, which my prosecution counsel brought to my attention, and I provided technical details.

Q. I see.

Do you remember reviewing these two pieces of prior art, Belady and Gleichauf?

A. I'd have to see the prior arts. They do sound familiar. So I presume I reviewed it with my lawyer.

Q. Yeah, let me introduce Exhibit 1017.

Let me drag it into the chat box. There we go.

(Whereupon Exhibit 1017 was referenced for identification.)

BY MR. ZHU:

Q. So this is the Belady reference that's been used in this rejection.

Let me share my screen.

MR. ZHU: For the record, I'm introducing Exhibit No. 1017, a patent application titled "U.S. Application No. 2014/0096837 titled Belady."

Mr. Barbour, have you seen this document before?

MR. ZOLOTOREV: I'll caution the witness to answer in a way that does not reveal any attorney-client privileged communications. So I would advise the witness to just answer with a "yes" or "no" at this point.

THE WITNESS: I would say yes. Although, I feel like this would have been a long time ago.

BY MR. ZHU:

Q. Sorry. Do you remember what this application is about, in general?

MR. ZOLOTOREV: Let me, again, caution the witness that to the extent the witness's understanding of this document derives from attorney-client privileged communications, that the

witness should not reveal those communications or the understanding that's derived from those communications.

But to the extent that the witness has some independent recollection or independent understanding, independent from attorney-client privileged communications, then the witness may provide that.

THE WITNESS: This -- this patent application, I can't say I have expertise in what this inventor is attempting to do. I believe I would have reviewed it during the prosecution or the examination period.

BY MR. ZHU:

Q. All right. Do you know what the inventor is trying to do here with this application?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

Again, to the extent the witness's understanding or recollection of some understanding is derived from attorney-client privileged communications, the witness should not reveal those communications or the understanding that it's derived therefrom.

But if the witness has some independent

recollection or understanding, then the witness may testify about that.

THE WITNESS: This document -- I'd probably be speculating on the full scope of what -- what it entails. My review is probably limited to how it might apply to our prosecution or patent filing.

BY MR. ZHU:

Q. Okay. So the title of this document is "Gas Supply Shock Absorber for Datacenter Power Generation." Right?

A. That appears to be a title, yes.

Q. And in Figure 1, shown on the screen here, it looks -- there's a datacenter, right, in this system?

MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation.

And, again, to the extent that the witness's understanding, if the witness has any, of this document is derived from attorney-client privileged communications during the prosecution, then the witness should not reveal any such understanding that's derived from communications.

THE WITNESS: What you're presenting on screen cites a datacenter in the diagram. What specifically that means, I couldn't tell you.

BY MR. ZHU:

Q. Have you independently reviewed this document?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

BY MR. ZHU:

Q. Or in the alternative, did you only hear about that through your attorney?

MR. ZOLOTOREV: And, again, I'll just caution the witness to answer in a way that does not reveal the substance of any communications.

THE WITNESS: I do believe I have a copy of this document that came through, effectively, the examination of our patent. I can't say I've reviewed it thoroughly. I have a loose understanding, perhaps, of some aspects of it.

BY MR. ZHU:

Q. What's your understanding?

MR. ZOLOTOREV: Again, strongly caution the witness that to the extent that the witness's understanding, if any, comes from or was derived from attorney-client privileged communications, then the witness should not reveal the substance of that derived understanding or the communications.

THE WITNESS: I would have to say I don't

have a clear understanding of the precise specification of what this is doing. I'd probably be speculating.

BY MR. ZHU:

Q. Do you have any idea what this application is about?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Lacks foundation. Calls for speculation.

And, again, I'll caution the witness that to the extent the witness's understanding, if any, is derived from attorney-client privileged communications, the witness should not reveal that derived understanding or the communications themselves.

THE WITNESS: At this point, the best I could say is what it speaks in the title and the summary is what its intended invention, you know, how -- how it's applied.

BY MR. ZHU:

Q. Had you seen this document before the filing date?

A. Are you asking before my patent filing date?

Q. That's right.

A. I don't know. I do not believe so. I

can't tell you for sure.

Q. So do you understand that Belady discloses a gas generator connected to a datacenter?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Lacks foundation. Calls for speculation. Calls for expert testimony on a legal conclusion.

Furthermore, to the extent that the witness's understanding of this document, if any, is derived from attorney-client privileged communications, the witness should not provide that understanding and not reveal the substance of attorney-client privileged communications.

THE WITNESS: I -- I would -- I do not have a solid understanding of this document generally.

There is -- even the term "datacenter" might mean a host of different things.

BY MR. ZHU:

Q. Let's see.

So did you participate in preparing the response to a rejection during prosecution?

MR. ZOLOTOREV: And, again, I'll caution the witness to answer in a way that does not reveal attorney-client privileged communications. And I would advise the witness -- I would advise the witness to answer this question with a "yes" or a

"no."

MR. ZHU: Okay. Speaking objections are not allowed per Rule 1 of Federal Rules of Civil Procedure.

MR. ZOLOTOREV: I --

MR. ZHU: And those all are in the trial practice guide.

MR. ZOLOTOREV: I am asserting privilege. That is allowed. And --

MR. ZHU: You're instructing the witness.

MR. ZOLOTOREV: I have to state the basis for that privilege assertion in order to comply with the rules, which I am doing.

You are now venturing into potentially attorney-client privileged communications, and I will assert privilege as I see fit.

BY MR. ZHU:

Q. You may answer.

A. Ask to rephrase the question so I'm not forgetting what it was.

Q. Sure.

Did you participate in preparing a response to the final -- to the rejection we just saw?

MR. ZOLOTOREV: Same caution to the witness regarding privilege.

THE WITNESS: Yes, I participated in the examination.
BY MR. ZHU:
Q. So how is Belady's system different from -- than your understanding of the '372 patent?
MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation. Calls for expert testimony and a legal conclusion.
Moreover, once again, to the extent the witness's understanding, if any, of this document is derived from attorney-client privileged communications during prosecution or during this proceeding or otherwise, then the witness should not provide testimony that would reveal attorney-client privileged communications.
THE WITNESS: I don't have a detailed understanding of full specification or scope of this document. I'm limited to my own knowledge and expertise with their products and our IP.
BY MR. ZHU:
Q. Have you heard about the CryptoKube datacenter?
(Reporter requested clarification.)
MR. ZHU: CryptoKube, K-U-B-E.
THE WITNESS: At present, I've heard about

it, yes.
BY MR. ZHU:
Q. What do you know about a CryptoKube?
MR. ZOLOTOREV: Again, I'll caution the witness that to the extent the witness's understanding of CryptoKube derives from attorney-client privileged communications, the witness should not provide testimony that would reveal the substance of those communications.
However, to the extent the witness -- the witness has an independent understanding, the witness may testify about that.
THE WITNESS: I understand the CryptoKube, some kind of portable enclosure system for -- to house Bitcoin miners.
BY MR. ZHU:
Q. Do you understand the CryptoKube datacenter is also a datacenter?
MR. ZOLOTOREV: Objection. Vague and ambiguous.
And, again, the same caution to the witness with regard to understanding that's derived from attorney-client privileged communications.
THE WITNESS: What exactly is "datacenter"?
(Reporter requested clarification.)

THE WITNESS: Jay, please, what do you mean by "datacenter"?
BY MR. ZHU:
Q. Same question back to you.
What's your understanding of the term "datacenter"?
MR. ZOLOTOREV: Objection. Lacks foundation. Calls for expert testimony.
THE WITNESS: Generally, I would say "datacenter" is a term loosely applied to a variety of systems, I guess. I'm not a -- I have no prior history in the datacenter industry. So my knowledge is limited.
BY MR. ZHU:
Q. Does Upstream Data make datacenters?
A. What is the definition of a "datacenter"?
Q. What -- what's your understanding of "datacenter"?
MR. ZOLOTOREV: Objection. Lacks foundation. And it calls for expert testimony.
THE WITNESS: Well, a datacenter -- without having any real experience in the industry of datacenters, usually it's some kind of computer servers that a client -- data storage or data -- data processing requests.

BY MR. ZHU:

Q. So you would say a datacenter is a collection of computing devices?

MR. ZOLOTOREV: Objection. Lacks foundation. It's vague and ambiguous. And calls for expert testimony.

THE WITNESS: Loosely, I don't really know how to classify a datacenter. I mean, a collection of computers, it's very vague. I have a collection of computers in my house, so...

BY MR. ZHU:

Q. Okay. Let me show you the definition of datacenter here in this document we're looking at.

So here in paragraph 003, the second sentence says: "Such a collection of computing devices, as well as the associated hardware necessary to support such computing devices and the physical structure that houses the computing devices and associated hardware, is traditionally referred to as a 'datacenter.'"

Does that shed some clarity on what a datacenter is?

MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation. Calls for expert testimony.

And moreover, I'll caution the witness again.

But to the extent the witness's understanding of this document, if any, derives from attorney-client privileged communications, the witness should not testify in a way that reveals those communications.

THE WITNESS: I don't proclaim to be an expert on the datacenter industry. And I can't say if this is an accurate definition or a full definition of what a datacenter is.

BY MR. ZHU:

Q. So do you understand that the CryptoKube datacenter is a datacenter?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Lacks foundation. Calls for speculation.

And, again, to the extent the witness's understanding, if any, derives from attorney-client privileged communications, the witness should answer in a way that does not reveal those communications or the derived understanding.

THE WITNESS: I have not had the opportunity to review CryptoKube in detail. And I understand it's a device to enclose Bitcoin miners. I do not have any insight on its application as a

datacenter.

MR. ZHU: Okay. Let me introduce another exhibit. I will just drag it into the chat.

So, Court Reporter, please mark this as Exhibit 1030.

And the title of this document is "Case Study: Alberta producer conserves stranded gas and eliminates flare with Ohmm datacenter."

(Whereupon Exhibit 1030 was marked for identification.)

MR. ZHU: And let me share my screen with you so you can see what I'm looking at.

BY MR. ZHU:

Q. Mr. Barbour, have you seen this document before?

A. I'm still loading it and opening it as well.

So it is, I believe, a blog post on my website.

Q. Have you seen this document before?

A. The copy I downloaded in its, say, current form, no, but it appears to be taken from my website -- from a website blog post.

Q. And do you see the date of publication looks like October 21st, 2019?

A. Yes, I see that.
Q. Did you draft this document?
A. I believe I did, yes.
Q. So can you tell me a little bit, what is Ohmm datacenter?
A. Yep. Ohmm, effectively, was a brand or trademark, like a product brand for products, basically relating -- to be more, like, precise on Ohmm, Ohmm is a play on the word "ohm," which means electrical resistance. So that's -- that's why it's that way.

But that was the brand which we don't feel -- we haven't really, say, used it lately because it's probably just confusing people. But the idea behind the brand was I always talked about Bitcoin mining as being a load, so it's like a resistor.

And one reason, say, from the start of my company back in 2017 to the present, we refer to our products as loadcenters, despite earlier, for example, at this point in time, referring to them as datacenters because of the several differences in functionality compared to what -- loosely, how I think about datacenters.
Q. Have you ever sold the Ohmm datacenter?

A. So specifically are you asking about, say, this picture in the exhibit?

Q. Is there different versions of the Ohmm datacenter?

A. Yes. I mean, this blog post that you're referencing in this exhibit, I think it shows -- let me just look.

This was one of our first commercial products, which I did, at the time, refer to as a datacenter.

Presently we call our products "loadcenters" to avoid confusion.

Q. I see.

So in your mind, do you think the Ohmm datacenter is a datacenter?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The issue of that question is I don't clearly -- we need to set a definition for datacenter, perhaps. I don't think an assortment of computers -- there are -- you can get a lot of assortment of computers without anyone considering it a datacenter, so...

BY MR. ZHU:

Q. So is it your opinion that the Ohmm

datacenter is not a datacenter?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: I can't really answer that without defining what a datacenter is. I think different people would have a different definition of it.

BY MR. ZHU:

Q. And sitting here today, you don't have an understanding of what a datacenter is?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And, again, calls for expert testimony.

THE WITNESS: I could better answer your question if we defined it.

BY MR. ZHU:

Q. So in your declaration, you said you have over seven years' experience in the field of blockchain mining technology, right?

Based on your experience in this, you know, blockchain mining technology, do you have any understanding of the word "datacenter"?

A. When I started the company, I had zero experience in blockchain mining technology and zero experience in certainly what, at the time, I would have generalized as the datacenter industry.

Since then, I have yet to have any experience in what I would say is loosely called the datacenter industry, such as high-performance computing. Maybe that's a more specific form of datacenter.

I have no experience running GPUs or memory storage devices.

So it's hard to comment on the -- without knowing precisely what we mean by "datacenter." The industry does loosely call Bitcoin mining, they categorize it in datacenters -- some people in the industry do.

But I would -- I don't exactly agree with putting blockchain mining in that category, but it depends on what the definition is.

Q. Have you ever used the term "datacenter" when you were speaking to your customers?

A. Yes. Most prominently, earlier in the business, part of -- for example, maybe, you know, Upstream Data, I did derive the name from the term "datacenter."

Partly because -- well, I knew from a marketing standpoint no one -- no one I was marketing to understood -- I don't know -- the term "blockchain." So it -- from a marketing standpoint,

I've used the term "datacenter" to prevent obstacles in terms of finding or working with customers.

Q. Can you explain a little bit what this Ohmm datacenter is? What's its structure?

A. Yes. I remember this particular application. So the product is a very compact steel enclosure. You can see a little bit here on the front side -- excuse me -- in the foreground there's an air intake on the -- and also an electrical panel. And within it, there is a bunch of Bitcoin mining -- Bitcoin miners racked up with a cooling system.

And it is supplied with a generator that's not in the picture on a -- you can see it in the background there, a flare. And, of course, probably some other components I missed.

Q. And what is the function of the Ohmm datacenter?

A. The function of this particular enclosure, this blockchain mining system is effectively paired with -- there's a natural gas generator upstream of it, on a remote oil well -- I think it was a multi well facility with no external cells or power grid. So the application was using the excess associated gas to effectively practice the invention.

Q. Can the Ohmm datacenter be employed for

other purposes, for example, just, you know, using hydropower to mine Bitcoin?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yes. Are you asking can this particular product on your screen be what I referred to as a minikube, like a four-foot cube, could that -- is that what you're referring to?

BY MR. ZHU:

Q. That's right.

A. It could be applied to that component of the system on the site. That one individual component could be applied to alternative sources of power provided -- provided the power input was matching what this required.

Q. I see.

So how is the Ohmm datacenter different from the CryptoKube datacenter?

MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation.

And, again, I'll caution the witness that to the extent the witness's understanding of CryptoKube, if any, derives from attorney-client privileged communications, the witness should answer in a way that does not reveal that understanding and

those communications.

THE WITNESS: The -- I'm not -- I'm not an expert on the CryptoKube. I don't have a full understanding of all of the components, how it -- how it does all of the different things I'm assuming it does to provide power and cool the blockchain mining servers.

In particular, this Mini Cube on your screen, of course, I think it's quite a bit smaller. This particular product was designed to pair with small generators, particularly one specific size that was commonly -- that is commonly -- or engine size, I should say, that is commonly used.

So we adapted the engine to basically be able to power this and build the system on the site.

BY MR. ZHU:

Q. Is there a difference between an Ohmm Mini and the Ohmm Combo? Just the size of the unit?

A. There are differences, yes. So the Ohmm Combo, the reason the word "combo" is used is it included -- it's not a product we currently market.

Actually what happened here was it was previously called a "Hash Generator," and then we started using the Combo to make it more clear to people, given even the word "Hash" was confusing to

oil field engineers. They often thought we were growing marijuana or something like that.

But the Ohmm Combo is different than the Ohmm Mini in that the Combo, at least what we were marketing at this time, at this period, included a custom generator built within the blockchain mining system.

Whereas, the Ohmm Mini, it was applied to a generator that wasn't combined in the exact same enclosure.

Q. I see.

So is it just another name for Hash Generator?

A. Ohmm Combo, or Combo specifically, just being Ohmm is sort of like the product line brand.

"Combo" was a term we effectively used, for a period, anyway, to -- to make the Hash Generator a little less confusing. But we no longer use the "combo" term.

Q. I see.

So how many different products do you have at Upstream?

A. Products -- well, we have a broad -- say, a broader business today than we did in the past. So it's -- if you want me to give you an overview of

what we do today or just specific to the invention?

Q. No. I'm just curious. I've seen the Hash Generator, I've seen the Ohmm Mini, and I've seen the Mini Combo.

Are these the only three products you sell, or do you sell more products?

A. So just being high level to start, we do -- today we do Bitcoin mining products, primarily for oil field, but also for other applications.

We are working on software related to this, constantly improving that. I've also broadened the business to nonBitcoin-related activities, such as custom enclosures for oil field, as well as just standard generator packages or related engine services.

So broadly, we have a lot of products, product lines, and services now.

As for Bitcoin or blockchain mining specifically, we -- we've had -- we had a number of current products. Some products that were obsoleted, and many, many iterations of each.

Q. I believe you also mentioned a product called Hash Hut, right?

Can you describe that a little bit?

A. Yes. So the primary products we sell to

oil field-based customers or ones using -- applying your products to stranded gas, effectively, you know, practicing the invention, are mainly the Hash Hut and Hash Generator.

This one, you know, still on your screen, the Mini as well, although we're revising that product line, so it's -- it's -- well, it hasn't been sold actively for quite a while.

But -- and then we have a few other niche products that might also get applied in the same application, like a black box, that's also shown on the website.

The main difference is with what we call our loadcenter products, you know, formerly called -- I use the term "datacenter," but the loadcenter products outside of the Hash Generator are products that we build that are designed to pair with generators for oil field applications, to pair with, you know, generators in the fuel source.

The Hash Generator is differentiated because it integrates the generator, the purpose-built generator, with the entire system in a portable system.

Q. So in other words, the difference between the Hash Hut and the Hash Generator is one has a

generator in there; one doesn't?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The Hash Generator has a purpose-built natural gas generator enclosed within the same portable structure as the -- as the blockchain mining section for the mining servers, I should say.

And the Hash Hut is different in that the generator isn't in the same enclosure. It's adjacent to it on -- on the application. Provided it's being combined.

(Reporter requested clarification.)

BY MR. ZHU:

Q. So in other words, the Hash Hut doesn't include a generator; is that correct?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The product we manufacture called a Hash Hut must include a generator when applied to the oil and gas facility.

So as it relates to our invention, it must include a generator. It just might not -- the Hash Hut, the generator may not be enclosed within the exact same portable structure.

BY MR. ZHU:

Q. Can the Hash Hut be used without a generator?

A. It needs power, so I don't know how you can get power without a generator.

Q. Can you just hook it up to an electro grid and let it work?

A. Yes. The Hash Hut can be applied to, say, non-oil field applications that have an external generator somewhere else.

Q. So in other words, the Hash Hut can be just a Bitcoin miner, right, in a Bit container?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, a Bitcoin miner -- unless you're using a different -- a Bitcoin miner, like an Antminer S9, a Hash Hut can be applied to -- it can independently be applied to any source of electricity.

BY MR. ZHU:

Q. Okay. Let me go back to Exhibit 1002 a little bit.

So here, shown on the screen, is page 210. This is the "Amendments to the Claims."

Have you seen this amendment before?

A. Maybe just as best practice, can you attach this?

Q. It is already attached.

A. Oh, you did?

Q. This is in Exhibit 1002, the file history.

A. Oh, this is the file history?

Q. Yeah. Yeah.

A. Can you go back to your screen, or share it again?

Q. Oh, sorry. Here.

A. So, yeah. Please go ahead. What was the question?

Q. Have you seen this Amendments to the Claims before?

A. Yes. It appears to be an amendment throughout the prosecution.

Q. Did you participate in making this amendment?

MR. ZOLOTOREV: I'll just caution the witness to answer in a way that does not reveal attorney-client privileged communications. So if the witness can answer with a "yes" or "no," that would be fine.

THE WITNESS: Yes, I participated.

BY MR. ZHU:

Q. Do you remember the goal of making this amendment? Why did you make this amendment?

MR. ZOLOTOREV: Objection.

As phrased, the question necessarily gets into attorney-client privileged communications given the prosecution, and on that basis, I advise the witness not to answer.

(Witness instructed not to answer the question.)

BY MR. ZHU:

Q. Are you going to answer?

A. I'll be taking my counsel's advice not to answer.

Q. So you are stating on the record you refuse to answer that question?

A. As stated, yes.

Q. Okay.

MR. ZHU: Yeah. Court Reporter, please note the witness refuses to answer this question.

BY MR. ZHU:

Q. So do you understand that in this claim amendment, the word "[a] blockchain mining device" was changed to "blockchain mining devices"?

Do you remember that part?

A. I would say I vaguely remember. I did file -- I had filed, feels like, dozens of patent applications generally, so...

Q. But do you remember why you made that change?

MR. ZOLOTOREV: Objection.

And a caution to the witness to answer in a way that does not reveal attorney-client privileged communications during the prosecution of a patent or other attorney-client privileged communications.

If the witness can answer with a "yes" or "no" at this point, I would suggest the witness does that.

THE WITNESS: I don't remember the specifics of why, during this examination process, that particular word was changed. I'd have to consult my attorney to help -- help prosecute this.

BY MR. ZHU:

Q. So do you understand after the amendment that Claim 1 requires a plurality of blockchain mining devices?

A. I'd have to defer to my attorney on the legal. I'm not an attorney, so I'm not sure how to answer that. More, of course, the inventor focused on the actual application of the technology.

Q. So in your declaration, you testified that the Hash Generator embodies Claim 1, right?

A. Yeah. I have my declaration in front of me. I do believe so.

Q. Sorry. Do you have a printed copy of your declaration in front of you?

A. It's one document I have here. It's just an unmarked, printed copy of my declaration.

Q. Do you have any other printed papers in front of you?

A. I have two. The other one is my second declaration, proceeding number ending in 00039. It's my two declarations, just printed, unmarked copies in front of me.

Q. And do you have any other papers in front of you?

A. No, sir.

Q. Okay. Is it your opinion that the Hash Generator embodies Claim 1?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: My understanding is the Hash Generator does embody Claim 1.

BY MR. ZHU:

Q. So you must have an understanding what

Claim 1 means, right, to make that conclusion?

A. Well, while I'm not an attorney, I would say I do have an understanding of Claim 1, generally, at least as it applies to our products and technology.

Q. So what is your understanding of the term "blockchain mining devices"?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: The -- our products, such as the Hash Generator, would embody -- would be captured in that definition.

BY MR. ZHU:

Q. So what is the blockchain mining devices in the Hash Generator?

A. The system -- the Hash Generator is a blockchain mining device as a system.

Q. So the whole system is the blockchain mining devices; is that your opinion?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Misstates the witness's testimony.

THE WITNESS: I mean, would you please rephrase that to be a little more clear?

BY MR. ZHU:

Q. Is it your opinion that the whole system of

the Hash Generator is the blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Misstates the witness's prior testimony.

THE WITNESS: The Hash Generator is an example of a blockchain -- like, a Hash Generator is an example of a blockchain mining system.

BY MR. ZHU:

Q. So which part is the blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: The Hash Generator, they are multiple devices, being plural, would be multiple systems.

BY MR. ZHU:

Q. Are you saying multiple Hash Generators would be the blockchain mining devices in Claim 1?

A. Well, let me -- can you -- can you share Claim 1 again so I can just refresh?

Q. Yeah, yeah, yeah. Sure. Let me go back to my previous screen.

So this is the claim amendment we're looking at, right?

So here, this sentence requires "blockchain mining devices connected to the generator."

And my question is: Which part of the Hash Generator, in your mind, is the blockchain mining devices?

A. Well, Hash Generator encompasses a generator. The Hash Hut is a blockchain mining device that doesn't enclose it. It's paired to it.

So this is maybe a broader -- the product itself can include it in the same enclosure or not, and there can be multiple blockchain mining devices on a given source of combustible gas. Or there could be a single one, or there could be multiple.

