B. Evans

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PETROLEUM GEO-SERVICES INC.

Petitioner

v.

WESTERNGECO LLC

Patent Owner

Case No. IPR2014-01475, -01476, -01477, -91478

Patent No. 7,162,520 B2

Patent No. 7,162,967 B2

Patent No. 7,080,607

DEPOSITION OF DR. BRIAN EVANS

Washington, D.C.

Volume Two - July 10, 2015

Reported by: Mary Ann Payonk

Job No. 94682

B. Evans

July 10, 2015
8:01 a.m.

Deposition of DR. BRIAN J. EVANS, Ph.D., Volume Two, held at the offices of Williams & Connolly, 725 Twelfth Street, N.W., Washington, D.C., pursuant to Notice before Mary Ann Payonk, Nationally Certified Realtime Reporter and Notary Public of the District of Columbia, Commonwealth of Virginia, and New York, CA-CSR No. 13431.

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APPEARANCES:
ON BEHALF OF PETITIONER:
THOMAS FLETCHER, ESQUIRE
JESSAMYN BERNIKER, ESQUIRE
DAVID BERL, ESQUIRE
CHRISTOPHER SUAREZ, ESQUIRE
WILLIAMS & CONNOLLY
725 Twelfth Street, N.W.
Washington, D.C. 20005

ON BEHALF OF PATENT OWNER:
MICHAEL KIKLIS, ESQUIRE
CHRISTOPHER RICCIUTI, ESQUIRE
KATHERINE CAPPAERT, ESQUIRE
OBLON, McCLELLAND, MAIER & NEUSTADT
1940 Duke Street
Alexandria, VA 22314

SIMEON PAPACOSTAS, ESQUIRE
KIRKLAND & ELLIS
300 North LaSalle
Chicago, IL 60654
ALSO PRESENT:
Kevin Hart, Petroleum Geo-Services

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BRIAN J. EVANS, Ph.D.,
recalled as a witness, having been duly sworn, was admonished of his former oath, examined and testified as follows:
EXAMINATION (Cont'd.)
BY MR. KIKLIS:
Q. Good morning, Dr. Evans.
A. Good morning.
Q. Do you understand that you are still under oath from yesterday?
A. I do.
Q. Okay. And you have to testify truthfully and honestly today?
A. I do.
Q. Okay. Are you feeling better today, Dr. Evans?
A. Much.
Q. I understand you had a headache yesterday afternoon.
A. I did.
Q. Do you normally get migraines or --
A. I have the onset of migraine occasionally, occasionally, though the previous time was about two weeks ago.

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Q. I hope you feel better today because we have a lot of work to do. So why don't we just jump in and get started, okay?
A. Yeah.
MR. KIKLIS: I'm going to ask you guys to try to keep our breaks short because it's simply not a possibility to extend over to tomorrow. I have a preplanned and prepaid vacation tomorrow morning, so we're going to finish today.
MS. BERNIKER: Obviously, we will try to keep our breaks short like we did yesterday.
As to tomorrow, you requested 17 hours -- scheduled for 17 hours of deposition and obviously, that's not possible to finish in two days so it's conceivable we will be here tomorrow. But we too hope that we will not be.
BY MR. KIKLIS:
Q. So I want to direct your attention to paragraph 231 of the '520 declaration, Dr. Evans. To refresh your recollection, the first sentence, you talk about setting

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threshold parameter in Workman's control system to a maximum distance.

Do you see that?

A. I see the first sentence says that.

Q. The first sentence says that; right?

A. Yeah.

Q. So my question to you, sir, is if you set the steerable components along the length of the streamer in Workman to enforce a maximum distance separation, wouldn't those steerable components generate a lot of turbulence?

MS. BERNIKER: Objection.

A. This depends on when -- on the reason for setting the components for a maximum distance.

BY MR. KIKLIS:

Q. Okay. Could you explain that?

A. Under some conditions, poor weather, high sea state levels, causes noise. The separation of streamers makes no difference to the noise, in many cases, under poor weather conditions.

Q. Assuming that there weren't poor weather conditions.

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MS. BERNIKER: Objection.