Q. Okay. So can you explain to me a little bit on the structure of a Hash Generator, what components does it have?

A. The Hash Generator -- well, it has a power -- or a -- has a fuel gas system -- and bear in mind, the product -- I'll speak to the current state, I guess, of the product. It's changed -- you know, there's been changes over the years.

But the current state of it, there's a fuel gas connection for the source combustible gas. That would include, like, pressure regulations and the like. It connects to an integrated purpose-built generator to provide power quality and configuration required downstream.

It also includes a switchgear for distributing that power. And it includes the blockchain miners, a cooling system required to manage those for the miners to cool. And there's a network connection as well.

Q. How many generators are there in a Hash Generator?

A. In -- in a product -- in a Hash Generator that we manufacture, there's generally -- generally it's -- there's a single integrated generator in the product.

Q. And how many Bitcoin miners are there in the Hash Generator?

A. The amount of Bitcoin miners that would be installed in the system would depend on the size of the generator or the volume of gas that may be -- might be supplied as part of the system, and the spec of the blockchain miners is a couple factors.

Q. Yeah. Let me put Claim 1 back on the screen again.

So Claim 1 requires a plurality of blockchain mining devices connected to the generator, right?

Do you understand this requires multiple blockchain mining devices connected to one generator?

MR. ZOLOTOREV: Objection. Calls for expert testimony and a legal conclusion.

THE WITNESS: In practice, I mean, since I'm not an attorney, I don't know how detailed I can interpret certain -- or interpret for you what the claims mean. But I can say that, for example, a Hash Hut that's applied under this invention, it might be multiple Hash Huts applied -- connected to a single or multiple generators.

BY MR. ZHU:

Q. So in the example you just gave about Hash Hut, each Hash Hut would be a blockchain mining device; is that your opinion?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: The system -- the integrated system, I mean, as a whole, really can be applied differently. So the Hash Hut is part of the system, and there may be one or more generators included.

BY MR. ZHU:

Q. Sorry. Can you answer the question?

Is it your opinion that each Hash Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: I -- a Hash Hut comprises part of the system. So a Hash Generator, I've explained the differences between them with the generator in an enclosure or paired with it in the application of the system.

BY MR. ZHU:

Q. How is that related to my question?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Maybe rephrase the question for me.

BY MR. ZHU:

Q. So earlier you said multiple Hash Hut can be connected to the same generator in your system, right?

A. Multiple Hash Huts can be connected to the same generator.

Q. So in that scenario, is it your opinion each Hash Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: A Hash Hut is a blockchain mining device as part of the system.

BY MR. ZHU:

Q. So is it your opinion that the entire Hash

Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: A Hash Hut includes multiple components, like the blockchain miners, and the -- you know, that make up the system, so...

BY MR. ZHU:

Q. How is that relevant to my question?

My question is: Is it your opinion that an entire Hash Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Calls for expert testimony. It's asked and answered.

THE WITNESS: A Hash Hut is part of the system. On its own, it needs -- say, it also needs blockchain miners as one example, or, you know, a network connection.

BY MR. ZHU:

Q. I understand Hash Hut includes multiple components.

My question is: Is it your opinion that the entire Hash Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Asked and answered. And calls for expert testimony.

THE WITNESS: It's part of a blockchain mining device.

BY MR. ZHU:

Q. All right. It's your opinion that the entire Hash Hut is a part of a blockchain mining device.

Is that your opinion?

MR. ZOLOTOREV: Objection. Calls for an expert testimony.

THE WITNESS: Can you restate that, sir, or rephrase it?

BY MR. ZHU:

Q. So earlier you said that a Hash Hut is a part of a blockchain mining device, right? Did you say that?

MR. ZOLOTOREV: Objection to the extent it misstates the witness's prior testimony.

THE WITNESS: The components of the Hash Hut is a part of the system required to make -- to have utility.

BY MR. ZHU:

Q. I'll ask the same question again. It's a simple question.

Is it your opinion the entire Hash Hut is a blockchain mining device?

MR. ZOLOTOREV: Objection. Asked and answered. Calls for expert testimony.

THE WITNESS: Hash Hut requires blockchain mining devices and power source to the system.
BY MR. ZHU:
Q. How is that relevant to my question?
MR. ZOLOTOREV: Objection. Vague and ambiguous.
THE WITNESS: Unless you can rephrase the question, I feel like it's been answered.
BY MR. ZHU:
Q. I'll just ask the same question.
Is it your opinion the entire Hash Hut is a blockchain mining device?
A. What is an "entire Hash Hut"?
MR. ZOLOTOREV: Objection. Asked and answered.
BY MR. ZHU:
Q. What is an entire Hash Hut?
MR. ZOLOTOREV: Objection. Asked and answered. Vague and ambiguous. Calls for expert testimony.
BY MR. ZHU:
Q. What is your understanding of what is an entire Hash Hut?
A. Well, what we build and sell for specifically the Hash Hut as a product includes the

infrastructure to connect blockchain miners and be connected to the upstream power source. In the case of this specific invention, it would be a generator or source of gas.

Q. Oh, are you saying the Hash Hut you make includes a generator?

A. I believe I said it's configured to be connectible, the Hash Hut, as the product.

Q. So let me ask you this: Does a Hash Hut include a generator as a product?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The product on its own -- so what we produce in our facility, prior to the application of the product, it's a standalone enclosure for blockchain miners, and it may or may not be configured with a generator. It depends on the application.

BY MR. ZHU:

Q. So are you saying a Hash Hut may or may not include a generator in its enclosure?

A. The product we call a "Hash Hut" specifically does not include a generator in the portable enclosure. That was what, previously when I was differentiating the products, that we call a Hash

Generator and a Hash Hut.

Q. Okay. That is my understanding as well.

So -- well, you testified the Hash Hut embodies Claim 1, right?

MR. ZOLOTOREV: Objection. Mischaracterizes the witness's testimony. Vague and ambiguous.

THE WITNESS: Yeah. I mean, I don't know -- that's what my -- what I testify, that a Hash Hut embodies Claim 1 if applied in the application that requires a source of continuous combustible gas and a generator. It may also be applied elsewhere. And I'm talking specifically the Hash Hut.

BY MR. ZHU:

Q. So having established that Hash Hut doesn't include a generator, is it still your opinion that a Hash Hut embodies Claim 1?

MR. ZOLOTOREV: Objection. Mischaracterizes the witness's testimony. Calls for expert testimony. Vague and ambiguous.

THE WITNESS: The Hash Hut, as applied in the context of this claim, and more specifically application being oil and gas, source of combustible gas, the Hash Hut is applied together with the generator and that source of gas.

The product -- hopefully I've been clear, the product itself may also be applied elsewhere into other applications.

BY MR. ZHU:

Q. Can the Hash Hut be applied, for example, just mining Bitcoin off of the electrical grid?

MR. ZOLOTOREV: Objection. Asked and answered.

THE WITNESS: I believe we did cover that. Hash Hut can be applied. Again, I mean, our product that we call Hash Hut can be applied to any source of power that is effectively conditioned to be either -- you know, suitable for the spec.

BY MR. ZHU:

Q. So if it's applied to mine Bitcoin off of the electrical grid, does it still embody to Claim 1?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: Claim 1 is -- I guess -- an attorney might say limited to source combustible gas, including a generator.

If you're applying the Hash Hut anywhere outside of that to an electrical grid, probably does not embody Claim 1, unless -- unless it's a generator -- unless that electrical grid is comprised

of a generator with source combustible gas, then perhaps. You'd have to be more specific.

BY MR. ZHU:

Q. So what about if there's only one Hash Hut connected to the generator? Does that still embody Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Do you want to keep sharing your screen since we're referring to that claim?

BY MR. ZHU:

Q. Oh, sure. Sure. I can share that.

A. A Hash Hut -- a single Hash Hut, as a product, if applied with a generator and a source combustible gas and blockchain mining devices, would apply, I think.

Q. So in that scenario, what, in your mind, are the multiple blockchain mining devices?

(Reporter requested clarification.)

BY MR. ZHU:

Q. In that scenario, what, in your mind, are the blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: The blockchain miners are

together with the Hash Hut, you know, part of the devices.

BY MR. ZHU:

Q. So is it your opinion that scenario of the blockchain miners would be the mineable blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Can you repeat that?

BY MR. ZHU:

Q. So in that scenario, when a single Hash Hut is connected to one generator, is it your opinion that the multiple blockchain mining devices would be the multiple blockchain miners?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I'd probably have to defer to our expert on use on definitional grounds.

BY MR. ZHU:

Q. Well, you testified that the Hash Hut embodies Claim 1, right?

I'm just asking you what -- what is your ground for saying that, right?

So when a single Hash Hut is connected to a generator, does it still embody Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Well, a Hash Hut is comprised of a system. It is a component of the system, like the Hash Hut product. There -- it's basically the housing for the blockchain, specific, like, mining servers. So as part of the system, yeah.

BY MR. ZHU:

Q. So in your opinion, a single Hash Hut connected to a single generator, that system will still embody Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Misstates testimony. And calls for expert opinion testimony.

THE WITNESS: A single Hash Hut would include multiple blockchain mining servers. And if applied in the oil field, would also be comprised of the system including the source of gas and the generator.

BY MR. ZHU:

Q. So are you saying the individual blockchain miners will be the blockchain mining devices in that scenario?

MR. ZOLOTOREV: Objection. Vague and

ambiguous. Calls for expert testimony.

THE WITNESS: The blockchain mining servers form part of the system with the Hash Hut from the case of a Hash Generator, which happens to be in the same enclosure, so --

BY MR. ZHU:

Q. I didn't understand all of that.

Can you answer my question?

MR. ZOLOTOREV: Objection. Asked and answered. Same objections as before.

THE WITNESS: Maybe, is there another way to state the question so I can try to answer it differently?

BY MR. ZHU:

Q. Sure. Let me try to rephrase.

So earlier you testified a single Hash Hut connected to a single generator would still embody Claim 1, right?

MR. ZOLOTOREV: Objection. Misstates the witness's prior testimony. It's vague and ambiguous.

BY MR. ZHU:

Q. Is that a "yes" or a "no"?

A. There's a number of components that make up the system. You know, you didn't mention the gas; you didn't mention the blockchain mining servers,

so...

Q. How -- why are those relevant?

A. Well, it's -- I think --

MR. ZOLOTOREV: Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Well, as this claim states, it's a system, source combustible gas, generator connected to a blockchain mining device.

Then there's, sort of, I guess, narrowed sub-aspects of that. You know, like I said, I'm not really an attorney. I can mostly speak to my actual product.

BY MR. ZHU:

Q. While I understand you are not an attorney, but you submitted a declaration, and the declaration said the Hash Hut embodies Claim 1, right? Do you agree with that?

A. Yes.

Q. So my question for you is: How does Hash Hut embody Claim 1, right? What are the blockchain mining devices in the Hash Hut?

MR. ZOLOTOREV: Objection. Misstates the witness's testimony. And misstates the declaration.

THE WITNESS: Do you want to refer to the declaration specifically?

BY MR. ZHU:

Q. No, I don't want to --

A. I'm unclear.

Q. It's a very simple question.

Did you testify -- did you testify that the Hash Hut embodied Claim 1?

MR. ZOLOTOREV: Objection. Misstates the witness's prior testimony.

THE WITNESS: I would -- I can refer to my declaration. Otherwise --

BY MR. ZHU:

Q. So sitting here, without looking at your declaration, you cannot answer that question?

A. Well, you're asking me to think of a prior -- something I said prior.

Do you want to state explicitly what I said?

Q. No.

Is it your opinion that the Hash Hut embodies Claim 1?

MR. ZOLOTOREV: Objection. Asked and answered repeatedly. Vague and ambiguous. Calls for expert testimony.

BY MR. ZHU:

Q. It's a simple "yes" or "no" answer.

MR. ZOLOTOREV: The witness should feel free to answer as the witness sees fit.

THE WITNESS: The Hash Hut is a part of the system that embodies Claim 1.

BY MR. ZHU:

Q. So is it your opinion the Hash Hut itself doesn't embody Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: The Hash Hut as we've, I think, clarified is -- may or may not, as a product, as -- is a product we build and sell. It may or may not be applied by the customer as part of the system. It might be applied elsewhere that there is no source of combustible gas anywhere on the distribution system of power.

BY MR. ZHU:

Q. So, you know, what scenario does Hash Hut embody Claim 1?

A. If it's a part of a system comprising a source of combustible gas, at least from a facility, basically verbatim as Claim 1 states, if it comprises -- the system comprises a generator, in this specific case of a Hash Hut, as we've established, the generator would be not in the same

enclosure for that particular product.

It comprises blockchain mining devices, which includes the -- which would have to include the Hash Hut because that's what encloses the entire -- entirety of the system downstream of a generator, in terms of a product -- speaking of the product.

Q. So in that sense, do you require multiple Hash Huts?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: My understanding is one or more Hash Huts may be applied into this system, as Claim 1 states. One or more Hash -- like, Hash Huts, the products specifically.

BY MR. ZHU:

Q. I'm sorry, where does Claim 1 say "one or more"?

A. Well, I'm speaking of the product called Hash Hut, which Claim 1 really -- it's a product as part -- that enables the system.

Q. Sir, where does Claim 1 say "one or more"?

MR. ZOLOTOREV: Objection. Calls for expert testimony. Vague and ambiguous.

THE WITNESS: You can see my product, the Hash Hut, it houses blockchain mining servers. It

has network -- you know, there's a network connection, a network interface in there. So it's part of the system, like the Hash Hut is part of the system. And may be one or more Hash Huts, the product.

BY MR. ZHU:

Q. What about if the system only contains one Hash Hut? Will the system still embody Claim 1?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: If there's one Hash Hut, as our product applied into the system, it would -- the Hash Hut, as part of the system, would still apply, yes. It would still be one system.

BY MR. ZHU:

Q. Oh, thank you. Finally an answer to my question.

So let me just refresh your answer, right?

Even if the system contains one Hash Hut, the system still embodies Claim 1?

MR. ZOLOTOREV: Objection.

BY MR. ZHU:

Q. Right?

MR. ZOLOTOREV: Vague and ambiguous. Mischaracterizes the witness's testimony. Calls for

expert opinion testimony.

THE WITNESS: A system, as described by Claim 1, may include one of our products called a Hash Hut as part of the system.

BY MR. ZHU:

Q. Okay. So if there's just one Hash Hut in the system, what are the plural blockchain mining devices, then?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: There's -- there -- within a Hash Hut, there are a plurality of blockchain mining servers as part of the product. Or not as part of the product but as part of the system.

BY MR. ZHU:

Q. So are you saying those blockchain mining servers are the blockchain mining devices in that scenario?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: The product -- I mean, the blockchain mining servers, speaking, like, physically, do require more than just a server. They need a network interface or, like, an Internet connection and connect it to the network. That's

part of what a Hash Hut does as a product.
BY MR. ZHU:
Q. So are those blockchain mining servers the blockchain mining devices in that scenario?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: It may comprise it.
BY MR. ZHU:
Q. Are you saying the blockchain mining servers may comprise the blockchain mining device?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: A blockchain mining server like an Antminer S9, multiple may be housed within, you know, the system and form part of the device.
BY MR. ZHU:
Q. Yeah. Let me ask you a simple question.
In your opinion, is an Antminer S9 miner, is that a blockchain mining device?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. And calls for a legal conclusion.
THE WITNESS: An Antminer S9 -- I mean, I think you even state it in the declaration. It's a -- normally referred to as a mining server.

BY MR. ZHU:

Q. Okay. So sitting here today, do you have an understanding of what a blockchain mining device is?

A. It's a component of the system, which houses, you know, the mining servers, the network interface connected to a peer-to-peer network, pretty much verbatim as the claim states.

Q. So what's an example of a blockchain mining device?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: The -- I mean, the part of the system comprising, you know, everything that mine servers within our product would be part of the system.

BY MR. ZHU:

Q. Is that a -- is that part of the Hash Hut, or is that an entirety of the Hash Hut?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Can you -- is what part of the Hash Hut? Sorry.

BY MR. ZHU:

Q. The blockchain mining device.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Hash Hut, together with everything else required to actually perform blockchain mining, was -- would be -- the device is part of the system.

BY MR. ZHU:

Q. Is the blockchain mining device a part of the Hash Hut?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I mean, Hash Hut is a product. So, I mean, it -- the product requires blockchain mining servers to be included.

BY MR. ZHU:

Q. Yeah. So which part is the blockchain mining device in the product?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: It's -- the device consists of the blockchain mining servers as well as everything else required to make the system operate.

BY MR. ZHU:

Q. Is there any component in the Hash Hut that is not a blockchain mining device?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: My understanding would be the Hash Hut comprises, like -- is part of the composition of the blockchain mining device.

MR. ZOLOTOREV: Jay, we've been going for about an hour and a half, so whenever convenient, let's take a break.

MR. ZHU: Yeah, let's take a break.

(Recess: 1:54 p.m. to 2:07 p.m.)

BY MR. ZHU:

Q. Mr. Barbour, in your declaration, you stated have over 40 years' experience in the field of oil and gas production technology, 7 years' experience in blockchain mining technology.

Do you understand what a person of ordinary skill in the art is?

A. I would say, generally, yes. I have an understanding of what is meant -- sort of meant to mean.

Q. What is your understanding?

MR. ZOLOTOREV: I'll just caution the witness that to the extent the witness's understanding of this legal term is derived from communications with counsel, that the witness should

not describe that understanding in a way that reveals the substance of attorney-client privileged communications.

THE WITNESS: I guess, like, for a given industry, you know, electrical trades, someone trained in that industry might be considered a person skilled in that art.

BY MR. ZHU:

Q. Do you consider yourself a person of ordinary skill in the art in the field of oil and gas production technology?

(Reporter requested clarification.)

THE WITNESS: I guess I'd have to say yes. Yeah, I mean, at -- I can't say I fully know if a person skilled in the art is precisely defined, but I guess I would be, yes.

BY MR. ZHU:

Q. Do you consider yourself a person of ordinary skill in the art in the blockchain mining industry?

A. Under the same sort of premise of, you know, not knowing exactly how to define that term, I would say today I am, yes.

Q. Do you consider yourself an expert in the oil and gas industry?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: I'd just have to say, you know, it's so broad. I have expertise in narrow fields within the oil and gas industry. Certain expertise, yes.

BY MR. ZHU:

Q. Do you consider yourself an expert in the blockchain mining industry?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: Of course, I'd ask you to be more specific. But sort of the same thing, the blockchain mining industry comprises a very wide array of expertise, so I have some limited expertise.

BY MR. ZHU:

Q. Do you consider yourself an expert in both of these fields?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I have some expertise in either field. I guess it's the same answer, whichever industry we're talking about.

BY MR. ZHU:

Q. Do you know anyone else that's similarly situated as yourself with expertise in both industries?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: My expertise has certain limitations, right. So I don't know -- I don't really know. I guess, if -- if there's this narrow aspect of either/or you want to define, maybe I could answer that better.

BY MR. ZHU:

Q. I guess I should have done this earlier.

Are you here to testify as a fact witness or as an expert witness?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I don't really know -- I don't know if I know the differences, like the main differences. I'm here to testify as the inventor of this patent.

BY MR. ZHU:

Q. So based on your experience in blockchain mining, what are the most important considerations when designing a blockchain mining system?

MR. ZOLOTOREV: Objection. Lacks foundation. And calls for expert testimony.

THE WITNESS: Well, a blockchain mining system, I mean, it has a variety of, I guess,

applications, and there's hardware side, software side. I have expertise, maybe limited, in each aspect.

The extent of my knowledge is really narrowed to, you know, the systems we build for our customer base.

BY MR. ZHU:

Q. So would you say the electricity cost is a consideration when you're designing a blockchain mining system?

A. Well, designing a system is one thing; applying a system is another thing. You know, the electricity cost may or may not be a factor in the design, or maybe it's in the application. I guess there's a bit of gray area there. Could be -- could be in both.

Q. What about heat dissipation? Is that a consideration?

A. Yeah. I mean, at least in the design and the application, yeah, heat -- heat would be a consideration.

Q. So in the design and the application of a blockchain mining system, what other considerations are there that you think are important?

MR. ZOLOTOREV: Objection. Vague and

ambiguous. Calls for expert testimony.

THE WITNESS: Which blockchain mining system? Like, are you talking broadly or just, like --

BY MR. ZHU:

Q. Broadly.

MR. ZOLOTOREV: Same objections.

THE WITNESS: So what other -- was the question: What other considerations are there in, generally, Bitcoin mining?

BY MR. ZHU:

Q. Mm-hmm.

A. Well, when it comes to, well, product or, you know, the engineering side, it's mostly, I guess, technical. The application may be more leaning towards, like, the economic aspect of applying the product.

So from the engineering side, thermal management -- which you mentioned -- the heat is a consideration. Power quality, power liability, networking. The same on that. Like, network quality, you know, how much bandwidth is available, reliability.

There may be software included, may not be, for automation and control.

Also, of course, environment, again, we're talking engineering. So for even the application, like, the environment it's applied to. Yeah, so there's a -- there's a lot of different considerations.

Q. How do you explain that power quality? What does that mean?

A. Power quality can refer to -- it can refer to, say -- well, simple things like actual applied voltage. Voltage can change in any power system just based on, you know, what might be happening upstream in the power grid, if it's in a grid.

Power frequency, like the frequency of the AC current. That is a factor. Less so on the grid where you have lots of redundant, reliable, you know, safety measures. Whereas, in a micro grid system, such as some of the product applications we provide, that's more of a factor.

There's other stuff that maybe go beyond my own knowledge in terms of, like, you know, there's certain system loading issues with harmonics and stuff that certain engineers are more experts in.

Q. I see.

And what did you mean by "power reliability"?

A. Effectively just reliability could also include, you know, the conditioning of the power. But in my -- because if a system that's being -- that's consuming power might need a certain -- well, certain conditions like normal -- like 60 Hz frequency, for example, on an electric motor might require 60 Hz.

Whereas, another, you know, load, like a resistive load, might not. So reliability, I guess, can be broad, but also it might -- you know, it also encompasses the actual supply of power. It's whether the power is there or not.

Q. Let's see.

Did you draft your declaration?

MR. ZOLOTOREV: I'll just caution the witness to answer in a way that does not reveal the substance of any attorney-client privileged communications.

THE WITNESS: Yes. With collaboration with my attorneys.

BY MR. ZHU:

Q. And which part was prepared by an attorney?

MR. ZOLOTOREV: Objection. Misstates the witness's testimony.

And this is now getting into the drafting

of the document. So I'll allow this question, but I'll issue a strong caution to the witness to answer in a way that does not reveal any attorney-client privileged communications or work product with regard to the declaration drafting process.

THE WITNESS: The product is, you know, I -- I was heavily involved in drafting it. Of course, I consult my attorney -- attorneys.

BY MR. ZHU:

Q. So I ask, you know, same question again, right?

Is it your opinion that the Hash Generator practices Claim 1 of the '372 patent?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I mean, I think I'd deferred to a doctor or expert witness in my declaration, but I do believe the Hash Generator does practice, you know, Claim 1.

BY MR. ZHU:

Q. Is it your opinion that, in addition to Claim 1, the Hash Generator would practice other claims?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Do you mind, like -- there are certain claims you'd ask me to comment on? I mean, there are dependent claims that may optionally be included in your product.

BY MR. ZHU:

Q. So in forming your opinion, did you review all of the claims of the '372 patent?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony.

THE WITNESS: I have reviewed our patent claims, generally, in preparation of the declaration.

BY MR. ZHU:

Q. Is it your opinion that Hash Generator practice all of the claims of the '372 patent?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

And I'll caution the witness that to the extent the witness has understanding that's derived by attorney-client privileged communications and that goes beyond the declaration, then the witness should not reveal the substance of any attorney-client privileged communications.

But the witness may testify as to -- to the extent the witness has an independent understanding.

THE WITNESS: The Hash Generator is a

product we build and sell, and when applied to this system, it would practice one or more claims in the patent.

BY MR. ZHU:

Q. And that's not what I'm asking.

I'm asking: Does the product practice all of the claims of the '372 patent?

MR. ZOLOTOREV: I'll have the same objections and the same caution for the witness with regard to not revealing an understanding that comes from attorney-client privileged communications that goes beyond the declaration.

THE WITNESS: We have certain aspects of the product that are optional to the product. For example, a controller. My understanding is that -- is a part of one of the dependent claims. The Hash Generator is a product that -- the product, itself, may be configured differently.

BY MR. ZHU:

Q. So are you suggesting that not all of the claims are practiced by the Hash Generator?

MR. ZOLOTOREV: Objection. Misstates the witness's testimony.

And, again, I -- the same caution to the witness with regard to attorney-client privilege.

THE WITNESS: I know that certain applications of our product do practice the patent. Certainly Claim 1. I can't really interpret what specific other dependent claims are in question.

BY MR. ZHU:

Q. Okay. How did you prepare for the deposition today?

MR. ZOLOTOREV: Again, I'll caution the witness to not reveal the substance of any attorney-client privileged communications.

The witness may answer at a high level without doing so.

THE WITNESS: I read -- I read my declaration again and some of the cited articles.

Is there anything further you're wondering?

BY MR. ZHU:

Q. What documents did you review other than the declaration?

MR. ZOLOTOREV: I'll object as calling for attorney-client privileged communications, and I will advise the witness not to reveal any documents the witness may have reviewed at the direction of counsel.

But to the extent the witness reviewed documents independently of communications with

counsel, then the witness may disclose those.

THE WITNESS: I -- I basically took another look at the declaration that I drafted and...

BY MR. ZHU:

Q. Did you ever review the '372 patent?

A. Say that again.

Q. Did you review the '372 patent?

(Reporter requested clarification.)

THE WITNESS: Well, I have a hard copy of the patent, which I do look at from time to time. I did -- I did read Claim 1 again yesterday.

BY MR. ZHU:

Q. Did you review the dependent claims?

MR. ZOLOTOREV: And, again, I'll just caution the witness that to the extent the witness has reviewed any particular claims that was at the direction of counsel, the witness should not reveal the claims that the witness may have reviewed at the direction of counsel.

But to the extent the witness conducted independent review, then the witness may answer to that extent.

THE WITNESS: Yeah. I mean, I just looked at Claim 1, really, as a --

BY MR. ZHU:

Q. Did you talk to counsel in preparation of today's deposition?

MR. ZOLOTOREV: Again, I'll caution the witness to answer without the substance of any attorney-client privileged communications, but the witness may answer the question as a "yes" or "no."

THE WITNESS: Yes.

BY MR. ZHU:

Q. Who did you talk to?

A. Can you repeat the question?

MR. ZOLOTOREV: Well, at this point, this question blatantly calls for attorney-client privileged communications. And on that basis, I will advise the witness not to answer.

BY MR. ZHU:

Q. Are you going to answer?

A. I actually didn't hear the question.

Q. Who did you talk to in preparation of today's depo?

MR. ZOLOTOREV: I'm sorry, Jay, was it: "Who did you talk to?"

MR. ZHU: Yeah. Who did you talk to?

MR. ZOLOTOREV: Oh, I'm sorry. I didn't hear it correctly either. I will withdraw the

instruction, and the witness may answer with regard to who the witness communicated with.

THE WITNESS: Yeah. I talked to Jake here in preparation to this, as well as his counterpart, Clayton.

BY MR. ZHU:

Q. How long did you -- did you discuss in preparation for today's depo?

A. Approximately five, six hours.

Q. Do you remember what time was that?

A. It was approximately 10:00 a.m. Mountain yesterday, up to around 5:00 p.m., plus or minus a little bit of time there.

Q. I see.

A. With breaks.

Q. What's your relationship with Upstream Data? What is your role at Upstream Data?

A. Well, I'm -- I'm the majority owner still. I am the president and CEO. While things are slowly shifting, I still pretty much act as the principal designer of blockchain-related products.

But like I said earlier, we do some more stuff now, so loosely, like any owner and head of the company, I'm pretty much responsible for everything that goes on.

Q. How many employees do you have at Upstream?
A. We are, approximately, including U.S. employees now, approximately 50 people.
(Reporter requested clarification.)
THE WITNESS: Oh, yes, I'll repeat that.
Including some U.S. employees, which are -- we just brought on, and we're approximately 50, 5-0. Some of which are contractors, but mostly employees.
BY MR. ZHU:
Q. So when you said you're the majority owner, how much share do you own?
A. Is that -- is that a question -- is that relevant?
MR. ZOLOTOREV: I have some concerns, Jay, that we're getting here into confidential business information, and we don't have a protective order in place, so we can deal with this on --
BY MR. ZHU:
Q. I don't need the exact number.
Is it more than 50?
A. That's what I meant by -- well, majority control, absolutely, yes.
Q. Okay. So would you personally benefit if the company's value increases?
MR. ZOLOTOREV: Objection. Vague and

ambiguous.

(Reporter requested clarification.)

BY MR. ZHU:

Q. Would you personally benefit if the company's value increases?

(Reporter requested clarification.)

MR. ZOLOTOREV: Vague and ambiguous.

The usual.

THE WITNESS: Presumably, I would, I mean, as significant equity holder.

BY MR. ZHU:

Q. Would you personally benefit if Upstream won the litigation against Crusoe and win, you know, some damages? Right?

A. I guess if that exceeds our costs. Well, I have -- I have a significant equity ownership, so if -- if the result is value to equity holders, then I would benefit.

Q. I see.

Would you personally benefit if the '372 patent is found to be valid?

(Reporter requested clarification.)

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, I believe it's

currently valid. And if it remains valid, then I suppose I would stand to benefit in some way.

BY MR. ZHU:

Q. How many patents do you own?

A. You mean assigned to something I own equity in?

Q. Yeah.

A. I -- well, as the inventor -- I'm the inventor of several, some of which -- you know, anything with Husky, I don't have an interest in.

I believe I have one approved patent, like issue patent with Activate, and then I now have multiple with Upstream Data, the subject patent, and a few others, and we have a lot of different pending applications as well.

Q. So would you say it's more than ten?

A. It certainly feels that way. I don't have the specific amount. I can certainly find out. In terms of -- sorry, to clarify. In terms of applications.

It should be -- I think it's less than ten in terms of U.S. patents granted, but I haven't exactly been keeping track.

Q. Okay. What is Cenovus Energy? That's C-E-N-O-V-U-S.

A. Cenovus Energy, they, I believe, purchased Husky Oil.

Q. I see.

MR. ZHU: Let me introduce a new exhibit. Let me just drag it over into the chat.

Madam Court Reporter, can you mark this as Exhibit 1024. And this is U.S. Patent No. 11,659,682.

(Whereupon Exhibit 1024 was marked for identification.)

BY MR. ZHU:

Q. Share my screen so you guys can look at this.

Mr. Barbour, have you seen this document before?

A. Yeah, give me one second. I'm just opening it myself as well.

Q. Yes.

A. Yes. This appears to be one of my patent filings for what would be an early version, for example, of a product we'd call a Hash Generator.

Q. Did you draft this patent?

A. I did. In consultation with my IP counsel.

Q. What -- do you remember what the key innovation was in this patent?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, I mean, the intent, more so speaking to the product, which is, you know, some of the drawings used are from a version of the product, but -- just give me one second.

I mean, this specific iteration of the product, at least part of the intent was to simplify the product, like, a fully integrated product, just to minimize secondary, you know, call it engineering considerations, like what we've discussed previously for, you know, portable blockchain mining systems.

BY MR. ZHU:

Q. Okay. Let me actually move -- move all the way to Claim 1. So, again, take a look at Claim 1.

Claim 1 is talking about a portable blockchain mining system, right?

And at the end of it, I think it talks about a specific arrangement for the cooling -- the cooling fan, right?

Let's see.

So "the cooling fan being structured and oriented to independently provide sufficient airflow to cool both the plurality of blockchain mining processors and the engine to their respective

operating ranges of temperature."

Can you just explain that a little bit? What is this sentence talking about?

A. I'm just rereading it so I'm clear.

Q. Yeah, yeah, yeah.

A. Right. For the product, the product itself, part of the design, call it intent, the idea in terms of building a cost-effective system was generally to simplify things. And one thing -- one aspect of, you know, a portable blockchain mining system would be cooling. That's one of the design considerations.

So I attempted to utilize -- to further simplify the system so there's less components required in the system to utilize the engine radiator, which, you know, makes up a fan, at least this style of radiator did. And then used that to also displace the air to cool the -- you know, the Bitcoin mining servers.

So it was sort of a -- one of the iterations of, say, what we currently market as a Hash Generator as a product.

Q. I see.

So does that mean the Hash Generator practices patent?

A. You're saying does the Hash Generator product practice this patent?
Q. Mm-hmm.
A. Well, the Hash Generator product we presently mostly are building, we try to avoid now using the -- this section you've highlighted, the engine radiator, to provide the prime, you know, cooling power to the miners.
Though we still have this product, it's -- the issues with the product are -- I should say, we -- the product presently, we don't use the engine radiator, as this patent sort of describes. But I do have intentions of revising that -- you know, that SKU, this product, at some point in the future.
Q. I see.
So this technology is not currently being used in your products?
A. Well, I mean, I'd have to go back. It's been years since I reviewed this patent.
But in terms of that one aspect of this patent specification, like the utilizing the engine radiator as the same cooling system, that is presently not what we are building and selling.
Q. I see.
And have you ever sold anything utilizing

this technology?
A. Yes.
Q. Was that, like, a previous generation of Hash Generator?
A. It was -- I think -- I think we stopped doing it -- or we modified the product to segregate the cooling systems. At some point, the -- I'm trying to remember exactly when, but we -- many of the -- some of the early systems, like, had this kind of cooling system.
Q. Can you put a general, you know, number on it? 50 percent of your product had this feature, or is that 30 percent of your product had this feature?
A. You're talking specifically the Hash Generator with integrated gen set?
Q. I guess across all your products.
A. This particular cooling style, I'll call it, I'd have to, like, review our sales history and find out. But maybe in the dozens range, maybe. It's been a while, so I'd have to look.
Q. Sorry, did you say in the thousands range?
A. No, in the dozens.
Q. Oh, in the dozens range. I see.
So the remaining dozens products sold using this feature; is that correct?

A. There would be somewhere between, I don't know, like -- I can certainly follow up in specifics, but maybe one to three dozen. Like, they were mostly -- the product -- because I knew the limit- -- there were certain limitations of doing it this way, we mostly sold this product in Canada.

Q. I see.

How many different generations for Hash Generator did you have?

A. One thing we do a lot is continuous improvement, so we'll make changes where -- you know, where, like, for any product, not just the Hash Generator, but where I -- you know, we don't classify it as a new generation. We just make -- we find new issues with the application of the product in the field and iterate, I guess.

So I wouldn't be able to say offhand. I know I made, with the Hash Generator and the Hash Hut, a lot of changes from, you know, napkin sketch conception to, you know, commercialization, like, throughout that process. Just because of the different challenges and the applications.

Q. Okay.

MR. ZHU: I just dragged into the box another new exhibit.

Court Reporter, can you mark it as Exhibit 1025.

(Whereupon Exhibit 1025 was marked for identification.)

MR. ZHU: That will be U.S. Patent No. 11,907,029.

BY MR. ZHU:

Q. And same question for you, Mr. Barbour: Have you seen this document before? Did you draft it?

A. Yeah. This appears to be -- and if you just scroll down -- I have it myself, but I'm just looking at your screen now.

Yeah, this appears to be, you know -- I drafted it as a patent relating to -- well, among other things, like, unique cooling system that we integrate into our products -- into some products.

Q. Does the Hash Generator today practice this patent?

A. The Hash Generator today has a cooling system that does practice at least aspects of this patent specification.

I haven't looked at this one in quite a while.

Q. Yeah. Let's take a look at the claim. So

here is Claim 1. Again, it's a "Portable Blockchain Mining System" comprising of field components.

And the last clause: "In which the exhaust guide is configurable between: An upward position where the exhaust guide directs the exhaust air in an upward direction; and a recirculation position where the exhaust guide directs the exhaust air in a downward direction toward the air inlet."

So is this feature still practiced today?

A. Yeah. I mean, we use -- that's relating to the cooling from the blockchain mine servers, the heat from those servers. Not so much related to anything generator, but that cooling system we do put into a lot of our products, including the Hash Hut and Hash Generator most specifically.

Q. I see.

What percentage of your product would you say utilizes this feature?

A. Well, the Hash Hut, as a product, was effectively from learning how deficient, you know, early -- our early prototypes -- and not just our first one but subsequent ones -- were in -- in terms of effectively just performing in the field, you know, given that we were pretty much inventing the industry, I guess.

We modified -- we made improvements to the product, and so the Hash Hut product was the first product to use this sort of cooling style.

The intent of the cooling style is, you know, those exhaust guides, you can make use of the heat, which is particularly useful to improve system reliability in especially cold climates with a lot of snow and frost, et cetera.

So the Hash Hut, more or less, mostly, if not all systems -- most of them at least would embody, like -- should embody the claims of this patent.

Q. Did you say most of the Hash Hut products?

A. I'd have to -- the Hash Hut is sort of -- the way the cooling system works is it leans heavily into this. This is part of why I filed this patent, because the utility --

Q. I see.

A. -- cooling system. Whether or not, you know, some parts of this spec or, I guess, the claims, even the exhaust guide configuration was utilized by a customer. Certain customers modified our product sometimes relating to cooling. So --

Q. Mm-hmm.

So would you say this technology is used

more widely than the last one?

(Reporter requested clarification.)

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yes, sorry, Jake, I didn't hear you if you were speaking.

At this point, Jay, do you want to just repeat yourself?

MR. ZOLOTOREV: I just object that it's vague and ambiguous. That's it.

MR. ZHU: Sure.

BY MR. ZHU:

Q. So comparing to the last patent we looked at, I remember you said something, like, one dozen to three dozens, right? You were sort of using that.

Would you say this one was used more widely in more units sold?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yeah, I mean, the -- at least -- I'm not sure if I can completely characterize everything this patent means at this moment.

But in terms of the cooling system on the blockchain mining server side, the Hash Hut model was

pretty much the -- this patent was developed, like, as part of that product line in terms of just the cooling aspects, you know. There's multiple aspects of the product. But in terms of blockchain miner server cooling, that's where this patent came from is conceiving of that invention.

And then for the Hash Generator, we presently use the same cooling system as the Hash Huts. So that would be -- again, I don't really want to -- I mean, this patent spec talks about a bunch of stuff. But in terms of present day, like, we have -- we do a supply and exhaust guide, for example, configurable between the upper and downward position, as you have highlighted here, on the Hash Generator.

BY MR. ZHU:

Q. I see.

So if you can put a number on it, it would be, I don't know, more than 100 units sold practicing this feature?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: 100 of a certain product and the product applied to a certain application, or just --

BY MR. ZHU:

Q. How many units have you sold in total?

A. In total? So how many, like, Hash Huts, Hash Generators, both, and into every application?

Q. Both, every application.

A. So with every application including, you know, what we talked about earlier, like someone applying a Hash Hut to the grid, many -- like several hundred. I don't know if we're in excess of 400 right now, just because I'd have to review the sales database. Because we have smaller products, too, that are blockchain mining products that are Black Box, et cetera.

Q. Okay. I see.

So how -- how many of those more than 400 units sold are Hash Hut and Hash Generators?

MR. ZOLOTOREV: Objection to the extent this lacks foundation or calls for speculation.

THE WITNESS: Frankly, I'd honestly have to review the sales records and gross sales. I know that, you know, my declaration applies to the subject patent. I tried to quantify the specific units sold for that, but that's a subset of total sales.

BY MR. ZHU:

Q. Would you say a majority of the more than

400 units sold are Hash Hut and the Hash Generators?

A. Well, part of the problem is each of those product lines had not just different iterations, even on cooling systems in parts and pieces, but they -- like even, for example, I mentioned earlier, the Hash Generator even had a different name for a while, the Combo unit.

Q. Yeah.

A. So a significant amount of -- the question was how many -- like, a majority -- was a majority -- what was it sold for, the subject patent, like, the oil and gas, the '372 patent?

Q. What was that more-than-400 number you just gave us? Was that the total units sold?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yeah. I'm just trying to, like, ballpark. We've -- we've built and sold many hundreds of, call it, independent -- independent or, like, portable blockchain mining systems with, like, just a whole host of different versions and so, you know, the Hash Generator and Hash Hut.

So I guess I could say in terms of revenue -- it's hard to say in quantity because we've done so many of these smaller Mini Cubes that we

talked about earlier, Black Boxes.

If I included everything, I'd honestly have to go look at the sales records. But many hundreds, and that's just broadly. I'm just talking about the product, not the application of the product.

But revenue-wise, I would say -- I would agree -- or I would say a majority of the revenue would be in the Hash Hut and Hash Generator product lines.

BY MR. ZHU:

Q. I see.

A. At least for -- at least for manufactured goods.

Q. I see.

And would you say the majority of the Hash Hut and the Hash Generators practices future --

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I can't really say for sure on the Hash Generator, which -- like, what quantity because we had the -- we had more, call it, variations in the cooling design on that.

So I don't know off the top of my head, like, it's a majority or not that has -- again, I'm just looking at your highlighted section -- like, an

exhaust guide. That's above -- you know, it's mounted to the exterior, while the intake -- the Hash Hut, generally, at least we sold it with one of many variations of that attachment. So the majority of Hash Huts would -- would practice, say, some subset of this patent for sure.

BY MR. ZHU:

Q. I see. Yeah. Thank you.

MR. ZHU: Okay. I'm going to introduce the '372 patent as an exhibit. And this was already marked as Exhibit 1001.

(Whereupon Exhibit 1001 was referenced for identification.)

MR. ZHU: I just dragged it into the chat box. And this is U.S. Patent No. 11,574,372.

BY MR. ZHU:

Q. Same question for you, Mr. Barbour: Have you seen this document before? Did you draft this document?

MR. ZOLOTOREV: Objection to a compound question. And vague and ambiguous.

THE WITNESS: So have I seen this patent? The answer is yes.

And, yes, I was involved in drafting this patent.

BY MR. ZHU:

Q. Okay. So let's take a look at Claim 1 over here.

Okay. So Claim 1 requires -- in the first sentence, "A system comprising: a source of combustible gas produced from a facility selected from a group consisting of a hydrocarbon production, storage, or processing facility."

What's your understanding of the term "hydrocarbon production, storage, or processing facility"?

MR. ZOLOTOREV: Objection. Objection. Calls for expert testimony.

And I'll just caution the witness that, again, to the extent the witness's understanding is derived from communications with counsel, the witness should not reveal that derived understanding so as not to reveal the underlying communications.

However, to the extent the witness has his own understanding, the witness is free to discuss this.

THE WITNESS: Well, I guess as someone experienced in oil and gas and generally the mechanical engineering background, hydrocarbon, it's going to be a molecular, you know, carbon and

hydrogen combination, which, at least, of course, our focus is in the production of oil and gas such as methane and the different heavier hydrocarbons that are produced as part of, you know, loosely natural gas.

It also could apply to any other sources of hydrocarbon production. You know, another example might be a landfill. There's methane, and hydrocarbon is produced from landfills, for example.

And I don't know of other situations, like the coal industry, like coal steam gas and degassing coal mines, at least for sources of, you know, hydrocarbon itself.

But production -- a production facility, one example, an upstream oil and gas well or multiple-pad storage facility could be, for example, at an upstream or midstream facility, any of the tanks that hold oil.

For example, at an oil battery. Those tanks have solution gas coming out. So that would be a -- a combustible gas coming off the oil storage tank.

And, of course, processing facilities can be very broad but can be anything from a small separator package to a large midstream gas plant or

refinery or similar. So...
BY MR. ZHU:
Q. So does this cover a -- for example, a natural gas well?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: Well, a natural gas well is an upstream production facility, loosely.
So it may include an upstream natural gas well that -- that particular subsection that you've highlighted.
BY MR. ZHU:
Q. Does it include an oil well?
MR. ZOLOTOREV: Calls for expert testimony.
THE WITNESS: I would say yes, likely.
BY MR. ZHU:
Q. So the source of combustible gas produced from such a facility designed to -- for example, a natural gas produced from a natural gas plant?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony and a legal conclusion.
THE WITNESS: Well, a natural gas plant can be qualified as a processing facility.

BY MR. ZHU:

Q. So is that a "yes"?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony and a legal conclusion.

THE WITNESS: I mean, there is a source of combustible gas present at -- or processed at a natural gas plant.

BY MR. ZHU:

Q. Does the source of combustible gas cover natural gas you get from a commercial sales gas line?

MR. ZOLOTOREV: Same objections.

THE WITNESS: It might. This -- this singular sentence is quite broad in that depending on the source. If it can be classified as a facility relating to production storage or processing, then, yeah, it could qualify.

BY MR. ZHU:

Q. Okay. The second -- second line. Let's look at a generator. Right?

"A generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator."

Is this a separate component comparing to the source of combustible gas we just looked at?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: At least as to this claim, it's part of the system, the generator. A system comprising.

BY MR. ZHU:

Q. Okay. And the next phrase is "blockchain mining devices connected to the generator."

Are the blockchain mining devices separate components of the system comparing to the generator and the source of the combustible gas?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I mean, the blockchain mining servers are also comprising the system, but they -- you know, they may or may not -- like, at least for our product, I don't know -- like, it may or may not have a generator integrated, but...

BY MR. ZHU:

Q. So for the system to practice Claim 1, the system has to include a generator; is that right?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony and a legal conclusion.

THE WITNESS: I mean, the system would have

to comprise a generator connected to the source combustible gas to receive a continuous flow as per that subset of the claim.

BY MR. ZHU:

Q. Yeah. So earlier you mentioned you saw some units of the Hash Hut that's deployed, you know, not by connecting to a generator but by connecting to an electric grid before, right?

MR. ZOLOTOREV: Objection. Vague. Mischaracterizes testimony.

THE WITNESS: We've sold Hash Huts that -- again, that don't include generators that our customers did apply to nonhydrocarbon, or at least, I'll call it, they applied it to their local grid, for example.

BY MR. ZHU:

Q. Do you remember how many Hash Huts you used that with?

A. How many Hash Huts that we sold to those specific applications?

Q. Yeah.

A. Well, I didn't review that when preparing my declaration. Presumably decided they wouldn't be a part of patented claims.

Q. But was that a significant amount of the

Hash Huts you sold?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: When you say "significant," do you want to maybe specify, like, in quantity or value?

BY MR. ZHU:

Q. Yeah, is it -- is it more than a dozen?

A. Yes.

Q. Is it more than three dozens?

A. Is there more than three-dozen Hash Huts sold to customers who I presume put it on the grid? I would say probably.

I mean, the reason why it's a little less clear to me is because usually the people on the grid want bigger versions, and we don't make as many larger power-level stuff compared to the smaller stuff.

So I'd just have to review my notes to be -- or, like, my sales records to be clear on that, which I'm happy to do.

Q. Would you say it's more than 100?

MR. ZOLOTOREV: Objection. Foundation. Calls for speculation.

THE WITNESS: I do have limited knowledge

sometimes of -- you know, our company as a whole, I should say, has limited knowledge to the final use of some of the products.

So usually we have some insight on what the application is because that's part of our business is to assist ensuring they are selecting the right product that we sell. But I -- I would guess that we are under a hundred Hash Huts sold where the customer applied it to a utility connect.

BY MR. ZHU:

Q. I see.

But you're not sure because you have limited knowledge; is that correct?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: We have -- there's limitations to our knowledge. Usually the customer does disclose their application. But the reason why I can't say without -- I would just need to review the records, which may or may not disclose, like -- we might not have data on exactly how they are applied. We should likely know where they're shipped and what the customer -- have a history with the customer on their application.

But I can't really -- I'd have to go into a

deep dive into our records to try to quantify exactly how many.

BY MR. ZHU:

Q. I see.

Is there any instances you're aware that Hash Generator may be connected to a commercial sales line of natural gas?

A. That's a commercial sales line. I know that we've had -- likely have at least some customers who have done that. We have, generally, strongly -- especially early in the company's history when everybody was calling me and asking how to do these things, I advised them against -- in terms of how to apply our products, I -- I advised them against the commercial sales line because there's no reason to do so, in the sense you're not solving anyone's problem doing that. You're just speculating on Bitcoin mining at that point.

And really, the intent of our product line is to solve not just -- of course, inherently you have to speculate on Bitcoin market to a degree. But in terms of ability that may exist, you can say tomorrow, but the intent of the product is to solve issues, which is why -- you know, like the issues described in the subject patent.

Q. I see.

Would you say that's more than a dozen?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I think -- I really don't know. Usually to add color, I mean, usually you -- when we were informed by a customer, for example, that they might be applying it to a -- to a sales -- like, a source of gas that they are already selling, typically that would be as a trial basis, as in they didn't know if our systems would work, they are new to the tech, and prior to, like, actually deploying it in a harsh environment, such as your typical source of gas, such as a flare, that they wanted to test it.

However, customers might want to test it prior to taking additional risk and cost. So they might -- they might plummit into a sales line.

BY MR. ZHU:

Q. So what's, like, the extent of your knowledge of the application of your systems? So would you say no application in majority of the units that's been sold?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: We -- I would say in the vast majority of sales calls and inquiries, we gain some awareness of how the customer -- partially because we have a variety of different product lines. And honestly, we have probably the most broad customer base, or one of them, because of our product line variability.

But part of our job is to work with them on their application. And so we sometimes have more specific knowledge of the application; sometimes it's more vague; sometimes -- I'm sure people -- well, I know people have bought the product before -- buy a product, and before they deployed it, they had to liquidate. Maybe the market or maybe their personal situation changed.

Like, for example, a contract they might have had lined up didn't go through, so they ended up just reselling it.

So at least for customers we -- the main -- the main thing, though, is most of the -- certainly in Canada, and more so now in the U.S., we are actually on-site. If we're not just doing it remotely --

We've always done it remotely, offer remote consultations, but in terms of how to apply the

product and install the product. But we are also actively involved with actually installing the product for the client as well, or participating in that. So...

BY MR. ZHU:

Q. So in terms of the generator connected to the source, would you say this covers a commercial power plant based on natural gas?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony and a legal conclusion.

THE WITNESS: I guess I could say it could. The other, you know, limitations of the patent, you know, are analyzed and applied.

BY MR. ZHU:

Q. So just take, you know, the example we've talked about, right? You sell a Hash Hut to someone who connected it to the power grid, which takes power from a natural gas power plant.

Do you think that practiced Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. And calls for a legal conclusion. And calls for speculation.

THE WITNESS: Honestly, I don't really know. I don't know the answer off the top of my

head.
BY MR. ZHU:
Q. Do you think, in that scenario, that Hash Hut does not practice Claim 1?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Calls for a legal conclusion. Calls for speculation.
THE WITNESS: It's hard for me to say. We haven't analyzed, I guess, that -- that as it applies to our patent.
BY MR. ZHU:
Q. So when you say in your declaration that the Hash Hut embodies Claim 1, are you referring to a subset of the Hash Hut you sold?
A. Well, I tried to -- in the declaration, I tried to quantify the subset of commercial -- you know, what we sold as part of the section on commercial success.
So we tried to -- I did review certain sales documentation and -- because of, you know, like I said, we're very active on some applications. I know for a fact how that -- that they would practice the claim.
BY MR. ZHU:
Q. I think in your declaration you also gave

some numbers, right, in terms of the number of units sold?

MR. ZHU: Let's see. Let me -- let me drag the declaration into the chat.

So this will be Exhibit 2011.

(Whereupon Exhibit 2011 was marked for identification.)

BY MR. ZHU:

Q. Let's see. So let me share my screen.

Looking at this paragraph: "Since 2020 and through today Upstream Data has delivered at least an additional 284 systems embodying the '372 patent."

So when you -- when you talk about the 284 systems, did you exclude the systems that's hooked up to the electrical grid?

A. What I reviewed, the sales documentation in preparing this declaration, anything that I knew for sure was -- or anything that was unlikely from the records we had to be practicing this patent I excluded in an attempt to be conservative on the numbers.

Q. And when you say "unlikely," does it mean you now -- that the customer is, you know, drawing power from the electrical grid?

A. For example, when I'm given a purchase

order, if I personally -- you know, if I -- of course, if I personally knew the client and helped manage the sale and knew it was not -- or at least it was -- I would have doubts, any doubts whatsoever that it would be practicing the patent, I did not include it.

So an example might be a customer who I knew put it on a utility application. And whether or not he could be infringing my patent, to be honest, I'm not clear, but I did not include it because I wouldn't -- wouldn't be enough information to try to determine that.

Q. When you say "put it on utility application," does that mean pulling power from the electrical grid?

A. Yeah, that's what I mean by utility power application.

Q. I see.

What about the situation where the customer is drawing gas from a commercial sales line? Did you include that?

A. Well, broadly, anything that wasn't clear or was uncertain on their application, I didn't include.

So if I -- if there's any indication that

they are putting on a commercial sales line or anything that -- just generally, anything that was unclear about if the application of their product could have infringed on the patent, I would not have included.

Q. What about if the customer is drawing natural gas from a natural gas reserve? Did you include that?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: What is a "natural gas reserve"?

BY MR. ZHU:

Q. Something that's not producing oil.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Pretty much I really just tried to -- any -- any of the sales that I had some uncertainty that were involved in the application, I try to exclude that.

BY MR. ZHU:

Q. So what's your criteria for including a system here?

A. Well, pretty much if -- if -- from the knowledge we have, if it appears to follow the Claim

No. 1.

Q. Does that include a system drawing gas from a natural gas reserve?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Pretty much a -- I mean, I can defer to Claim 1, but the source of natural gas in a hydrocarbon production facility would be -- like I said, anything -- anything I wasn't sure about, we'd just try to be conservative when I put some numbers forward.

BY MR. ZHU:

Q. Yeah. I'm just trying to understand what's your criteria to say "I'm sure, you know, the system practiced the patent," right? It's very unclear to me what your criteria was.

So did you include applications that draw natural gas from an oil well? Was that included?

A. Yeah. Generally, sources of natural gas that are from an oil well, or loosely, stranded gas, were included.

Q. When you say "stranded gas," does that mean gas produced from an oil well?

MR. ZOLOTOREV: Objection. Vague.

THE WITNESS: It -- effectively, looking at

the sales documentation, if -- if there is any indication that it wasn't clearly of relevance to this IP, I just didn't include it, in an effort to be conservative.

BY MR. ZHU:

Q. Yeah. I understand that.

I'm just trying to understand what's your selection criteria how something is related to this IP, right?

So earlier you just said if someone, you know, draws power from the electrical grid, that's not included, right?

A. Don't know if I said that precisely. But being uncertain, I tried to narrow what I knew about the sales to directly sources of natural gas, where -- you know, on -- on-site.

I don't know if -- say a product applied to the grid with an upstream external generator as well as gas. I'm not really commenting on that. I'm just saying, to not overstate the sales, I try to limit it to what we knew was co-located on-site with the natural gas source.

Q. And when you say "natural gas source," is that limited to oil wells?

A. I would say no. Any -- any co-location of

the equipment on a site with the source of natural gas, in an effort just to be conservative without -- because I do have limited information. Like, I don't have complete information on every sale.

So with the information I was aware of, if it was co-located with the natural gas, then that likely would have been included. Not to say some of the sales would be also -- could have been included. Just trying to be conservative on my -- I tried not to include anything with too much uncertainty.

Q. So what percentage of these 284 systems were employed at oil wells?

A. I'd have to go back and review the details to know for sure.

Q. Would you say the majority of these were located at oil wells?

A. I would -- I would guess the majority of what I reviewed was located at oil facilities, oil-related facilities, but most of those being oil wells.

Q. What other oil-related facilities are there other than oil wells?

A. Such as -- just an example of another facility would be like an oil battery.

Q. Can you explain that a little bit?

A. An example of an oil battery, I mean, you might have a field of oil wells. The well, you know, having the artificial system pumping the oil to the surface. And then once that oil is collected, it might get pumped or trucked to mid -- at that point, you can maybe classify it as a midstream facility, such as an oil battery, like, oil treating -- I mean, these vary in scope to a wide degree, depending on the base and then all sorts of things.

But usually -- usually our sales are directed to the upstream oil wells because that's where the biggest problems lie if it's flaring and venting and generally the associated liabilities.

Q. I see.

But did you include, you know, when you calculated this 284 systems, applications where you draw natural gas from a natural gas well instead of an oil well?

A. Any application that was pretty clear was an oil and gas application, I generally included. In anything very unclear, just rather than attempting to figure out if it -- if it was infringing on any claims, I just excluded it in the effort to be conservative.

Q. Do you know instances where customers hook

your system to a natural gas plant?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: So you're -- you mean, like, a midstream natural gas plant?

BY MR. ZHU:

Q. Yeah, natural gas production facility.

A. Right. Well, when you say "plant," I'm asking just because usually that implies a sales gas line.

Q. Yeah, sales gas line.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, I know that some customers have applied our systems to sites for the sales of gas line. And typically that would be usually as a trial or them going against any advice I might have given them.

BY MR. ZHU:

Q. I see.

A. Yeah.

Q. Next sentence, you said: "Of the delivered systems, approximately 219 (~66%) were deployed in multi-system configurations."

Can you explain that a little bit? What is

"multi-system configurations"?

A. Well, just give me a minute. I'm just going to make sure it's consistent with my declaration.

More or less, a lot of these made -- or were made up from systems we deployed for customers in Canada. Or we were actively engaged with the customer on their deployments in the U.S., whether, in some cases, physically, like we were there physically, and in other cases, we were supporting them remotely.

Q. So when you say "multi-system configuration," that means systems where you were there on the deployment side.

Is that what you mean by "multi-system configurations"?

MR. ZOLOTOREV: Objection. Mischaracterizes the document. And mischaracterizes the witness's prior testimony.

THE WITNESS: Yeah. I don't think your question made sense given what I said.

If you want to restate a question.

BY MR. ZHU:

Q. Okay. So let me read you back what you said.

"More or less, a lot of this made -- or were made up from systems we deployed for customers in Canada or were actively engaged with the customer on their deployment in the U.S. In some cases, physically, like, we were there physically, and the other cases, we were supporting them remotely."

So what's your definition of the "multi-system configuration"?

A. Okay. So this is a new question.

So refer to my declaration, the products, maybe, we discussed previously, the Hash Generator and Hash Hut. We show -- you know, we cited examples in the declaration of multi-system, such as one or more Hash Generators would be multi-system because each system would comprise that source of gas, the generator, the blockchain mining devices.

So more or less, I mean, the reason I mentioned our either physical or remote support, like I said previously, I tried to limit the quantity cited to systems we had, you know, little reason to think were not, you know, as cited, that we're pretty certain about how they were deployed.

Q. Let me try to understand your definition for multi-system configuration.

You said, "We cited examples in the

declaration of multi-system such as one or more Hash Generators will be multi-system."

Is that your definition for what's a multi-system? Just having one or more Hash Generators on-site?

MR. ZOLOTOREV: Objection. Mischaracterizes prior testimony. Vague and ambiguous.

THE WITNESS: Yeah, I don't know if I agree with the premise, but the -- you know, the patent Claim 1, you know, it recites the source of gas, the generator, blockchain mining device.

So the -- for example, the Hash Generator, single unit, would -- it has the built-in generator, so when applied to that source of gas, that would be a system. So I think we showed that in the declaration.

In some cases, our customers, when they buy our Hash Hut, they supply their own generator, or at least we didn't build it. We usually were consulting with them on what's required on configuration. So we have some insight onto the application of our product through that process.

BY MR. ZHU:

Q. Sorry, I'm just trying to understand what

you mean by "multi-system configuration." Right?

Does that mean more than one Hash Hut or Hash Generator?

A. I think it could mean that, yes. I mean, the patent describes a system -- if we're sticking with the patent, primary claim. I mean, it's a system comprising of certain components, and, yes, I mean, one -- one or more Hash Generators, as an example, would be multiple -- you know, applied to the source of gas, could be multiple systems.

Q. Sorry. You are using the term "one or more." "One or more" includes one, right?

For this multi-system configuration, it includes a system where there is only one Hash Generator?

A. Can you repeat that, please?

Q. Does a multi-system configuration include a system that includes only one Hash Generator?

A. A multi-system configuration, as cited in this declaration, we were talking about -- I think we cited it even in the declaration -- multiple Hash Generators on a given site.

Q. What do you mean, "Hash Generator"? What is a "Hash Generator"?

MR. ZOLOTOREV: Objection. Vague and

ambiguous.

THE WITNESS: Well, I think we went through what a Hash Generator was from a product standpoint. Each one comprising a system. So multiple systems, each one in -- you know, in application to the source of gas comprising of systems, of multiple systems.

BY MR. ZHU:

Q. I see.

So I guess, as a counterpart, a multi-system configuration is a single-system configuration, right?

A. I think I would agree with that, yes.

Q. And your definition of a single-system configuration will be a system where it includes only one Upstream product, being a Hash Hut or a Hash Generator?

A. As applied to the -- to the primary claim. Like, if it's a Hash Hut, it would also require to be paired with a generator at the site, yes.

Q. So is it your opinion that the single-system configuration still practiced Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I believe, previously, a Hash Hut system, single Hash Hut system combined with

generator -- Hash Hut being our product, combined with generator at the source of combustible gas would, I think, likely practice Number 1, yes.

BY MR. ZHU:

Q. So why are you singling out multi-system configurations here in this sentence if you think both systems practice Claim 1?

MR. ZOLOTOREV: Objection. Mischaracterizes the witness's prior testimony. Vague and ambiguous.

THE WITNESS: Well, I don't know if I'm intentionally singling it out, other than providing additional information on -- on multi- -- like, the fact that there were multi-system configurations.

BY MR. ZHU:

Q. Okay. Let's go back to Claim 1 of the patent.

MR. ZOLOTOREV: Jay, I don't know what -- if you're at a good spot or not, but I would think if we're going to take lunch, probably should do it in maybe ten minutes or so.

MR. ZHU: Okay. Sounds good.

BY MR. ZHU:

Q. All right. Let's go back to Claim 1.

So Claim 1, we were just looking at three

components, right? The first one, it says "source of combustible gas."

The second one, it said "generator."

The third one is "a plurality of blockchain of mining devices connected to the generator."

If you're saying a single deployment practiced Claim 1, then what, in your mind, are the blockchain mining devices?

MR. ZOLOTOREV: Objection. Asked and answered. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I didn't -- I feel like this was covered before. The products we build comprise, like, mining servers, so I don't know if I have to defer to my expert to add clarity.

BY MR. ZHU:

Q. Well, you're -- you're the one who testified on, you know, your products, right? Your expert didn't testify on your products. So I'm just trying to understand, you know, how your product meets Claim 1, right?

In a single deployment -- as a single-device deployment, are you saying the mining servers are the blockchain mining devices in Claim 1?

MR. ZOLOTOREV: Objection.

Mischaracterizes the record. Mischaracterizes the witness's testimony. Is argumentative. Calls for expert testimony.

THE WITNESS: I know that to some degree I deferred to our expert. But, I mean, the products we build comprise -- they were part of a system, but, you know, they -- they comprise the device. We don't -- we don't build -- we don't produce or manufacture Bitcoin mining server, but it's packaged, so it makes up part of the system.

BY MR. ZHU:

Q. I mean, I'm just trying to understand, you know, how that single deployment meets Claim 1, right? And I just don't see multiple mining devices there.

Do you see multiple mining devices in a single deployment?

MR. ZOLOTOREV: Objection. This is argumentative. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: At this point, I don't really know how to answer this question. There are -- in terms of the product application, like a single Hash Generator, we do have -- there's multiple servers in the package.

BY MR. ZHU:

Q. I understand there are multiple servers in the package.

Are you saying those multiple servers are the blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I don't really know how to answer it. I can speak to our product -- they -- I think I've stated numerous times that the servers comprise part of the blockchain mining system.

MR. ZHU: Okay. I think it's a good time to take a break. How long do you want it?

THE WITNESS: I'm pretty good. I could do a half hour, if you guys wanted, or if you want to do more, I don't care.

MR. ZHU: Okay. Half an hour sounds good to me. So the time now is 3:53 Eastern Time. Let's get back at 4:23 Eastern.

MR. ZOLOTOREV: Yeah. Let's do 4:25 just for ease of use.

MR. ZHU: Okay.

(Recess: 3:53 p.m. to 4:28 p.m.)

BY MR. ZHU:

Q. All right. Mr. Barbour, welcome back.

Did you talk to your counsel during the break?

A. No, sir.

MR. ZHU: Mr. Zolotorev, I just want to make clear: Is Mr. Barbour a fact witness or an expert witness?

MR. ZOLOTOREV: Well, I think his declaration is very clear about that. We've certainly not offered him as an expert witness in this case. And I think his declaration makes clear that he's testifying as the inventor, the CEO, and somebody who knows the products rather than any kind of an expert witness.

MR. ZHU: Yeah, it's just, you know, his testimony included legal conclusions that suppose -- you know, related to the commercial success, second to our consideration, and how the product embodies the patent, right? So it was a little confusing.

MR. ZOLOTOREV: Well, I would disagree with that characterization. His testimony includes facts about things like commercial success and the other factors.

MR. ZHU: So you're characterizing whether a product practiced the claims of the patent as a fact?

MR. ZOLOTOREV: Well, his -- again, I think the declaration speaks for itself. He's specifically stated in his declaration that he's testifying as an inventor and as somebody knowledgeable -- highly knowledgeable about the products, as well as the head of Upstream Data, rather than as an expert.

MR. ZHU: Okay. I'll take your word for it. He's not testifying as an expert in this case; is that correct?

MR. ZOLOTOREV: He is not being offered by Upstream Data as -- as an expert witness in this case.

MR. ZHU: Okay. Thank you.

MR. ZOLOTOREV: So on that basis, I was objecting to many of your questions that tended to elicit expert testimony.

MR. ZHU: Thank you.

BY MR. ZHU:

Q. Mr. Barbour, let's go back to Claim 1 of the '372 patent that we were just looking at.

Let me share my screen.

So earlier we looked at three different elements, right? The source of combustible gas, a generator, and a plurality of blockchain mining devices.

And then the next sentence says, "In which" -- I assume this "in which" means in the system overall.

Is that your understanding as well?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Well, I guess I'd have to defer to the expert, but I'm guessing that would be a subset of the components of the system.

BY MR. ZHU:

Q. Okay. Next sentence says: "The blockchain mining devices, each have a mining processor and are connected to a network interface."

So in your opinion, what are the mining processor in a Hash Generator?

MR. ZOLOTOREV: Let me just state, again, we are not offering Mr. Barbour to provide opinions. And so your questions are not well posed. And I'll just continue objecting on the basis that your questions --

MR. ZHU: I'll disagree with that.

BY MR. ZHU:

Q. Mr. Barbour --

MR. ZOLOTOREV: Let me finish.

Your questions call to elicit opinions

which are inappropriate for a fact witness. And so I will continue to object that you are eliciting opinions from a fact witness. So I will object on the basis that your question calls for an opinion and calls for a legal conclusion.

MR. ZHU: I disagree. He explicitly testified in his declaration that blockchain products embody Claim 1 of the patent. That is an opinion. And that is a legal conclusion. So I'm just asking him why he formed that conclusion.

MR. ZOLOTOREV: I would disagree with your characterization of his testimony. He did not, at any point, characterize his statements as an opinion. That's expressly stated in his declaration.

BY MR. ZHU:

Q. So are you saying whether Upstream's products practice Claim 1 of the '372 patent is a fact?

MR. ZOLOTOREV: He is testifying as a fact witness. I'm going to leave it at that. You can perceive it as you wish. But I believe that your questions that expressly attempt to elicit an opinion are improper, and I will keep objecting.

MR. ZHU: Well, he offered opinion. I'm just asking him to explain why he offered that

opinion.

MR. ZOLOTOREV: I disagree. He has never offered an opinion.

MR. ZHU: Okay. Let's agree to disagree.

BY MR. ZHU:

Q. Mr. Barbour, so when you say: "Upstream Data's product, specifically the Hash Hub and the Hash Generator, embodies Claim 1 of the '372 patent," what, in your mind, are the blockchain mining devices?

MR. ZOLOTOREV: Objection. Asked and asked -- asked and answered repeatedly.

THE WITNESS: Well, I mean, if I haven't answered it yet, I mean, in my declaration, I think I -- it's paragraph 13. "Each Upstream Data system such as a Hash Generator or Hash Hut houses a number of blockchain mining servers - shown in" --

(Reporter requested clarification.)

THE WITNESS: Yeah, I'll read -- I just wanted to read aloud this short paragraph. I think it's paragraph 13 of my declaration.

"Each Upstream Data system such as a Hash Generator or a Hash Hut houses a number of blockchain mining servers - shown in the next screenshot are racks of blockchain miners" -- E mine servers --

"inside the enclosure. In this case, Bitmain Antminer S9 ASIC miners" with limitation -- citing limitation 1c_i.

You know, maybe part of my confusion, trying defer to the -- our expert witness on -- on what he's provided, but maybe we're -- or I've been confused on speaking about the product as opposed to, you know, what's defined here as blockchain mining devices, or at least in the actual patent claim.

And, again, in my declaration, I'm mostly referring to blockchain mining servers --

(Reporter requested clarification.)

THE WITNESS: I'm sorry. Yeah. Where did -- where do you want me to restart?

(Reporter requested clarification.)

THE WITNESS: I meant to say, in my declaration, I'm mainly referring to blockchain mining servers. But when we're citing those servers in that section, we're referring to Claim 1c_i, which is saying -- which states, "The blockchain mining devices, each have a mining processor and are connected to a network interface."

That's part of the section of my declaration. I'm attempting to, you know, show how our products embody the claims.

So, I mean, I'd have to probably defer to the expert on his testimony on some of these -- maybe these terms. But at least in that section, you know, I'm referring to, you know, example, like the Antminer S9, Bitcoin mining server meeting limitation 1c_i.

BY MR. ZHU:

Q. What is "limitation 1c_i"?

A. Let me find the patent. I actually don't have it downloaded yet.

Did you send the actual '372 patent in the chat yet?

Q. I think I'm sharing my screen. I think you're looking at the area, yeah.

A. I'm sorry. I wasn't looking at the screen.

1c_i, I understand to be starting right there. "The blockchain mining devices each having a mining processor and are connected to the network interface."

Q. And you said you're using the Bitmain Antminer S9 ASIC miner --

(Reporter requested clarification.)

BY MR. ZHU:

Q. Antminer S9.

And you're using the Antminer S9 to satisfy

this limitation?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Misstates testimony.

THE WITNESS: What I'm saying is, in my declaration, paragraph 13, which I just recited, is -- it is a part of that limitation, 1c_i, that I just recited.

BY MR. ZHU:

Q. Yeah, let me just read you back what you stated earlier.

"In that section, I'm referring to, for example, like the Antminer S9 meeting limitation 1c_i."

What do you mean by that? Are you using the Antminer S9 to meet this limitation?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony.

THE WITNESS: I'd really like to be precise. As part of my declaration, I have declared that each Upstream Data system, such as a Hash Generator or a Hash Hut, they house blockchain mining servers, which is the terminology I'm used to using.

And they are showing -- in the declaration, we are showing an example of these servers as meeting limitation 1c_i.

So generally, I don't know if it's best to defer to our expert witness on, you know, better answering this question. But in a -- you know, previously when we were talking about our product, the product is required to effectively enable -- go back to your -- the blockchain mining devices to be connected to a generator.

So, again, I'm not sure how to best answer. That's why I'm trying to defer to the expert, but it's -- we are using the Antminer S9 to satisfy the limitation highlighted under screen 1c_i.

BY MR. ZHU:

Q. So 1c_i has two things, right? One is the blockchain mining devices; one is mining processor.

What are you trying to use Antminer S9 to mean?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: My understanding is the expert, I think, adds all of the clarity you're asking for.

BY MR. ZHU:

Q. I can tell you, he did not.

MR. ZOLOTOREV: That's argumentative and is not a question. So it does not require a response.

THE WITNESS: I mean, the --

MR. ZOLOTOREV: There is no question.

THE WITNESS: Yeah.

BY MR. ZHU:

Q. Let me repeat my question.

There are at least two things in limitation 1c_i. One thing is the blockchain mining devices; another thing is the mining processor.

What are you trying to use the Antminer S9 to mean?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I would have to defer to our expert to add -- to really properly answer that question.

But my -- my understanding would be the Antminer S9 is a blockchain mining device, and each having mining processor should be referring to the ASIC within each. And I am -- well, I think the expert's opinion is better suited to answer this.

BY MR. ZHU:

Q. Now, let's keep on going. The next sentence of Claim 1 reads: "The network interface is connected to receive and transmit data through the Internet to a network that stores or has access to a

blockchain database."

So which component in the Hash Generator is network interfaced?

A. Well, really, we need on the declaration, the network interface typically comprises a cellular or satellite modem device required to connect -- well, any remote system off grid or similar to the Internet. So that's, you know, incorporated in the products we develop.

Q. So how many cellular or cellular modem are there in one Hash Generator?

A. In any given product, there's -- there is normally a minimum of one in the system -- in any -- in any product, basically, we build our system.

Q. Are there more than one modems in a Hash Generator?

A. In a single system, we don't normally put more than one. If we do -- I'm just thinking if we have done that. It would normally be for some kind of redundancy in case there is a connection issue with the Internet.

Q. I see.

The next sentence in Claim 1 reads: "The mining processors are connected to the network interface and adapted to mine transactions associated

with the blockchain database and to communicate with the blockchain database."

So what component in the Hash Generator are you using as a mining processor?

A. My understanding is the mining process --

MR. ZOLOTOREV: Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Of course, I feel like our expert's opinion is important here, but looking at your screen again, the mining processor is a subcomponent of the mining server.

And your question was what, again?

BY MR. ZHU:

Q. I'm just asking you, which component in the Hash Generator are you using as the mining processor?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Yeah, I believe the ASIC within the miner is considered the processor. But again, my expert might be better at defining that.

BY MR. ZHU:

Q. And do the ASICS in the mining server -- are they connected to the network interface?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Again, referring to Dr. You, but I believe the network interface -- like, the mining -- the mining server has a controller, which basically is the network interface for the ASIC within the server.

BY MR. ZHU:

Q. So earlier, for the previous sentence, you said, the network interface can be the modem, right?

And now, are you saying something else for the network interface for this limitation?

A. Let me read your screen again.

Well, functionally, the FDA mining server has ASICS and a controller. The controller of the mining server is connected to the net -- to the network interface.

Q. So are you using the controller as a mining processor for this limitation?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony.

THE WITNESS: Again, according to Dr. You's testimony, but, you know, my declaration, I'm citing the network interface comprising a solar or satellite modem.

The 1c -- 1c_iii, the processors in my declaration, that limitation is applied to the

Antminer S9 and its controller. Right.
BY MR. ZHU:
Q. Yeah. I'm just trying to understand. Because earlier you said the blockchain mining devices are the mining servers, right?
MR. ZOLOTOREV: Objection. Mischaracterizes testimony. Vague and ambiguous.
THE WITNESS: I don't know what specifically I characterized earlier. But I mean, generally, I'm leaning on Dr. You's opinion on --
BY MR. ZHU:
Q. Well, he didn't offer an opinion.
MR. ZOLOTOREV: That's argumentative. And there's no question pending that requires a response. It's also false.
BY MR. ZHU:
Q. Are you going to answer that question?
MR. ZOLOTOREV: There is no question pending for him to answer.
BY MR. ZHU:
Q. Let me repeat the pending question.
Earlier you used the mining server for the limitation of the blockchain mining devices, right?
A. Well, I --
MR. ZOLOTOREV: Objection.

Mischaracterizes testimony. Vague and ambiguous.

THE WITNESS: I believe I'm trying to defer to our expert on these matters. If you want to go back to that section of the declaration, I can repeat that again.

BY MR. ZHU:

Q. So let me ask you this: Did Dr. You offer an opinion on whether Upstream products practice Claim 1?

A. I believe he did. I've not reviewed his opinion in depth any time recently. So...

Q. Well, we can look at it together if you want.

A. I don't know if I want to or not.

Q. Well, you said you believe he did. I'm just asking you why you said that. Right?

I'm going to drag into the chat box Exhibit 2001.

(Whereupon Exhibit 2001 was referenced for identification.)

BY MR. ZHU:

Q. All right. Let me share my screen, so you can look at what I'm looking at.

Do you understand this is the Declaration of Dr. Fengqi You?

Have you seen this document before?

A. I do not think I've had intimate knowledge of all of the contents. But I'm aware that he's supplied his opinion.

Q. Earlier you said Dr. You opined on whether Upstream product embodies Claim 1, right?

A. I presume that -- well, I think I did say that, and I presume that to be true, yes.

Q. Do you know where in his declaration he opined on that?

MR. ZOLOTOREV: I'm sorry, Jay. But I don't know if you're trying to mislead the witness on purpose. This is the wrong declaration that you're pointing him to.

MR. ZHU: Is this not "Declaration of Dr. You"?

MR. ZOLOTOREV: It is his first declaration. I hope it's been brought to your attention that he has two declarations.

MR. ZHU: Let me see if can I find the other one.

MR. ZOLOTOREV: Good.

MR. ZHU: Do you happen to know the exhibit number?

MR. ZOLOTOREV: I don't offhand, but I can

look it up.

I believe it's Exhibit 2010.

MR. ZHU: All right. Let me take a look.

All right. Let me drag 2010 into the chat box.

(Whereupon Exhibit 2010 was referenced for identification.)

BY MR. ZHU:

Q. Let me share my screen.

Okay. So what I'm showing here is the "Second Declaration of Dr. Fengqi You."

Mr. Barbour, have you seen this document before?

MR. ZOLOTOREV: And I'll just note for the record that there is yellow highlighting here in this document that was -- I don't know if it was part of the original declaration.

MR. ZHU: Okay. Let me -- yeah, actually let me remove this highlighting and redrag into the chat box.

Okay. Please use the later version of this document.

Let me share my screen again.

BY MR. ZHU:

Q. Mr. Barbour, have you seen this document

before?

A. I'm not entirely sure I'm aware there -- our expert submitted a declaration.

Q. All right. Do you know where Dr. You testified as opposed to whether -- sorry, as related to whether Upstream Data's products practice Claim 1?

A. Did you say do I know where or do I --

Q. Yeah. Do you know where?

A. I do not know where in the document.

Q. Okay. Let me -- let me try to find it.

Okay. So I'm looking at page 38, paragraph 74: "For this portion of my declaration, I have relied on the declaration of Mr. Barbour (EX2011), the named inventor of the '372 patent and founder of the Patent Owner, Upstream Data. For consistency, I have copied relevant portions of Mr. Barbour's declaration, modifying them as needed to reflect my opinions."

So is this where you're referring to when you said Mr. You testified whether Upstream Data's product practiced Claim 1?

A. Well, I was generally -- or I'm generally deferring to him on confusion. You're asking for clarification on in terms of what might be an expert's opinion?

Q. I'm just asking you why you formed the opinion that Upstream Data's products practice Claim 1, right?

MR. ZOLOTOREV: Objection. Mischaracterizes the witness's testimony.

BY MR. ZHU:

Q. And based on the paragraph we just read, it looks like Dr. You is deferring to your opinion on that matter.

Do you agree?

MR. ZOLOTOREV: Objection. Mischaracterizes Dr. You's declaration. It's vague and ambiguous.

THE WITNESS: Yeah. I don't know if my confusion is based on interposing your questions is -- I don't know if the premise of your question is accurate, but...

BY MR. ZHU:

Q. Do you know if Mr. You formed an independent opinion on whether Upstream Data's products practice Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for speculation.

THE WITNESS: Generally, I am of the belief that our products practice Claim 1.

BY MR. ZHU:

Q. And that is your opinion, correct?

MR. ZOLOTOREV: Objection. Mischaracterizes the witness's testimony. It's vague and ambiguous.

BY MR. ZHU:

Q. Okay. Now we got that all sorted out, let's go back to Claim 1.

Let me share my screen back to the '372 patent.

I believe we're looking at the last sentence here.

"The mining processors are connected to the network interface."

My question for you is the same: What component in the Hash Generator is the mining processor?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: In my declaration, I don't believe I'm defining -- I'm using the term "blockchain mining servers" and referring to how that meets certain limitations, for example, at paragraph 13 I cited.

BY MR. ZHU:

Q. Paragraph 13 was talking about limitation 1c_i, right? Which is this limitation.

A. I'm sorry. Yeah, I was just going off memory.

I mean, I don't -- in my declaration I use terms like "the miner" or "mining server." The complete server has subcomponents, but it -- it -- you know, it's configured to be connected to the network interface, for example.

Q. So what is connected to the network interface?

A. I mean, the network interface we were previously discussing can comprise, like, a cellular or satellite modem. So a Bitcoin mining server is then connected through -- connected to that through Ethernet and network switches.

Q. Okay. Actually let's go back to paragraph 13 in your declaration.

So paragraph 13 in your declaration talks about a limitation of 1c_i, right?

And in limitation 1c_i, there are at least two components. One is the blockchain mining device; one is the mining processor.

And which, you know, which thing are using

the mining server for?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Beyond what I've said, I mean, it is my understanding that the expert did supply some technical background or briefing on certain definitions, but, I mean, in my declaration I'm citing limitation 1c_i for the servers.

BY MR. ZHU:

Q. Yeah. So it's just -- you know, it's not clear based on paragraph 13, right, which one is a mining device and which one is the mining processor?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Argumentative.

THE WITNESS: I'm not sure if it's clear or not. I mean, a server is -- is a blockchain mining device, which -- which is composed of subcomponents like ASICS, which are a mining processor, for example.

BY MR. ZHU:

Q. I see.

So let's go back to -- I guess you labeled those as limitation 1c_iii.

So in limitation 1c_iii, it requires "mining processors are connected to the network

interface."

So are you saying the ASIC processors are connected to the network interface?

MR. ZOLOTOREV: Objection. Mischaracterizes the document. Mischaracterizes the witness's testimony. And calls for expert testimony.

THE WITNESS: I mean, in my declaration, speaking about miners and servers, I define some of the components, like the subcomponents. The controller of a miner, you know, interacts with the network, communicates with the network. It's the interface between the ASICS and the network interface.

BY MR. ZHU:

Q. Let me just try to understand.

Are you saying the controller acts as an interface between the ASICS and the network interface?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony.

THE WITNESS: What my declaration specifically says: "A miner such as the S9 comprises Hash boards with dedicated blockchain mining ASICS and a controller performing a number of functions, including network communication with blockchain

database nodes" --

(Reporter requested clarification.)

THE WITNESS: Well, I recited paragraph 15 in my declaration word for word.

I think it was: "network communication with blockchain database nodes as illustrated in the following diagram" with "an S9 installation guide," as part of meeting limitation 1c_iii.

BY MR. ZHU:

Q. Limitation 1c_iii requires mining processors, right?

A. It does. I -- I don't speak in the declaration about processors. My understanding is Dr. You might have.

Q. So we just looked at Dr. You's declaration, right?

He relied on your opinion on this matter, right?

MR. ZOLOTOREV: Objection. Argumentative. It mischaracterizes Dr. You's declaration. It's vague and ambiguous.

BY MR. ZHU:

Q. Let me just --

A. I generally don't know if that's fair. I haven't -- I don't know if I've ever fully reviewed

the document you're showing, so -- of Dr. You.

Q. Let me read you back Dr. You's original words.

"For this portion of my declaration, I have relied on the declaration of Mr. Barbour (EX2011), the named inventor of the '372 patent and founder of the Patent Owner, Upstream Data."

Is there any reason to doubt that sentence?

A. I'm not really -- it's the rest of the document that -- because in my declaration I don't think I've defined -- or I don't -- I talk about mining servers in miners. I don't know if I'm talking about -- I'll double check, but -- I don't see processor -- unless I'm missing it -- in my declaration.

So what I meant by deferring to Dr. You is just -- you're asking me for certain definitions, I guess. That's what I'm maybe presuming that he -- that it was implied as the expert's opinion.

Q. Well, sitting here, do you have an understanding on how Hash Generator meets limitation 1c_iii?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I don't know if we have an

understanding in terms of -- I don't fully understand what you're trying to ask me, but I've read out my declaration for you, so I'm not sure what's unclear.
BY MR. ZHU:
Q. Is it your opinion that the Hash Generator meets limitation of 1c_iii?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: Can you just repeat that?
BY MR. ZHU:
Q. Is it your opinion that the Hash Generator meets limitation 1c_iii of Claim 1?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: I generally believe our products in their application in a system can meet Claim 1. Hash Generator is something we build, so it's part of the system that gets applied.
BY MR. ZHU:
Q. Do you have an understanding how your product meets Claim 1?
A. I believe it's well articulated in the declaration.
Q. So do you agree limitation 1c_iii requires mining processors?

A. I mean, I don't see -- my declaration refers to things like miners and ASICS.

So can you repeat that?

Q. Do you understand limitation 1c_iii requires mining processors?

A. Yes.

Q. And what are the mining processors in your product?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Like I said, I haven't reviewed, or I don't have committed to memory, Dr. You's entire declaration or testimony. I've embodied limitation 1c_iii in my declaration. So perhaps his has more clarity on the definitions you're seeking.

BY MR. ZHU:

Q. Okay. Are you refusing to answer my question?

MR. ZOLOTOREV: Objection. Argumentative. Mischaracterizes the witness's testimony. Badgering the witness.

THE WITNESS: I don't believe I am. I feel like I've --

BY MR. ZHU:

Q. What is a mining processor in your product?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: So you're asking regarding limitation 1c_iii. I can repeat, again, my declaration for you. It's paragraph 15.

BY MR. ZHU:

Q. Sorry. What was the answer?

MR. ZOLOTOREV: Objection. Asked and answered.

BY MR. ZHU:

Q. Okay. Let me read you paragraph 15 of your declaration: "A miner such as the S9 comprises Hash boards with dedicated blockchain mining ASICS and a controller performing a number of functions, including network communication with blockchain database nodes as illustrated in the following diagram from an S9 installation guide (limitation [1c_iii])."

So paragraph 14 -- 15, I think it talks about three different things, right? It talks about a miner such as S9. It talks about Hash boards with dedicated blockchain mining ASICS. And also it talks about a controller.

So which of these three things are you

using to satisfy the claim limitation mining processor?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I do think -- I am not sure how to clearly answer this, but an ASIC chip is a mining processor, can be referred to that.

It could all -- I mean, it can be defined as the whole package. Depends on who you ask, but...

BY MR. ZHU:

Q. So are you not sure what the mining processor are in your product?

A. Well, the Antminer S9 is comprised as the processor.

Q. So are you saying the mining processor is a subpart of the Antminer?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I mean, an Antminer S9 comprises a processor. I mean, the ASIC chip might be considered the processor.

BY MR. ZHU:

Q. So if the ASIC chip is considered the mining processor, is the ASIC chip connected to the network interface?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: I don't know if Dr. You provided more specifics. Of course, I defer to that, but the controller -- the controller on a -- on a miner sort of handles network communication with the blockchain database.

BY MR. ZHU:

Q. Sorry. My question is: Are the ASIC processors connected to the network interface?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Well, my understanding is, a declared the network interface can comprise, like, a cellular or satellite modem. So an ASIC chip does require the controller -- the controller is the primary system that enables the communication between --

BY MR. ZHU:

Q. Between the what?

MR. ZOLOTOREV: I'm sorry. Can I have that question back?

BY MR. ZHU:

Q. Between what?

MR. ZOLOTOREV: Thank you.

Objection. Vague and ambiguous. And again, it calls for expert testimony.

THE WITNESS: Yeah. I mean, same rehash. If -- I don't know if the expert provided the actual answers you're looking for, but a miner has ASIC chips and a controller -- it's the controller that gets connected to the network interface and controls and provides the information for the chips.

BY MR. ZHU:

Q. All right. Let me read you back your earlier testimony. Earlier you said: "The controller is the primary system that enables the communication between" -- can you finish that sentence?

A. Between the ASIC chips and the network.

Q. Okay. So what is your understanding of the word: "To communicate with the blockchain database"?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: What were you highlighting on your screen when you were asking that?

BY MR. ZHU:

Q. Right here. "To communicate with the blockchain database."

MR. ZOLOTOREV: Same objections.

BY MR. ZHU:

Q. I believe it's the same limitations, limitation on 1c_iii.

A. And so your question, again, is?

Q. What's your understanding of the term: "Communicate with the blockchain database"?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: There needs to be an Internet access to -- there needs to be access to a blockchain database, so that's generally done through the Internet.

BY MR. ZHU:

Q. And earlier you said: "The controller acts as interface between the ASIC chips and the network." Right?

A. The networks --

MR. ZOLOTOREV: Vague and ambiguous. And mischaracterizes testimony.

BY MR. ZHU:

Q. Okay. Let me read you back your earlier testimony.

Yeah. So earlier you said: "The controller is a primary system that enables the communication between" --

Can you finish that sentence?

MR. ZOLOTOREV: Objection. Asked and answered.

THE WITNESS: Are you asking because I didn't answer -- or I didn't finish it previously, like, in the original question? Or are you just trying to get me to recite my original answer?

BY MR. ZHU:

Q. Can you just finish that sentence? What were you trying to say? What was controller acting as an interface between?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: I think I answered that already. The controller on a mining server interfaces between a number of things, but including network communications, with a blockchain database, among other things. So it's an interface between the chips and other components on the miner.

BY MR. ZHU:

Q. So does the ASIC chips communicate with the blockchain database?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Calls for a legal conclusion.

THE WITNESS: The answer is, I don't -- I don't know if an ASIC chip without anything else can communicate with the blockchain database. Probably ask my expert for his opinion on that.

BY MR. ZHU:

Q. So is the ASIC chips adapted to mine transactions?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony and a legal conclusion.

THE WITNESS: Can you repeat the question, sir?

BY MR. ZHU:

Q. Is an ASIC chip adapted to mine transactions?

MR. ZOLOTOREV: Same objections.

THE WITNESS: I mean, yes. It is part of a -- an ASIC chip is part of a complete miner, so probably defer to our expert's testimony on that answer.

BY MR. ZHU:

Q. And now, for the ASIC chip to mine transactions, does it need Internet access?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: In one way or the other, an ASIC chip needs to be controlled and have access to up-to-date information on the network. Again, our expert's opinion is probably more relevant.

BY MR. ZHU:

Q. Okay. The next sentence says: "Network is a peer-to-peer network."

The next one says: "The blockchain database is a distributed database stored on plural nodes in the peer-to-peer network."

What's your understanding of the term "nodes"?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Well, commonly, a Bitcoin, or a node, is referred to as a copy of the Bitcoin ledger. So that makes up the peer-to-peer network.

BY MR. ZHU:

Q. Is the node a physical device?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Yeah. I mean, the node is -- I guess no software can be embodied without a physical device, but -- so it's not clear to me how to answer that, but perhaps our expert has.

A computer can hold a software, which would then function as a node.

BY MR. ZHU:

Q. Let's see. Okay.

So I think you testified that Upstream Data's product embody both the independent claims and some dependent claim; is that right?

A. You mean in my declaration?

Q. Mm-hmm.

A. Yeah. I believe we focused on -- well, of course, the independent claim and then a subset of the dependent claims.

Q. So I think your original words were: "To be sure, our systems embody many more dependent claims than I discuss herein."

Did I read that correct?

A. Are you reciting -- let me look at your screen. You don't have it up.

Are you reciting the declaration?

Q. Yeah. It's your declaration in paragraph 9, the last sentence.

A. Sounds familiar. Let me just take a look again.

Yes. I think you read it correct.

Q. And what is your basis for saying this?

A. I mean --

MR. ZOLOTOREV: I'll just caution the witness to answer in a way that does not reveal any attorney-client privileged communications.

THE WITNESS: I mean, there's certain, I guess, applications of the system that are narrowed in the dependent claims -- some of the dependent claims, and there's -- I mean, I believe that -- let me double check here. But I believe the declaration we referred to, for example, an optional controller that we also provide that practices a subset of the dependent claims.

BY MR. ZHU:

Q. Would that be dependent Claim 10?

A. I would -- I know that in my declaration refer to 10 and 35, but let me look at your screen. I don't have the claim up.

Yeah, the optional controller would embody Claim 10.

Q. So Claim 10 requires increasing or decreasing the mining activity of the mining processor.

How is this achieved by the optional controller?

A. That -- that is normally done, like, the

mining activity of the processor would be done through -- for example, changing the clock rate.

Q. Is that how it's realized in Hash Generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The -- the controller can function that way. Generally, you know, the products we build have -- normally the controller will, for example, engage in the quantity of, you know, mining processors engaged in mining.

BY MR. ZHU:

Q. So does a Hash Generator change the clock rate of the mining processor?

(Reporter requested clarification.)

MR. ZHU: The clock rate.

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I mean, the controller we -- that goes into the system, in practice, I mean, since we don't always know what mining -- like, mining servers are utilized in terms about the controllers, what it's broadly capable of doing is, more or less, modulating the -- the amount of servers engaged in mining.

For example, our controller can communicate with the servers to tell it to modify clocking, but just depends on the situation.

BY MR. ZHU:

Q. So if you shut down a mining processor, does that decrease the mining activity of that mining processor?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: The mining activity can be adjusted, I guess, a number of ways. Obviously, well, cutting power to it is one, clock rate is another, Internet connection might be another way to modify the mining activity.

BY MR. ZHU:

Q. Does to satisfy Claim 10, would you say, you know, all three ways would satisfy Claim 10?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony and a legal conclusion.

THE WITNESS: I missed, like, the last bit of your question.

BY MR. ZHU:

Q. Yeah. So earlier you said: "There are different ways to adjust mining activity of a mining

processor," right?

For example, cutting off the power, cutting out the Internet, or a clock. The processor -- that's the right example of methods, right?

Do all three meet Claim 10?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Calls for a legal conclusion.

THE WITNESS: I don't know how to answer that. I'm not -- I'm not really sure how to answer.

BY MR. ZHU:

Q. So how does a Hash Generator meet Claim 10?

(Reporter requested clarification.)

BY MR. ZHU:

Q. Yeah, sorry. Let me repeat.

Does Hash Generator meet Claim 10?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, the Hash Generator has an optional controller. Without the controller, I guess it's possible to potentially try to meet Claim 10. The controller is designed to do the load balancing, like, in a reliable way, or, like, an automated or proactive way.

So mining activity is modulated in a number

of ways, I guess.

BY MR. ZHU:

Q. So are you saying even without the optional controller, Hash Generator may still meet Claim 10?

A. Well, the optional controller is designed to make it to be able to do that automatically and reliably.

In terms of the current product in its current state, I don't know offhand. I mean, I can either talk to my staff on other ways of -- you could cut the Internet connection somehow remotely and that would -- well, it would change the load exerted by the devices on the generator.

Q. So if you manually cut the Internet, presumably plug in the Ethernet cable, does that count as meeting Claim 10?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Incomplete hypothetical. Calls for expert testimony. Calls for a legal conclusion.

THE WITNESS: Generally, I don't know for sure. I mean, it would be impractical, as far as I understand, to try to consistently control mining activity just by Internet access, given that mining servers vary and many can function.

BY MR. ZHU:

Q. So what percentage of your deployed systems have the optional controller?

A. I'm trying to remember what I stated in my declaration. Let's look this up here.

Q. I think it's in paragraph 24.

A. Yeah, I found it.

What I cited is through -- I mean, we do have pretty good details on which systems had an optional controller. So that should be -- should be accurate based on the logically -- previously discussed on the gross amount of systems delivered.

Q. Why do you list the optional controller as an optional feature?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I mean, practically, or the business mandated it in all early products. Some applications for products, and the optional controller also evolved, significantly changed over time. But just speaking from, like, a business standpoint or a product standpoint, the controller provides utility to customers for a variety of reasons, and without it, the product is less overall useful. It just adds functionality.

BY MR. ZHU:

Q. So in your declaration you stated, approximately 30 percent were deployed with an optional controller, right?

A. Yeah. That's what -- what I would estimate for those delivered that practice the patented claims.

Q. Does that mean the majority of the deployed systems do not have the optional controller?

A. I believe I limited that to the amount of systems that I believe to be practicing Claim 1. There would have been a certain amount of systems for sure that were applied, you know, that would practice Claim 1 that had no controller.

Q. And this optional feature, you know, solely depends on the client, right? If the client chooses it, you'll provide it; is that correct?

A. I wouldn't say it solely depends on the client. It's certainly -- our customer can chose how they apply our systems in terms of what features we can add or consider. But usually we normally recommend it, certainly now that the controller has improved a lot.

One -- yeah. One reason why we -- we did have a lot of early troubles being a small company

supporting control systems remotely. So there's a number of factors that went into, like, our recommendation based on their application or who they were, their needs, et cetera.

Q. What -- what is the optional controller? Is that a software? Is that a hardware?

A. The current state of the controller, which would be sort of branded as LoadSync, it -- well, it used to be on a PLC industrial control system. At present it's on more of an industrial PC with a WinEx based software back end.

So right now we mainly -- or say that a customer needing it or it's being sold with the product it's provided within a piece of hardware connected to different parts of our system, including the -- the blockchain miners.

Q. So why was there, you know, no optional controller in 70 percent of the, you know, 284 systems you sold?

A. Well, one factor is cost. So some customers didn't want to pay the extra cost. That's a significant factor.

And just depending on the application, the example would be, if they weren't attempting to capture the entirety of a variable fuel stream, for

example, and they were just taking a small chunk and -- at a steady rate, it wouldn't be as useful to them, so they decided to save money. Mostly would be recommending the product, especially lately, with it improving in terms of scaleability.

Q. Do you have a general idea of how much an optional controller costs?

A. It's hard to say in the sense that today we build the systems with a lot of automation capability, including, like, just, for example, the -- a fan -- supply fan to cool the building is now on, say, a VFD.

Whereas, we went through a period where we offered a much, call it, simplified system, mainly to reduce costs for people.

So yeah, to answer the question, the controller, right now we're -- we're -- because we just updated the system, we're sort of giving it away into the system at no cost to encourage people to use it, given the functionality it's growing into.

But we sold them from anywhere from, like, five to 7,000 as a piece of hardware, but there's also other systems that integrate with it, so it's hard to really quantify.

Q. How much is a Hash Generator overall?

A. Say, like, a 180-kilowatt version that we're currently selling, we're selling it for, approximately, public price, like 127,500.

Q. Thank you.

A. But mainly because of the -- well, as it relates to the controller, we revamped it, we're sort of throwing it in to the deals until it kind of develops further. More so on Cloud management.

Q. And what about Hash Hut, how much is Hash Hut in general?

A. We can, sort of, customize it. But, like, say one of our bigger units, like a 900-kilowatt Hash Hut, in terms of costs would be, like, I think 112,000, 113,000. But then we give them the option of, like, more automation and controls. So, like, smarter systems, like smart PDUs.

Q. I see.

And how much of the 112 or 113 is a cost of the actual mining servers?

A. So that one, one SKU of the Hash Hut, I guess, one that -- none of our prices, unless they ask for us to procure the servers for them, that price is just our product without the servers, and then we package the servers in.

Q. I see.

And what's your profit margin look like?

MR. ZOLOTOREV: I think we're getting into another area of potential concern with the lack of confidentiality of this. So perhaps, Jay, if you can accept a general, more of a ballpark figure, or if there's some way to massage this or that without divulging, you know, trade secrets on public record.

MR. ZHU: Sure.

BY MR. ZHU:

Q. Can you give us a ballpark estimate?

MR. ZOLOTOREV: Maybe a range or something like that.

And I'm sorry, Jay, I don't want to speak out of turn, but I'd hate to have to stop all of this and have to get a protective order in place or whatever. I'm just trying to be as accommodating as I can.

MR. ZHU: Understood.

THE WITNESS: Do you mind me asking is -- I mean, profit margin, of course, is a sensitive disclosure. Generally is not -- I don't see any benefit of me ever disclosing that to the public.

But is there, like, a line of reasoning on why that is relevant to -- based on my testimony?

BY MR. ZHU:

Q. Just trying to get to the commercial success part.

MR. ZOLOTOREV: And may I suggest one way, Steve, to consider whether or not you can give a range, kind of a broad range, like, say, between 5 and 15, or something like that, if that would perhaps alleviate some of that concern.

THE WITNESS: I would say always in general. I don't want to answer that kind of question, but I'm assuming I have to answer this question?

MR. ZOLOTOREV: Well, I mean, if -- if the question remains pending, we -- we can factually delay it and get a protective order in place, and then, you know, effectively you can come back on the confidential record and answer it. But that's certainly one way of doing it. And it wouldn't be today because it would take time to get a -- to get some sort of a PO in place, I would imagine.

THE WITNESS: Right. Well, I mean, in the business I'm aware of -- now, are you asking for a specific product or just, like, generally?

BY MR. ZHU:

Q. How about the Hash Hut?

A. I believe, at least for gross profit margins, off of, like, cost of goods, probably in the range of -- depending on the system and the size and the quantity and a whole host of things, anywhere from, like, 50 to 100 percent gross profit margin.

Q. Is that the same range for the Hash Generator?

A. And I'm speaking mainly manufactured goods, but the Hash Generator, generally, will have a lower margin because it's -- I mean, we're doing more custom manufacturing for the Hash Hut.

Whereas, the Hash Generator, a larger part of the cost of goods is the engine that we're supplied and then we build that up, so it doesn't have as high as a gross profit.

Q. I see.

So would you say it's less than 50 percent?

A. I think we're probably targeting around 50 percent. And, again, there's a lot of considerations. But we're targeting that, and there's, like, a plus -- plus or minus on either side, depending on different factors.

And that's assuming, you know, my accounting system is even giving me just, like, accurate parts in the goods, given we've just

grown -- grown quickly and changed some things.

Q. Okay. What was your annual revenue from last year?

MR. ZOLOTOREV: And, again, I'm not sure how sensitive it is, Steve. So if this is something that you would prefer not to divulge on public record, we can -- we can, again, take it offline and put some, sort of, a protective order in place and bring you back to answer that particular question.

But perhaps if you are going to answer it very roughly or as a range or in some other manner, we can proceed today.

THE WITNESS: I didn't review anything. You know, I didn't read it in preparation of this. I can -- it is sort of -- these are numbers I would never disclose publicly without a gun to my head. So one, if you want accurate numbers, probably best I actually go get them for you and we do it separately.

BY MR. ZHU:

Q. Yeah. There's no need for accurate numbers. Just ballpark range, like you just did for the profit margin.

MR. ZOLOTOREV: And, again, Steve, I want to make sure --

And, again, Jay, I apologize, but this is,

as you might imagine, pretty sensitive data.

Steve, if you don't feel comfortable giving even the range on confidential record, just state it -- state so, and we'll take it up.

Jay and I will take it up separately as to what to do about getting that -- getting that question answered. But if you're comfortable providing a rough range of some sort, then that's fine.

THE WITNESS: Well, main thing is, if I'm providing it, I'd rather give you accurate info, or reasonably accurate and not ballpark it. I, sort of, have a CFO dealing with all of this. I mean, I sort of have an idea in my head, but -- you know, because I review it from time to time. But I don't know, I -- the business -- business sensitive info, maybe getting a list of stuff, I'll send it to you after the fact, and it will be accurate.

BY MR. ZHU:

Q. Okay. I take it you refuse to answer that question?

MR. ZOLOTOREV: Well, I mean, I don't think that's fair, Jay. I think the issue is confidentiality of this information. This is highly confidential business information, and we are on

public record. So we're not refusing to answer. We are saying, if you want an answer to that question, one way to do that would be put a PO in place, which, you know, we hopefully -- we can cooperatively get that done. And then we can provide that information. Either Steve can sit for a two-minute deposition and you can ask that question, or perhaps there's some other way. I don't know.

MR. ZHU: Sounds good.

BY MR. ZHU:

Q. Do you know your market share?

A. I don't know the market share. I know we -- in the United States, we have significant penetration in terms of quantity of systems deployed.

Now, I don't know what that is on the total. I don't know what else is going on, you know, outside of -- around business dealings, but -- yeah.

Q. Who are your competitors in the industry?

A. I consider Crusoe as a major competitor. I've seen -- well, there's, like, Giga Energy Solutions. They are a competitor. I actually train them, and they bought their first product from us. So did probably many companies that I could cite, but I don't know if they're even in business anymore.

But I guess they would be the two biggest

competitors I have at the present. I'm aware EZ Blockchain might be a competitor. I haven't heard much of them in recent times.

Q. So how does your sales number compare with Crusoe?

MR. ZOLOTOREV: Objection. Lacks foundation.

THE WITNESS: Sorry, Jake, I missed your comment.

MR. ZOLOTOREV: Yeah. Objection. Lacks foundation. And calls for speculation.

THE WITNESS: And the question was, what was my -- can you just repeat that?

BY MR. ZHU:

Q. How does your sales number compare with Crusoe?

MR. ZOLOTOREV: Same objections.

THE WITNESS: I presently, outside of rumors or what, I've seen publicly about Crusoe, I don't really know. I know that -- I can say that I know their systems are extremely expensive, partly due to their size. And they have disclosed some numbers on deployments. But I don't know what revenues sources they have. I don't know if they even sell equipment. I've never met anyone who has

bought a Crusoe system.

They seem to, maybe, have a different business model, such as they finance and own the equipment. So I don't know what their sales look like.

BY MR. ZHU:

Q. What about Giga, how does your sales number compare to Giga?

MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation.

THE WITNESS: I've met the Giga owners. I think even in one of the articles cited in my declaration, it clearly shows that they were a customer of ours. That's how they got their idea. I do know the owners. See them at certain conferences. But they've never disclosed to me their sales. So it's hard for me to -- I'd be purely speculating.

I think the article, though, if I recall reading, that article cited, it did say they were -- at some point when the article was written, I think it was 2022, they were on track for maybe 20 million in sales, or something, for the year.

But again, that's -- that's what I recall the article might have said. That's a CNBC article in my declaration. Yeah, I'd just be purely

speculating, really.
BY MR. ZHU:
Q. Is that 20 million number higher than yours?
MR. ZOLOTOREV: Same objections.
THE WITNESS: I mean, I can't say anything about Giga. 20 million USD revenue in a year for us, I would consider a good year.
BY MR. ZHU:
Q. Okay. What kind of marketing efforts do you guys make?
A. Well, I would say the main marketing that we've done that has been effective -- well, one, we've never had a real budget for it, but social media is really big. That's how -- that's how Crusoe came up with their stuff, probably, for social media. But social media is where I reach a lot of people.
The company does conferences. Networking at conferences is another one. And I would guess a huge part of marketing is meeting -- I just cited that Giga article. That article in my declaration, people like Giga find us, buy our products, deploy it, and then others find out about it. So, like, word of mouth is really big.
MR. ZOLOTOREV: Jay, when you're at a good

spot, maybe it's time for us to take a break.

MR. ZHU: Sure.

BY MR. ZHU:

Q. Do you have an idea how much you spent on marketing last year?

THE WITNESS: Well, I certainly can pull the numbers. I mean, the marketing expenses we have are generally -- because we don't -- we don't, like, pay a marketing agency. I don't have anything like that.

Last year, I don't know, I paid a web designer to update our website a bit. Conferences and travel for similar, and shipping for conferences is probably the bulk of the expenses. So probably at least 100, 200 -- somewhere between one and 200,000 maybe.

MR. ZHU: Okay. Let's take a break. Ten minutes?

MR. ZOLOTOREV: Yes.

(Recess: 6:10 p.m. to 6:21 p.m.)

BY MR. ZHU:

Q. Welcome back, Mr. Barbour.

Same question: Did you talk to your counsel during the break?

A. No, sir.

Q. So earlier we discussed that the first prototype you built, that was Hash Generator, right?

A. Yes. We call it a Hash Generator.

Q. When did you develop a Hash Hub?

A. I think I was developing it alongside that patent you previously cited, somewhere around 2020.

Q. Okay. So three years later than the Hash Generator, right?

(Reporter requested clarification.)

BY MR. ZHU:

Q. Three years later than the Hash Generator?

A. Well, yeah. I mean, we had other products, but the current Hash Hut with the effective configuration it has, the layout was somewhere around -- might have started in 2019, but it is approximately around the time of that patent.

Q. Okay. Why did you develop -- develop the Hash Hut in addition to the Hash Generator?

A. Well, one of -- maybe the main -- main reason is, as the company was growing, we brought in to the broader Bitcoin mining market, where, you know, people don't need a natural gas, or it's not at the source of natural gas.

And some of the features of the product were through learning in the field how to improve the

systems given, you know -- we basically had very little to -- to copy, I guess, or there wasn't much for robust systems for harsh environments.

Q. I see.

So is it fair to say you developed the Hush Hub to capture the product market, other than the -- you know, the natural gas market?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: Well, I was going to say the Hash Hut -- it's a product with that name, but the cooling system we talked about a bit before was developed to improve any of these systems we're applying in the oil field and otherwise.

BY MR. ZHU:

Q. I see.

What percentage of the Hash Hut were deployed as connected to a gas generator?

A. I was trying -- I was looking to see if I distinguish that in the declaration just to confirm, but I -- I don't know if I segregated that out of the total systems, which included the Hash Generator, so I'd have to try to sift that out of -- out of, you know, the records.

Q. Yeah, we don't need the exact numbers.

Is that the majority of the Hash Hut, or is that the minority of the Hash Hut?

A. Well, the Hash Hut is the name of a product. And, for example, earlier in the day, we looked at -- you had it on your screen, like, a blog post with a Mini Cube.

Q. Yeah.

A. That would say, as a system without an integrated generator in the closure, that would be comparable to a Hash Hut, so --

Q. Yeah.

A. -- basically systems -- generally systems were what I was trying to quantify, total systems.

Q. And would you say a majority of the Hash Hut were deployed as connected to a gas generator?

A. Majority of the Hash Huts we've manufactured and sold, just generally, at least in terms of quantity, maybe not power level, I would say is probably, yes, connected to a generator, and it can stream with combustible gas.

Q. Okay. Would you say more than 75 percent of the Hash Hut or so, that it's connected to a generator?

A. Well, really in the, I'd say, commercial success section of my declaration, more so is

focusing on embodied systems or, like, systems. I didn't really segregate out to that degree. I don't know off the top of my head.

Q. Okay.

MR. ZHU: Let me introduce a new exhibit. So this one was not marked before.

Court Reporter, can you please mark it as Exhibit 1027.

///

(Whereupon Exhibit 1027 was marked for identification.)

BY MR. ZHU:

Q. Title of the document is "Hash Hut."

Let me share my screen.

Mr. Barbour, have you seen this document before?

A. It appears to be a printout of our website.

Q. Okay. Any reason to doubt it's a printout from your website?

A. Yeah, I'm looking at my local copy. It appears to be, like, a recent version of the website.

Q. Okay. So in this document, we have a little brochure here, I guess, titled "Why our loadcenters outperform the competition."

And you listed eight different features,

right?

Do you remember this for sure?

A. Yes.

Q. Can you just explain it to me a little bit. What is "two layers of filtration"?

A. That would be relating to -- on a cooling side for the blockchain mining servers, we use a pre-filter, and -- what we refer to as a pre-filter and a primary filter. Which is more than what, say, someone who sells a competing product in terms of a portable Bitcoin mining enclosure or loadcenter might have.

Q. How is two layers beneficial?

A. Generally more filtration or filtration redundancy is useful. Yes.

Q. Okay. And explain a little bit "passive heat recirc for cold climates."

A. Probably, the word "passive" is referring to the fact that there's no additional heating systems beyond -- for example, in the Hash Hut, what the miners themselves are producing.

It sort of relates to the patent we filed around that cooling system that sort of details, like, you know, the spec, I guess, or some of the features of the Hash Hut where all of the heat comes

external to the building, which is difficult to achieve without doing it as per, like, that patented spec.

Q. I see. I see.

And this is just the '029 patent we looked at earlier?

A. I still have it opened. Was -- yeah, the '029, yeah.

Q. Okay. Next one says, "Positive air pressure for optimal cooling."

Do you know what that means?

A. Yes. Basically as the product evolved -- not just the Hash Hut, but just generally all of our products and learning what, you know, worked in the field and what issues to resolve.

One of the changes we made was to use supply fans instead of exhaust fans. And so what that's referring to is cold -- what's called a cold aisle or the cold intake into the mining servers --

Q. I see.

A. -- is operating at positive pressure -- should be operating at positive pressure relative to atmosphere.

Q. I see. I got it.

A. There are certain benefits to that.

Q. I see.

"Safe working space & emergency egress."

Is there any specific feature that guarantees a safe working space?

A. You know, one of the many iterations, one of the improvements was to improve the actual physical working space for a technician. Our prior versions were limited on space, which is never good. And then a lot of our competition -- or at least different containerized or portable Bitcoin mining systems are very unsafe.

Q. I see.

"Switchgear mains included."

So what are -- what are these?

A. That one would also be referring to the state of the industry where it's not uncommon for a customer to purchase, say, a Bitcoin mining container product from a third party, and it doesn't actually include, say, main breakers, for example.

And then so it just sort of clarified to the customer, like, they're getting good electrical protection with the product.

Q. I see.

So I notice this feature, you know, ensures, if something goes wrong voltage-wise or, you

know, frequency-wise, it can shut itself down. Right?

A. Not necessarily. It just sort of -- it's just that a lot of products we're competing with for certain applications, you know, people are importing or doing whatever, getting a product that -- that doesn't have main switchgear. That's really all that means.

Q. I see.

"Direct drive booster fans located in cold aisle never overheat."

Is there any reason this is beneficial?

A. Yeah. I mean, it's relating to some of the reliability problems you'll have in a cooling system for a portable blockchain mine, such as belt-driven fans where you're always replacing belts.

Moving back to that positive-pressure thing, moving the fan to the supply side instead of being on the hot exhaust of the blockchain mining servers enables the motor to, you know, not have thermal overload or anything like that.

Q. Yeah, that makes sense. Got it.

Next one is: "Variable speed drives optimize power usage."

Can you explain a little bit?

A. Yeah. Since -- when we -- when this was published and we did another version, like, more of -- it would be probably more of a new generation of the products, we decided to not offer these cheaper single-speed or just lower-quality fans and went to a better fan. And that --

We just made the decision to basically put these controlling fans into every product at that point going forward.

Q. I see. That makes sense.

And the last one is pretty self-explanatory. "Certified to national buildings and electrical standards"; is that right?

A. Yeah. I mean, we -- our stuff complies with national electric codes in Canada and the U.S. and might be labeled out of our shop as well.

Q. And these speakers apply to, I guess, both Hash Hut and Hash Generator?

A. There are differences in the product, but generally, for example, I don't think we -- I'd check my electrical team, like the Hash Generator, it's compliant with electrical code. But I'm not sure if we've updated the certification for it.

But generally, yeah, I guess you could say that it applies to both.

Q. I see. Makes sense.

So in your declaration, you stated: "The industry was venting or flaring gas unless there was a counterparty such as a gas line or electric grid connection to which the gas could be delivered."

This is in your declaration in paragraph 27.

What was your basis for this statement?

A. Yeah. I'm just going to quickly read it again. I've got it in front of me.

Q. Sure.

A. Yeah, I've read it.

Can you restate your question?

Q. What was your basis for this statement?

A. Are you asking the entirety of paragraph 27?

Q. No, just the sentence.

A. Yeah. Can you please repeat that so I'm clear?

Q. What was your basis for this statement?

A. I must not -- are you sharing the statement? Which statement, sir?

Q. Let me read it to you again.

You stated: "The industry was venting or flaring gas unless there was a counterparty such as a

gas line or an electric grid connection to which the gas could be delivered."

A. Right. Okay. I've got it highlighted.

So, yeah. What was the basis for this statement is your question?

Q. Mm-hmm.

A. That was my understanding -- is my understanding of the state of the art when I applied for this patent.

Q. So is this statement based on your personal knowledge?

A. Yeah.

Q. What do you mean by "counterparty"?

A. Effectively, someone willing to -- well, traditionally, here, you know, as I'm setting a gas line, I'm referring to, like, a sales gas pipeline as one aspect. And electrical grid connection, of course, I'm referring to, like, a utility. So the users that are actually demanding the energy through those counterparties is what I mean.

Q. I see.

I think earlier we discussed, you know, some drilling site that would employ -- generate a burst to power the oil facility, right?

Would you consider that as a counterparty?

A. Well, in the context of -- in the context of this sentence, if an oil company is venting or flaring, that's almost certainly because they're not -- that's in excess of any -- of that energy they could be using, say, on-site to prime -- to power the facility.

So if you understand what I'm saying, like, the context of -- oil companies don't vent or flare if they're already needing the gas for their own fuel systems, for example. They are already doing that.

Q. I see. That makes sense.

Were you aware of the MAGS system, M-A-G-S?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: You're asking was I aware of the MAGS, M-A-G-S, system at what point in time?

BY MR. ZHU:

Q. Let's say at the time of filing, 2017.

A. I do not believe I was.

Q. Do you remember when you first heard of the MAGS system?

A. I'm guessing it was either through Crusoe's petition or it might have been brought up in our examination. I honestly don't -- I don't remember. I can't -- I know that obviously it was in -- it's

related to this suit, but I don't know when I first heard about it. And I need to see it to even remember what it is.

Q. I see.

Have you ever heard of the reference Dickerson?

A. Yeah.

Q. When was the first time you heard about it?

MR. ZOLOTOREV: Objection. Compound question. Vague and ambiguous.

THE WITNESS: Dickerson, I really have no memory prior to this, I guess, citation in -- in this process made in the petition at some point.

BY MR. ZHU:

Q. Is it your opinion that there was a long-felt imminent need in the industry?

(Reporter requested clarification.)

MR. ZHU: Long-felt, unmatched need.

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: And you're talking -- are you asking me for Dickerson or for --

BY MR. ZHU:

Q. No, just based on your knowledge of the industry.

A. I would say, yes.
Q. And what is that long-felt, imminent need?
A. Well, I know -- and you're asking from the oil industry's perspective? Like, for -- for venting and flaring?
Q. You testified there was a long-felt, imminent need, right? I'm just asking: What is that need?
A. Well, since we were -- you just were talking about that other citation I had of venting and flaring, I mean, there's been a long long and felt need for finding ways to conserve associated gas, generally at a -- especially Upstream oil and gas facilities.
So that's been a problem around for -- I think we started the day off quite a long time, like, in -- sometime in the 1800s.
Q. And what is your basis for this?
A. The very existence of -- at least in the -- in terms of venting and flaring -- venting and flaring serves no useful purpose beyond safety control to release a potential energy.
So its very existence, wasting energy and all of the other problems, environment, safety, health, effectively, like, other regulatory

compliance issues that go with it, there's -- there's -- its existence implied a need.

Q. Are you aware that the MAGS system was deployed before the filing date?

MR. ZOLOTOREV: Objection. Lacks foundation. Mischaracterizes the evidence.

THE WITNESS: I believe the MAGS system -- I can't recite exactly how it works at this moment, but I know that -- or I understand that it was cited by Crusoe in their petition as relevant prior art.

BY MR. ZHU:

Q. Okay. Let's see.

So in your declaration in paragraph 30, you stated: "On the other hand, the Bitcoin mining industry believed that industrial mining required running miners at full hashrate and minimum downtime. Therefore, that industry only considered power sources such as hydro that could support this model."

Again, same question: What was your basis for this?

A. Okay. I found where you -- I thought you misspoke on paragraph 30, so I found it. Just give me a second. I'm just going to reread this paragraph.

Q. All right.

A. All right. Yeah, I've read it.

So please restate your question with this section -- this specific section in paragraph 30.

Q. "On the other hand, the Bitcoin mining industry believed that industrial mining required running miners at full hashrate and minimum downtime."

What was your basis for this?

A. Well, certainly at the time, I was conceiving of the invention and also researching the Bitcoin mining industry, that pretty much having reliable uptime was the key to pretty much everyone's advice on applying Bitcoin mining tech for a variety of reasons.

Why that was the mentality in terms of your -- in terms of specifically what you're talking about, like, the Bitcoin mining industry believed that miners required full hashrate and minimum downtime, that's still -- while it's different today, that is still an important aspect to Bitcoin mining.

Q. Is this also based on your personal knowledge?

A. Yeah. I mean, this is based on my present-day knowledge and from what I knew at the time of developing the IP.

Q. Yeah. The next sentence says: "Therefore, the industry only considered power sources such as hydrol to support this model."

Same question, right? Is this based on your personal knowledge?

A. Reliability was the -- applying Bitcoin mining to reliable, high-quality power sources, of course, that were also cheap was the prevailing market sentiment in the Bitcoin mining industry in around that 2017 time frame.

Q. Do you have any other authority, other than your personal knowledge, for this statement?

A. What do you mean by "other authority"?

Q. For example, have you read a book or published article that supported this statement?

A. Well, I'm saying in that 2016 -- when I incorporated, that was the number one -- I mean, there wasn't a lot published at the time. It was mostly forums, or maybe social media, although I don't think there was much activity -- too much activity. There was some social media platforms.

But, yeah, that was the -- I don't know what authority I could cite. That was pretty much anyone -- any research I could find was -- that was part of the status quo of Bitcoin mining.

MR. ZHU: Let me introduce a new exhibit into the chat. This was already marked, so you don't have to create a new one.

This is Exhibit 1016.

(Whereupon Exhibit 1016 was referenced for identification.)

BY MR. ZHU:

Q. Again, let me share my screen for this one.

Mr. Barbour, do you remember seeing this document before?

A. It appears to be a printout of a Reddit post that -- I have seen this before.

Q. Do you remember when was the first time you saw this?

A. I'm guessing it came up in examination of my patent. I can't remember perfectly, but probably at that point.

Q. Do I understand that the author was considering mining with natural gas?

A. Reading it here, yeah. I mean, it's in the title, and he's talking about cheap natural gas.

Q. So after seeing this, is it still your opinion that the industry only consider power sources such as hydro?

MR. ZOLOTOREV: Objection. Vague and

ambiguous. And calls for an expert opinion.

THE WITNESS: I don't know. I can't really speculate on the full scope of what this Reddit poster is contemplating. But there was, more or less, extreme -- extremely limited information, which I know from trying to do research on our product development, how to overcome the different challenges that we had to overcome.

So I don't even see in this disclosure here -- I don't see much in relating to any of the challenges we had to design around.

BY MR. ZHU:

Q. Okay. Let's go back to your dec. You stated -- this is paragraph 32.

"Notably, Giga's founders also described" --

(Reporter requested clarification.)

BY MR. ZHU:

Q. This was in your declaration, paragraph 32.

You stated: "Notably, Giga's founders also describe the idea of crypto-mining with stranded gas as an 'obvious solution' to them in 2019 after they purchased Upstream Data's system, three years after the '372 priority date."

A. Right.

So the question is what? Sorry.

Q. Why do you think they said, you know, it was an "obvious solution" to them?

MR. ZOLOTOREV: Objection. Lacks foundation. Calls for speculation.

THE WITNESS: I don't know why they specifically, you know, made that statement in that article, but they were -- I guess they -- I can't really speculate for sure, but I think even that article made clear that they only found out about our solution from someone who told them about us, which is why they called me.

But, you know, generally, this is three -- approximately three years after we filed our IP. So I don't even know if -- yeah. I mean, it's pretty clear, I think, that -- like, we were -- somehow they basically heard what we were doing.

BY MR. ZHU:

Q. Have you offered to license the '372 patent with Giga?

(Reporter requested clarification.)

MR. ZHU: The '372 patent.

THE WITNESS: At the present, no.

BY MR. ZHU:

Q. Let's see.

So is Giga still your customer as of today?

A. I'm not aware of Giga purchasing anything from us in recent, recent times. I would consider them a competitor.

Q. I see.

Okay. Let's take one more look at the '372 patent, Claim 1.

Let me share my screen here.

So they were a part of "a generator connected to the source of combustible gas to receive a continuous flow of combustible gas to power the generator."

What is your understanding of the term "continuous flow of combustible gas"?

MR. ZOLOTOREV: Objection. Calls for expert testimony and a legal conclusion.

THE WITNESS: Well, "continuous" as it relates to the problem we're attempting to solve. I mean, as the technology relates to the problem we're attempting to solve, such as preventing the waste and other issues relating to associated gas.

Associated gas, by nature, is continuous in the sense that you cannot shut it off unless you shut off the oil production. So specifically speaking of associated gas anyway.

BY MR. ZHU:

Q. Is natural gas from a sales gas line continuous?

MR. ZOLOTOREV: Objection. Calls for expert testimony and a legal conclusion.

THE WITNESS: I mean, sales gas, I guess, may or may not be considered continuous. Generally, gas has to be stored if it's not sold or conserved in some manner.

I'm not sure if this is best to be defined by our expert, but the differentiator is -- the differentiator between sales gas from a -- your residential gas line versus an Upstream-associated gas source is -- you can, as a consumer, shut off a residential gas line if you don't need it. At least, from your perspective, it's not getting wasted.

I don't know what happens upstream of that, but, yeah, from an associative gas, you can't shut it off unless you shut down the oil production.

MR. ZOLOTOREV: I apologize to interrupt. But it's 5:02 p.m., I think, where Steve is.

May I have the court reporter please give us the time on the record.

MR. ZHU: Let's go off the record.

(Recess: 7:03 p.m. to 7:18 p.m.)

MR. ZOLOTOREV: Jay, at this point, do you pass the witness?

MR. ZHU: Yes, I pass the witness.

MR. ZOLOTOREV: Thank you.

EXAMINATION BY MR.ZOLOTOREV

Q. Mr. Barbour, I just have a few follow-up questions.

If you can reference Exhibit 2010, which is Dr. You's second declaration. And in particular, I'd like you to take a look at paragraph 82.

A. One second. I'm just -- okay. I've got it here. I'm just going to open -- give me a minute.

Okay. Paragraph 82.

Q. Of Exhibit 2010.

A. Okay. I think I'm at paragraph 82 of Exhibit 2010.

Q. Okay. And the first sentence of Exhibit 2010, paragraph 82, states: "A miner such as the S9 (a mining processor) comprises..." and goes on from there, right?

A. Yes.

Q. Did -- when you were testifying today about the term "mining processor" as it applies to Upstream Data's products, do you recall counsel showing you Dr. You's opinion in paragraph 82?

A. No.
Q. And if you can just read paragraph 82 to yourself and let me know when you've done so.
A. I've done so.
Q. What is Dr. You identifying as a mining processor in paragraph 82 as it relates to Upstream Data's products?
A. It appears he's identifying the S9.
Q. And what -- and what is the S9?
A. The Antminer S9 shown in a picture below paragraph 82 consists of controller, Hash board's housing, rear fan, front fan. The Hash board's comprising a dedicated blockchain mining ASICS as well.
Q. Would this testimony by Dr. You as to what a mining processor is in the Upstream Data products, would that have been helpful to you when you were being asked about mining processor and Upstream Data's products?
A. Yes.
Q. Do you believe it would have clarified the questions that counsel was trying to ask you if you were aware of Dr. You's opinions in paragraph 82?
A. Yes. Might have been a little bit less confusing for me.

Q. And is Dr. You identifying an ASIC as a mining processor anywhere in 82?

A. Doesn't appear to me that the ASIC alone is -- he's identifying as the processor.

Q. Now the --

A. No.

Q. To your knowledge, the dedicated blockchain mining ASICS in a miner such as the S9, do they perform any function other than blockchain mining number crunching?

A. My understanding is that the ASIC chip is -- pretty much that's all they do.

Q. If I can direct you back to your declaration, Exhibit 2011, paragraph 24.

A. I'm looking at my declaration and paragraph 24, yes.

Q. Of the 284 systems embodying the '372 patent since 2020, how many would you estimate were various versions of the Hash Hut? A ballpark.

A. I couldn't really hear the last bit. Can you repeat the question?

Q. Yes.

Of the 284 systems embodying the '372 patent that Upstream Data has delivered since 2020, how many would you estimate were various versions of

Hash Hut, in a ballpark manner?

A. I would guess 30 to somewhere between -- 30 to 50 percent. But I would have to be able to clarify by checking the sales records.

Q. And you provide a figure of approximately 66 percent of the combined total that were deployed in multi-system configurations.

Do you see that in paragraph 24?

A. Yes, I do.

Q. And, again, just purely in that ballpark fashion, would that figure apply to Hash Huts?

A. It would. I mean, Hash Huts would be a subset of that number.

Q. So of 66 percent of -- is it correct that approximately 66 percent of Hash Huts sold since 2020 in systems embodying the '372 patent form the core of the multi-system configurations?

A. Well, that -- I think we discussed earlier some of the Hash Huts we sold were not included in this paragraph citing the delivered systems due to the uncertainty of the application of them.

So if you're asking of the approximate 219 systems deployed in multi-system configurations, I would guess that same percentage I mentioned -- I'd have to check, but maybe 30 to 50 percent were in --

might be in multi-system configurations.

Q. So does the 66 percent number apply to Hash Huts, or does it only apply to Hash Generators?

A. Well, the total delivered systems I cited of 284, that would have been in, like, the subset of 219, like, the 66 percent of both figures would be a mix of Hash Generators and Hash Huts.

I didn't -- I don't think I really differentiated -- or at least, I don't have committed to memory, like, how they relate, like, how many were Hash Huts versus Hash Generators, off the top of my head.

Q. But -- but I'm just asking from a ballpark perspective, as the head of the company knowledgeable with sales, in the 219 systems that were deployed in multi-system configurations, was the percentage of Hash Huts 30 to 50 percent?

A. I guess as a ballpark that might be right. It's hard to know off the top of my head, but ballpark may be in the region.

Q. Now, when Upstream Data delivers Hash Huts to a customer deploying the system in a multi-system configuration at a remote oil and well production facility, is it common for Upstream Data to assist the customer in connecting the Hash Huts to generator

and to Upstream gas source ultimately?

MR. ZHU: Objection. Vague.

THE WITNESS: As part of a sales process, it is common that we work with a client on the application.

You know, just as an example, if it's applied to a generator, say, that an oil company might have and want it reconfigured to connect to the Hash Hut, I mean, usually we'd be attempting to size the Hash Hut to match the generator.

But there's -- there's -- there's -- certainly we -- we have -- so we basically consult with them through the sales process, and then, upon delivery, where possible, we are actively engaged with the installation. We try to do it physically. In some cases, it's remote.

BY MR. ZOLOTOREV:

Q. In the multi-Hash Hut application, is it common for the Hash Huts to share a generator?

A. I would say the majority of Hash Huts that are delivered are usually paired with a generator that matches its size.

So for the systems where the Hash Huts are delivered, in a multi-system -- well, in a multi-system configuration, I mean, it might be

100 percent in the sense that they're commonly paired with the generator that matches them.

I am aware of -- I think there's been a few customers that, just given, maybe, different circumstances, applied one bigger generator to two smaller Hash Huts, in which case that was probably just considered one system.

Q. So in a multi-system configuration where there's multiple Hash Hut units, whether or not they are all in one bigger enclosure or segmented into smaller enclosures, is it common for them to share a generator, like --

MR. ZHU: Objection. Vague. Leading the witness.

THE WITNESS: Generally, the Hash Hut, it's optimal to size it -- well, when we're not supplying the generator, usually if they have no generator, we're building the generator into the Hash Generator system.

But if there's a reason why they want to apply and reconfigure an existing generator they might own, at least usually, in my experience, it's a single Hash Hut to a single generator.

Especially, say, in Canada, where they have an abundant of smaller engines that we might

reconfigure into generators for them.
BY MR. ZOLOTOREV:
Q. If I can direct your attention to Exhibit 1027.
A. Okay. I got it open.
Q. Okay. And the front -- the very first page has an illustration.
What does that illustration show?
A. Well, the Hash Hut -- so the reason we sort of describe it as modular is -- and I guess one of the marketing sales over alternatives from competition is that the same module, which is as low as 90 kilowatt, can be that subset of the Hash Hut. That module can be built out into a variety of sizes.
So that rendering at the top of the document shows a number of different sizes. So, yeah, the Hash Hut is sized differently depending on what the customer needs.
Q. Okay. Would you consider each module a system?
MR. ZHU: Objection. Vague.
THE WITNESS: The way I refer to modules in a Hash Hut is effectively one rack, one fan, and then that just -- we effectively duplicate that to build the final Hash Hut product.

So when I say 90 kilowatt is the smallest and say, for example, a 900 kilowatt is ten times as large, it would still be one -- at least using what I'm describing as a module is a subcomponent of a Hash Hut, and it's -- it's sized based on -- the full Hash Hut might have many sub modules within it.

And then, of course -- well, as a system, it would be paired to a generator and that source of gas.

BY MR. ZOLOTOREV:

Q. So if we, let's say, consider the largest Hash Hut shown in this image, the front page of Exhibit 27, how many -- how many Hash Hut modules does it have?

A. That largest module -- I created that -- I personally created this render. That largest module was -- the actual largest we actually have sold is the second-largest one, the one behind that big long one. That's a 900 kilowatt.

And when I made this render, we were about to offer a version slightly over 2 megawatts, or 2000 kilowatts. And this particular one has -- in the render, has -- is it -- yeah, 2490-kilowatt modules that make up the full Hash Hut. But it's --

Q. What -- I'm sorry. I cut you off.

A. I just added we didn't put that one into production yet. We modified sort of the marketing plan and sales plan for the size.

Q. What would you say is the most popular Hash Hut configuration in terms of the number of modules that you've -- that you've sold?

(Reporter requested clarification.)

BY MR. ZOLOTOREV:

Q. What would you say is the most popular Hash Hut configuration in terms of the number of modules that you've sold?

A. Pretty much our smallest version. But I should clarify, I said the smallest being 90 kilowatt, at least for the present product line.

We also delivered, prior -- you know, in the earlier version of the current Hash Hut product line, we delivered several Hash Huts that -- that basically, like, for example, one SKU of them could have two generators connected to it as one single Hash Hut on separate electrical systems. Sort of like independent electrical systems.

So two independent generators not in parallel powering one Hash Hut, and each powering one half of it.

So loosely, the answer is the smallest size

is the most widely deployed Hash Hut that would be in the oil field.

Q. And what would be the second most popular?

A. Second most for the oil field applications, at least for present product size, it would be in the range of the 180- to 360-kilowatt rated load.

Q. So would that be a two-or three-module Hash Hut?

A. It would be a two- or a four-module Hash Hut. Yeah.

Q. And in a multi-system installation of, let's say, a two-module Hash Hut, both modules would be --

MR. ZHU: Objection. Mischaracterizing the witness's testimony.

MR. ZOLOTOREV: Well, I haven't even finished yet. Let me -- let me rephrase it.

MR. ZHU: Yeah.

BY MR. ZOLOTOREV:

Q. Let's say you have a two-module Hash Hut installed in an oil -- in an oil field.

Would both modules be connected typically to a shared generator?

A. At the -- at the present, in terms of what we market, any Hash Hut we sell, generally, will

require either a single generator, or if there's multiple generators feeding in, it would have to be parallel.

The technical reason for that is the very few Hash Huts, or the relatively few Hash Huts we sold that I'm aware that there was multiple generators feeding it independently, that was in an earlier version that the electrical setup was extremely simple.

For example, we weren't using -- well, some of the things Jay had brought up with the features of the Hash Hut, which are, I believe, in this exhibit -- yeah, the next section: "Why our loadcenters outperform the competition." Several of those features say, "Switchgear mains included." The variable speed drives, they were missing from some of the earlier applications.

So at present, normally a single Hash Hut is paired with either a single generator or multiple generators, but the generators are configured in parallel. Which, presently, we don't offer, but that's -- could be a client situation with their own generators.

BY MR. ZOLOTOREV:

Q. Okay. So a two-module Hash Hut, would that

Hash Hut typically be connected to a single generator?

A. Typically, yes. A two-module Hash Hut just being what we call a 180-kilowatt Hash Hut would typically be paired with a single generator.

Q. And is it -- is each module effectively an independent system that's effectively paralleled when there are multiple modules in an enclosure?

A. The present product, what I refer to as "single module" being that single rack and single fan, we pre-build them, but when they get assembled into the -- we pre-build the subcomponents, but when it gets assembled into the Hash Hut as a final product, they typically, pretty much exclusively at the moment, share the same power distribution system.

Or at least to a -- to a degree, there are -- depending on the Hash Hut size, we may still have two main switchgear -- like, say, the 900-kilowatt has two main switchgear panels. Normally they are connected to the same power source, but they can be disconnected into two different power sources if the customer requires.

Q. In a -- in a typical Hash Hut installation, if there is more than one suitable generator available on-site, is there any provision to

fail-over generators, for example?

Where, for example, a full-on generator goes down, the Hash Huts are reconnected to another generator?

A. In cases where customers, which typically would be U.S. customers, have or are supplying their own generator, they might have -- they'd be parallel so that there is some fail-over ability.

Although the application of that is probably less frequent generally because, because we can build them so modularly, we try to run them independent on -- matched to independent generators simply because we've always viewed -- like, I've always viewed that to be the most practical approach depending on the application.

Q. In a typical Hash Generator application, in a multi-Hash Generator system, is there any provision for cross-connecting generators between units? For example, for the purpose of, if one fails over, there is at least some electrical power available?

A. At the present, Hash Generators sold are mostly -- had mostly been sold for dedicated Bitcoin mining reasons. One thing we are developing is -- is just something we just haven't been doing in-house. We haven't been building generators with the parallel

control systems because there is no need to because the generators are typically matched to the load size for it within a Hash Generator.

But we have been engineering our same product to be now parallelable with other generators, not just because, broadly, the product would become more broad at that point. Like, the product could then be used to match with other vendors, generators, and parallel, and they can leave the Bitcoin mining off, for example, if they are utilizing the product for a different application.

Q. In your view as the inventor and the CEO of Upstream Data, how much of the Hash Hut success in the marketplace can be attributed to -- to the '372 patent?

A. Well, I would say --

MR. ZHU: Objection. Vague. Calls for a legal conclusion.

THE WITNESS: What was that last bit, Jay? Calls for a --

MR. ZHU: Calls for a legal conclusion.

THE WITNESS: I would say it's hard to say for sure, definitely a significant factor in the Hash Huts' product success. Certainly the smaller buildings are most predominantly shipped for oil and

gas applications that I believe would be practicing the patent.

BY MR. ZOLOTOREV:

Q. Let me ask it, then, a little differently.

Of the Hash Huts that are shipped for oil and gas use, just setting aside any other uses of the Hash Hut, for those systems, how important is -- is the fact that they embody the '372 patent, in your view, to their success in the marketplace?

MR. ZHU: Same objection. Vague. Calls for a legal conclusion.

THE WITNESS: I'm not sure I'm understanding your question, Jake. Can you just repeat it, please?

BY MR. ZOLOTOREV:

Q. Yeah.

Setting aside Hash Huts that are not installed in an oil and gas Upstream facility, just setting those aside, do you view the '372 patent as an important factor in the commercial success of the Hash Huts?

MR. ZHU: Same objection. And I'll add calls for expert testimony.

THE WITNESS: I believe the Hash Hut, as a product, certainly applied to the system that the --

that is practiced by the patent is definitely an important consideration.

But there's also the development of the product through the application of the product in this app- -- you know, in the practice the patent was what -- basically all of the uncertainties and design challenges we overcame over time is also part of the product -- as a Hash Hut, a product success in the oil field as part of a practicing patent.

BY MR. ZOLOTOREV:

Q. And let me ask you the same question about Hash Generator, with all of its iterations since you started. And, again, setting aside anything that may be done in a different type of installation.

But do you view the '372 patent as an important factor in the commercial success of the Hash Generator?

MR. ZHU: Objection. Vague. Calls for expert testimony. Calls for a legal conclusion.

THE WITNESS: I believe the patent is -- the technology it teaches is quite important for the commercial success.

BY MR. ZOLOTOREV:

Q. If I can take you now to the second page of Exhibit 1027.

Do you see there's the eight various features that you discussed with counsel previously?

A. Yes.

Q. When compared to the importance of the '372 patent to the product's commercial success in the marketplace, would you say these features are as important, less important, or more important?

MR. ZHU: Same objection.

THE WITNESS: I would have to say -- it's hard for me to understand the product as applied is -- correctly is practicing the patent. But we market our products on the product, not on the application of the product, but -- which practices the patent, but we don't market the patent, so maybe I'm unclear.

But our products drive our sales, and then the application of the product is -- is an important part of, you know, practicing the patent. I guess I'm not -- you know, I'm not fully certain of what your question is asking.

BY MR. ZOLOTOREV:

Q. Do you have any reason to believe that these eight features on this page are more important to the commercial success of the products that practice your invention sold by Upstream Data since the beginning when the company started, and through

today, than the -- than the '372 patent?

A. I -- we -- we sold products without some of these features -- a lot of these features. So I would guess that the product success -- if we're just talking broadly about whole systems as a whole, the newer version of the product didn't have a huge impact on the prior commercial success. But it's adding to the present commercial success.

Q. I can take you now to Exhibit 1025.

A. Yes, I have it in front of me.

Q. And is that the '029 patent that you previously discussed with counsel?

A. Yes.

Q. If I can take you to Claim 1.

A. To Claim 1. Yeah, one second.

All right. I'm at Claim 1.

Q. Do you recall discussing with counsel whether Upstream Data products, or some products, practiced the claims of the '029 patent?

A. I vaguely recall, yes.

Q. In terms of the relative importance to the success in the marketplace of Upstream Data's products, do you have any reason to believe that the '029 patent is more important than the '372 patent?

MR. ZHU: Objection. Vague. Calls for a

legal conclusion. Calls for expert testimony.

THE WITNESS: Well, the '029 -- I'm going to scroll up. I think that's the number.

Yes. That's right. The '029 patent, I mean, we didn't deploy any prior to its invention, somewhere around that 2019/2020 time frame. I didn't reference the -- again, going off recollection.

I could -- well, it wouldn't have had any impact on any time prior to that. It would have had an impact after in terms of just improving the systems to -- yeah, so I think I answered your question.

BY MR. ZOLOTOREV:

Q. Were Upstream Data's products embodying the '372 patent, in your view as the CEO and the inventor, commercially successful before the '029 patent invention?

A. Yes.

Q. And what is your basis for saying that?

A. Prior to the '029 patent and the development of that tech, we were seeing commercial success, some of which -- well, as I cited in our -- in my declaration, the other consideration, just knowing what I went through growing the company, was, you know, after 2020 or to what industry acceptance

and understanding and -- from the oil industry today is vastly different than in the past, like, especially before 2020.

So, yeah, I mean, the commercial success, I think, was pretty clear before the '029 patent, generally.

MR. ZOLOTOREV: Thank you. I will reserve time for any re-redirect, if there is any recross, and with that, I'll pass the witness at this time.

RECROSS-EXAMINATION BY MR. ZHU:

Q. All right. Mr. Barbour, so earlier you and counsel discussed, regarding Claim 1, you know, the meaning of the term "processor" in Claim 1, right? Do you remember that?

MR. ZOLOTOREV: Objection. Mischaracterizes prior testimony.

THE WITNESS: Yeah. I was going to ask you to clarify. You're asking about my counsel being Jake, right?

BY MR. ZHU:

Q. Yes.

A. Okay. So just restate it again.

Q. Do you remember discussing with your counsel the meaning of mining processor in Claim 1?

MR. ZOLOTOREV: Objection. Misstates his

prior testimony.

THE WITNESS: I recall, through looking at this subsection in Dr. You's, our expert's, exhibit, we had a discussion on that.

BY MR. ZHU:

Q. So does that change your earlier testimony on the meaning of the term "mining processor"?

A. Well, I know we spent quite a lot of time on that question line. Generally, I was attempting to defer to doctor -- some -- some clarifications by Dr. You, which I wasn't clear on. So I'm not -- maybe if you recite certain testimony, I could better answer that.

Q. So is it your opinion that the mining processors in your commercial product, meaning either the Hash Hut or the Hash Generator, are referring to the mining servers?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert opinion.

THE WITNESS: Generally, I'd agree with -- in Exhibit 2010, Dr. You's declaration, Section 82, where he clarifies a miner such as the S9, a mining processor is a mining processor.

BY MR. ZHU:

Q. So you are saying the mining processors in

the commercial products are actually the mining servers, for example, the S9 miner; is that correct?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I would agree with Dr. You's declaration. A miner, which I also refer to as a mining server, such as an S9, is a mining processor.

BY MR. ZHU:

Q. So do you understand the mining server, such as S9, also include ASIC processors within?

(Reporter requested clarification.)

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I generally understand that a miner, such as an S9, does have subcomponents such as Hash boards with ASIC chips.

BY MR. ZHU:

Q. So do you understand the ASIC chips are also processors?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: The best way I can recite my understanding is sort of what is clarified by Dr. You's Section 82. Some of -- for context in the industry, terms are thrown around, like ASIC,

referring to the complete miner. I've used that plenty.

So there's a lot of uncertainty on given terms, just generally -- generally speaking. But I think -- I think Dr. You's declaration is probably a definitive definition.

BY MR. ZHU:

Q. So if that is the case, do you change your earlier testimony regarding what the blockchain mining devices are?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I don't know what specific testimony you're referring to, but, sort of, like, I think I answered all those questions earlier in the day. I pretty much have at least deferred to Dr. You's expertise on some minutiae, some definitions.

BY MR. ZHU:

Q. So now that you've said the mining processors are the mining servers, can the mining devices also be the mining servers?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I don't -- I'm not sure how

to answer this. Feels like we're just going in circles on it.

BY MR. ZHU:

Q. What, in your mind, is a mining device in your commercial product?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: My commercial product is something that we manufacture, like a Hash Hut, and it comprises mining servers. That was generally what I was trying to articulate before, but, I mean, I can defer back to my declaration again, or Dr. You's declaration.

BY MR. ZHU:

Q. So is it still your opinion that single -- single-device deployment meets Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. And calls for a legal conclusion.

THE WITNESS: Generally, I believe Hash Hut products with the other subcomponents and applied to a generator, you know, to a natural gas source may comprise a system that practices Claim 1.

BY MR. ZHU:

Q. So what are the plurality of blockchain

mining devices in that single system?

MR. ZOLOTOREV: Objection. Asked and answered repeatedly. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Actually, I haven't reviewed Dr. You's declaration. Generally, there is a plurality of blockchain mining servers in a given system.

BY MR. ZHU:

Q. So are you saying the plurality of blockchain mining devices are the plurality of mining servers?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I really don't know where to go with this question line.

BY MR. ZHU:

Q. I'm simply asking you a question.

A. Yeah, I'm -- I defer to Dr. You's declaration on the --

Q. Do you refuse to answer that question?

MR. ZOLOTOREV: Objection. Badgering the witness. The question has been asked and answered repeatedly.

THE WITNESS: I would guess there -- there

is plenty on the record for -- for you to go by. I feel like half the day has been that, so...

BY MR. ZHU:

Q. So do you refuse to answer that question?

MR. ZOLOTOREV: Objection. Badgering the witness. The question was asked and answered repeatedly.

THE WITNESS: I'm not refusing. I think it's been answered.

BY MR. ZHU:

Q. It's a simple "yes" or "no" question.

Are the blockchain mining devices the mining servers in a single deployment?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: I've got Dr. You's declaration here. I guess I'll see if there's any insight.

I'm reading Dr. You's declaration, Section 83. I'm just reading it aloud. Actually, it's -- I'm not sure how to answer your question without deferring to Dr. You's testimony.

BY MR. ZHU:

Q. Do you not have an opinion about the

blockchain mining device's, in Claim 1, art in your commercial product?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Let me refer to my exhibit again, or my declaration.

I mean, as I said in the declaration, I mean, Section 13, the Antminer S9 miner is applied to limitation 1c_i. So it comprises the blockchain mining device.

BY MR. ZHU:

Q. Sir, what was your question -- I'm sorry, what was your answer?

Should I repeat the question?

A. Read your question -- I'm reciting my declaration being -- we are -- you know, Section 13: "Each Upstream Data system such as a Hash Generator or a Hash Hut houses a number of blockchain mining servers" --

(Reporter requested clarification.)

THE WITNESS: Section 13 of my declaration: "Each Upstream Data system such as a Hash Generator or a Hash Hut houses a number of blockchain mining servers - shown in the next screenshot are racks of blockchain miners inside the enclosure, in this case

the Bitmain Antminer S9," referring to limitation Claim 1c_i.

You know, my interpretation of -- I'm not an attorney. My interpretation of patent -- we have -- patent interpretation is limited, so that appears to be consistent with Dr. You's declaration. It's per his Section 82, but --

BY MR. ZHU:

Q. Again, my question is very simple: What are the mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: The device, such as our product, is comprised as part of the device which houses blockchain mining servers. I believe that's the answer I've given previously.

BY MR. ZHU:

Q. I'm sorry. What are the mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

BY MR. ZHU:

Q. Because in that sentence, you're referring to two different things, right? One is, you know,

the entire Upstream Data system such as a Hash Generator or a Hash Hut. Another different thing are the blockchain mining servers.

Which of these two things are you using as blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: It's -- I don't know how to answer the question without deferring to Dr. You. And, I mean, it's -- or his testimony, at least, because blockchain mining server to be connected to a generator does require a product such as products being manufactured, such as a Hash Hut, or at least to be feasible. So, yeah, I don't know how else to answer your question.

BY MR. ZHU:

Q. So is it still your opinion that a single deployment of a Hash Generator embodies Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Misstates prior testimony. Calls for expert testimony.

THE WITNESS: A single deployment of a Hash Generator includes -- as a system, includes a source of gas, the generator, and the product comprises

blockchain mining servers. So...
BY MR. ZHU:
Q. Does that embody Claim 1?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.
THE WITNESS: I don't know what other clarity to add.
BY MR. ZHU:
Q. It's a "yes" or a "no" answer.
Do you think that embodies Claim 1 or not?
MR. ZOLOTOREV: Objection. Vague and ambiguous.
THE WITNESS: Does what?
BY MR. ZHU:
Q. Does a single deployment of a Hash Generator?
MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.
THE WITNESS: A Hash Generator is a product. We have numerous products that practice the invention, so the system has to comprise what is explained in Claim 1.
BY MR. ZHU:
Q. Is that a "yes"?

MR. ZOLOTOREV: Objection. Misstates testimony. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I generally don't know -- don't understand, so...

BY MR. ZHU:

Q. So do you not have an opinion of whether a single deployment of Hash Generator practices Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: A single deployment in what circumstance? To where?

BY MR. ZHU:

Q. A single deployment connected to a gas generator at an oil field.

MR. ZOLOTOREV: Same objections.

THE WITNESS: I'm looking at doctor's -- Dr. You's declaration for clarity in interpreting your question. Just give me a minute.

Let me -- my declaration, I do not recall or -- looking through it -- let me check.

I don't use the term "device" in the declaration. Dr. You -- just reading from his

declaration, Section 80: "Each Upstream Data blockchain mining device such as a Hash Generator or a Hash Hut houses a number of mining processors - shown in the next screenshot are racks blockchain mining" -- I'm sorry, "blockchain miners inside the enclosure, in this case Bitmain Antminer S9 ASIC miners."

All right. Then that next or later section, 82, Dr. You is clarifying that: "A miner such as an S9" is a miner processor that is consistent with Section 80.

And Upstream Data, just deferring to his declaration, an Upstream Data blockchain mining device can be a Hash Generator or Hash Hut comprising -- generally called Bitcoin servers, and Dr. You's clarifying as mining processors.

I think that answers your question.

BY MR. ZHU:

Q. Well, my question is whether a single deployment of a Hash Generator practiced Claim 1. Is that a "yes"?

MR. ZOLOTOREV: Objection. Mischaracterizes testimony. Vague and ambiguous. Asked and answered repeatedly. And calls for expert testimony.

THE WITNESS: I don't use the term "device" in my declaration. And I think Dr. You's declaration appears to add any clarity required. So is it not an answer to defer to his expert testimony?

BY MR. ZHU:

Q. So do you not have an opinion on that?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: My understanding is I'm not -- not that I understand the differences, but I'm the inventor. I'm not -- I don't believe I'm being cited as an expert opinion -- an expert with an opinion.

BY MR. ZHU:

Q. Well, you submitted a declaration saying that the Hash Generator practices Claim 1, right? Is that correct?

A. And I -- I have submitted that declaration. I don't know if in the declaration we are specifying between single -- in the case of a Hash Generator or multiple or -- because a Hash Generator comprises a system that practices the patent, so --

Q. That's why I'm asking the question. Right? Because you didn't specify it as a single deployment or multi -- multi deployment.

A. We have -- well, I believe the declaration clarifies on systems. I don't -- I don't think I'm using the term "device" in the declaration, so I'm deferring to Dr. You for his opinion on clarifying that.

Q. That's interesting because Dr. You is relying on your declaration for whether your commercial product practice Claim 1 or not, right?

MR. ZOLOTOREV: Objection. The question is misleading. Mischaracterizes the documents. Mischaracterizes testimony. And is argumentative.

THE WITNESS: Yeah, I don't know if that's an accurate summary. I think it appears that Dr. You's declaration clarifies some of the terms you're requesting clarification for.

BY MR. ZHU:

Q. And do you know what Dr. You's opinion is on that?

MR. ZOLOTOREV: Objection. Vague and ambiguous.

THE WITNESS: I generally don't have intimate knowledge of Dr. You's opinion.

BY MR. ZHU:

Q. What's your basis for saying he clarified that?

A. I'm basically referring to Dr. You's declaration right now in this question line.

I didn't -- like I said, I mean, I don't recall, and I've searched the document. I don't know if I'm using the word "mining device." Doesn't appear to be. Dr. You just, maybe, just referring to -- this is the first time I've seen his declaration, at least recently.

You know, I recited Section 80 where he's talking about device. So that's what I'm trying to defer to his expert testimony on, giving you the clarification you need.

Q. So do you stand by your testimony that the Hash Generator practices Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony. Calls for expert opinion.

THE WITNESS: I stand by my declaration, and for whatever clarifications Dr. You's declaration provides, I defer to that. Not sure how else to answer the question.

BY MR. ZHU:

Q. Well, let me just read your declaration word by word.

This is from your declaration, paragraph

10. "In my understanding, Upstream Data systems, such as the Hash Hut and Hash Generator (from the present to the 2017 prototype), embody claims 1 and 24 of the '372 patent."

Do you still stand by that statement?

A. Yes.

Q. So what are the blockchain mining devices in the Hash Generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: In that same declaration, my comments in Section 13. Yes, 13 is the first part that recites the limitation 1c_i, where the device is being referenced from the patent application. So that's -- I guess my statement is the Section 13 onward.

BY MR. ZHU:

Q. So, again, Section 13 mentions two different things, right?

One is the entire Hash Generator; one is a number of blockchain mining servers.

Which of those two things are you using to satisfy the claim limitation blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and

ambiguous. Asked and answered repeatedly. And calls for expert testimony.

THE WITNESS: At least from what I read from our expert's testimony -- or -- I don't know if that is the same thing as a declaration, but Section 80, "Each Upstream Data blockchain mining device" --

(Reporter requested clarification.)

THE WITNESS: Yeah, I'll just -- I'll restart.

Well, Section 80 of Dr. You's declaration, just reciting it: "Each Upstream Data blockchain mining device such as a Hash Generator or a Hash Hut houses a number of mining processors" -- which he is also clarifying as, like, an Antminer S9, what I've generally referred to as a Bitcoin mining server or Bitcoin miner in my declaration.

So, I mean, I don't think I've commented on -- in the declaration on the device. So my opinion is deferred to his, which, if I'm interpreting his Section 80, each blockchain mining device, such as a Hash Generator, houses a number of mining processors, which I think earlier in the day I was saying one of our products comprises Bitcoin mining servers when you're inquiring on the device terminology.

BY MR. ZHU:

Q. Are you saying the entire Hash Generator is a blockchain mining device?

MR. ZOLOTOREV: Objection. Vague and ambiguous. And calls for expert testimony.

THE WITNESS: Hash Generator -- I mean, fundamentally, a Hash Generator, as a product without Bitcoin mining server present, cannot mine Bitcoin. And I'm guessing this is consistent with -- for Dr. You's Section 80, just reciting that as I did. Product is a device housing a number of mining processors, or what I think he's clarified to be, like, Bitcoin mining servers like Antminer S9s.

BY MR. ZHU:

Q. So are you saying the Hash Generator may or may not have mining servers within them?

A. Well, the product has no function. I mean, a Bitcoin mining server must be included in the system. If it's empty of mining servers, then it wouldn't be mining Bitcoin. So -- so it's -- it's fundamentally one or more servers have to be -- which is generally going to be more than one -- would have to be within a Hash Generator, for example, for it to function.

Q. So let me go back to your testimony.

Are you saying the prototype you built back in 2017 also practices Claim 1?

A. The prototype as applied into the system I believe does, yes.

Q. What are the plurality of mining devices in that prototype?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Well, our prototype was part of a system comprising a natural gas source. The product itself had an integrated generator, and then there was Bitcoin mining servers also housed within.

BY MR. ZHU:

Q. So what are the blockchain mining devices in that prototype?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: My declaration doesn't cite device for -- in this context, so I'm -- I'm deferring to Dr. You's expert testimony. And all I have in front of me is his declaration, which I can repeat again, in Section 80.

BY MR. ZHU:

Q. So are you saying, aside from Dr. You's declaration, you don't have any independent opinion

about what the blockchain mining devices are?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. Asked and answered.

THE WITNESS: I don't know if I have an expert opinion. I have a practical -- one of our products, like a Hash Generator, requires generally multiple Bitcoin mining servers within it to function as the Bitcoin mining, for the blockchain mining system at an oil and gas facility.

BY MR. ZHU:

Q. So are you saying those multiple mining servers are the blockchain mining devices in Claim 1?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Asked and answered repeatedly. Calls for expert testimony.

THE WITNESS: I mean, again, I'm just getting clarification from Dr. You's declaration, and what we manufacture is part of the device. Like a Hash Generator or a Hash Hut is part of a device that houses a number of mining processors or Antminer S9s.

BY MR. ZHU:

Q. What are the blockchain mining devices?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Asked and answered repeatedly. Calls for

expert testimony.

THE WITNESS: "Each Upstream Data blockchain mining device, such as a Hash Generator or Hash Hut, houses a number of mining processors."

BY MR. ZHU:

Q. I understand that the Hash Hut or Hash Generator houses a number of mining processors.

I'm asking whether there are multiple mining devices in the prototype of Hash Generator.

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I still don't know how to answer it, but, I mean, if I had to -- if I can't defer to expert testimony, I mean, a Hash Generator is a mining device. Of course, it comprises the mining servers.

BY MR. ZHU:

Q. Are the mining servers mining devices as well?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: My understanding is they comprise the mining device along with the product, like a Hash Generator.

BY MR. ZHU:

Q. Well, you drafted this patent, right?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes testimony.

THE WITNESS: I am the inventor of the patent.

BY MR. ZHU:

Q. Did you draft the patent?

A. I'm responsible for the patent spec and the invention. I participated in the drafting of the patent.

Q. So do you have an understanding of the term "blockchain mining device"?

MR. ZOLOTOREV: Objection. Asked and answered repeatedly. Calls for expert testimony.

THE WITNESS: I'm saying our product comprises a blockchain mining device.

BY MR. ZHU:

Q. Your product meaning the Hash Hut or the Hash Generator?

A. For example, the Hash Generator.

Q. Let me get this right. So you're saying a Hash Generator comprises a blockchain mining device; is that correct?

MR. ZOLOTOREV: Objection. Vague and

ambiguous. Calls for expert opinion.

THE WITNESS: Again, each -- "Each Upstream Data blockchain mining device, such as a Hash Generator or Hash Hut, houses a number of mining processors."

Hash Generator -- I don't know how to define it. It's part of the mining device.

BY MR. ZHU:

Q. So you just said two different things, right?

Earlier you said the Hash Generator comprises a mining device. Later you said a Hash Generator is a part of the mining device.

Which one of those are correct?

MR. ZOLOTOREV: Objection. Mischaracterizes his testimony. It's vague and ambiguous. And calls for expert testimony.

THE WITNESS: English may be not my forte. What's the difference between "comprise" and -- as a part of -- or the other thing I said?

BY MR. ZHU:

Q. So do you think a Hash Generator contains a blockchain mining device?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: I'm getting -- I don't really know -- the question -- I'm not sure how to answer your question for you.

BY MR. ZHU:

Q. Do you not have an opinion of what a blockchain mining device is?

MR. ZOLOTOREV: Objection. Asked and answered repeatedly, to the point where this is just badgering the witness. Calls for expert testimony.

THE WITNESS: I didn't state "blockchain mining device" in my declaration, so I'm trying to give you clarity by referring to Dr. You's declaration.

"Each Upstream Data blockchain mining device, such as a Hash Generator...houses a number of mining processors."

So a Hash Generator is -- comprises or is part of the device.

BY MR. ZHU:

Q. And either one of those two can be true, right? It either comprises or it is a part of a mining device.

A. Maybe my understanding of those two words are different. So what's -- it's been a long day.

What does "comprise" mean? Shall I Google

it?

MR. ZOLOTOREV: Jay, I'm going to tolerate this for a little while longer. But at some point, we'll have to seek a protective order because this is now degenerating into repetitive questions that are abusive to the witness and are premised on your misunderstanding that the witness is not testifying in an expert capacity or offering opinions. I would --

MR. ZHU: Well, the expert --

MR. ZOLOTOREV: I'm just going to state this for the record once, and in a few minutes, we're going to have to adjourn this and seek a protective order.

MR. ZHU: That's totally fine.

BY MR. ZHU:

Q. So, Mr. Barbour, is it correct you testified that the Hash Generator embodies Claim 1?

A. Hash Generator is a product we manufactured. It's a part of a system which is described by Claim 1. So -- which I probably stated 50 times today.

Q. And is that a "yes," or is that a "no"? Does the Hash Generator embody Claim 1?

MR. ZOLOTOREV: Objection. Asked and

answered repeatedly. It's badgering the witness. It's vague and ambiguous. And calls for expert testimony.

THE WITNESS: I don't know if you're just trying to get me to say different things.

A Hash Generator is a product we design and manufacture. I would agree with Dr. You's statement that it's a blockchain mining device that houses a number of mining processors, which I believe he's referring to Antminer S9s. I normally call them mining servers or miners.

And the Hash Generator is a product. If you just throw it on a truck and it sits in your backyard, it doesn't do anything. As comprised as part of a system that I believe Claim 1 articulates, the source of gas and a generator, which that Hash Generator has integrated the system -- as part of a system, it practices Claim 1.

BY MR. ZHU:

Q. Do you understand the system in Claim 1 requires multiple blockchain mining devices connected to one generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Mischaracterizes the evidence. Calls for expert testimony.

THE WITNESS: I don't -- I don't exactly agree with your statement, but I can read Claim 1 out loud, if you want.

BY MR. ZHU:

Q. I'll read it for you.

So Claim 1 requires: "Blockchain mining devices connected to the generator."

Can you answer the question now?

MR. ZOLOTOREV: I'm sorry. There's -- I don't think there's a question pending.

BY MR. ZHU:

Q. My question is: Does Claim 1 require multiple blockchain mining devices connected to one generator?

MR. ZOLOTOREV: Objection. Mischaracterizes the evidence. Vague and ambiguous. And calls for expert testimony.

(Reporter requested clarification.)

MR. ZHU: I'm just asking Mr. Zolotorev what evidence that I'm mischaracterizing.

MR. ZOLOTOREV: The patent, for example.

MR. ZHU: I'm simply asking a question.

MR. ZOLOTOREV: You can do that.

BY MR. ZHU:

Q. All right. Mr. Barbour, does Claim 1

require multiple blockchain mining devices connected to one generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony.

THE WITNESS: Does Claim 1 -- I don't have it in front of me.

BY MR. ZHU:

Q. Let me share my screen.

So this is the sentence I'm looking at in Claim 1.

A. Okay. So what's your question?

Q. Does Claim 1 require multiple blockchain mining devices connected to one generator?

MR. ZOLOTOREV: Objection. Vague and ambiguous. Calls for expert testimony. And calls for a legal conclusion.

THE WITNESS: I mean, I don't know if this is something Dr. You has clarified, but my understanding of blockchain mining device does include -- it comprises or it includes a Bitcoin mining processor such as Antminer S9.

So, yeah, I don't -- I don't know if that means -- like, a Hash Generator itself is a product also comprised as a generator. Certain products like a Hash Hut comprise multiple generators. I don't

know how to interpret, I guess, your understanding of the patent claim.

BY MR. ZHU:

Q. Well, let me make this even easier.

Does Claim 1 require multiple blockchain mining devices?

MR. ZOLOTOREV: Objection. Calls for expert testimony.

THE WITNESS: I don't know the answer without consulting an expert.

MR. ZHU: Okay. I'm done with my questions.

MR. ZOLOTOREV: Okay. Well, that's good. We can then let Mr. Barbour go back to his family.

And I thank Mr. Barbour for putting up with all of this.

And thank Tamara for taking good care of us.

Jay --

Can we go off the record.

COURT REPORTER: Counsel, may I get transcript requests on the record before we go off?

MR. ZOLOTOREV: Yes, please.

Jay, what is your standard order on this thing?

MR. ZHU: We want it expedited.

MR. ZOLOTOREV: Yeah, well, let's do an expedite for us as well, then.

MR. ZHU: Can I get a rough in 48 hours?

(Whereupon the proceedings concluded at 8:54 p.m. EST)

ERRATA SHEET

NAME OF CASE: CRUSOE ENERGY SYSTEMS, LLC v. UPSTREAM DATA INC.
DATE OF DEPOSITION: JUNE 12, 2024
NAME OF WITNESS: STEPHEN BARBOUR

Reason Codes:
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STEPHEN BARBOUR **DATED**

DECLARATION UNDER PENALTY OF PERJURY

I, STEPHEN BARBOUR, do hereby certify under penalty of perjury that I have read the foregoing transcript of my deposition taken on June 12, 2024; that I have made such corrections as appear noted on the Deposition Errata Page(s), attached hereto, signed by me; that my testimony as contained herein, as corrected, is true and correct.

This Declaration is executed this _____ day of _____, 20___, at _____, California.

_____

STEPHEN BARBOUR

STATE OF CALIFORNIA)
) ss.
)

I, Tamara Houston, RPR, CCRR, CSR No. 7244, a Certified Shorthand Reporter in the State of California, duly empowered to administer oaths, do hereby certify:

That, prior to being examined, the witness named in the foregoing deposition was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth;

That said deposition was taken down by me in shorthand at the time and place therein named, and thereafter reduced to typewriting by computer-aided transcription under my direction;

That the dismantling, unsealing, or unbinding of the original transcript will render the reporter's certification null and void.

I further certify that I am not interested in the event of the action.

In witness whereof, I have hereunto subscribed my name.

Dated: 21st of June, 2024.

Tamara L. Houston

TAMARA L. HOUSTON
CSR 7244, RPR, CCRR 140

Exhibits

Barbour Exhibit 1001 (previously marked)
5:15 142:11,12

Barbour Exhibit 1002 (previously marked)
5:16 54:12,15 80:21 81:5

Barbour Exhibit 1016 (previously marked)
5:17 246:4,5

Barbour Exhibit 1017 (previously marked)
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Barbour Exhibit 1024
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Barbour Exhibit 1025
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Barbour Exhibit 2001 (previously marked)
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Barbour Exhibit 2010 (previously marked)
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