A. If there were normal weather conditions, the maximizing of streamer separation could still remain within threshold levels of the noise limits.

BY MR. KIKLIS:

Q. Well, my question is -- let me start over.

To enforce a maximum distance by the steerable components along the length of the streamer would require a significant amount of steering; isn't that right?

MS. BERNIKER: Objection.

A. Not necessarily.

BY MR. KIKLIS:

Q. Okay. And what do you mean by that?

MS. BERNIKER: Objection.

A. It depends on current directions, near-surface wind forces, sea state.

BY MR. KIKLIS:

Q. So assuming that there was no force that is pulling the streamers to their maximum distance, with that assumption, if you set the steerable components along the length of the

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streamer in Workman to enforce a maximum distance separation, wouldn't these steerable components generate a lot of turbulence?

MS. BERNIKER: Objection.

THE WITNESS: Could you rephrase that, that long question?

MR. KIKLIS: I will say it again.

BY MR. KIKLIS:

Q. So assuming there was no force that was pulling the streamers to their maximum distance -- are you with me so far?

A. Yes.

Q. So we don't have a situation where there are currents pulling the streamers apart. In that situation, if you set the steerable components along the length of the streamer in Workman to enforce a maximum distance separation, wouldn't those steerable components generate a lot of turbulence?

MS. BERNIKER: Objection.

A. The paravane or paravanes are at the front of the cable or cables. They can be totally independent of any streamer recording hydrophones, and they may take all of the noise

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to pull the front ends over.

And that does not mean that any force is then exerted on the other streamer steering devices, they take the force on their own. That's their raison d'etre.

BY MR. KIKLIS:

Q. But in the situation you just described, the paravanes would be creating a lot of turbulence, wouldn't they?

A. The paravanes may create turbulence, but this does not follow that it's passed onto the seismic cable. Paravanes do not need to be established at the head of each streamer.

Q. So assuming a situation where there is now a current, a small current going from right to left, to maintain -- I'm sorry, let me start over.

So now assume that there's a small current going from right to left. In that situation, if you set the steerable components along the length of the streamer in Workman to enforce a maximum distance separation, wouldn't those steerable components generate a lot of turbulence?

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MS. BERNIKER: Objection.

BY MR. KIKLIS:

Q. So I'm not talking about a stormy situation.

A. First of all --

Q. Let me just -- I want to make sure we're clear on the hypothetical, okay? Not talking about a stormy situation. All I'm talking about is a small current traveling from right to left. We're assuming the vessel is going straight.

A. That's what I was going to say. I don't know which way the vessel's going.

Q. Polar coordinates, I guess. So the vessel --

A. Cartesian.

Q. The Cartesian. Okay. So let's assume that the vessel is traveling north.

A. Okay.

Q. Due north, okay? Streamers of course trailing south. There is a small current going from east to west, and those are -- and that's all there is to the hypothetical, and those storms -- nothing else. In that situation, if

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you set the steerable components along the length of the streamer in Workman to enforce a maximum distance situation, wouldn't those steerable components generate a lot of turbulence?

MS. BERNIKER: Objection.

A. In this hypothetical, why would you put the streamer where there are normal currents at a maximum distance? I don't understand the -- even the hypothetical.

BY MR. KIKLIS:

Q. I --

A. We put them at a maximum distance for at-risk situations.

Q. Sir, it's not important that you understand why I ask the question. Please answer my hypothetical.

MS. BERNIKER: Objection, asked and answered.

A. The hypothetical --

MR. KIKLIS: Well, wait. Wait a minute. You've got to be kidding me. Your witness has refused to answer the --

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MS. BERNIKER: He answered it.

MR. KIKLIS: -- question, and your objection is --

MS. BERNIKER: He told you it wouldn't happen.

MR. KIKLIS: Okay.

BY MR. KIKLIS:

Q. Do you understand my hypothetical, sir?

You have a vessel traveling due north with streamers -- towing an array of streamers. You have a small current traveling from east to west. And we're talking about the Workman patent, okay?

Now, if you set the steerable components along the length of the streamer in Workman to enforce a maximum distance separation, wouldn't those steerable components generate a lot of turbulence?

MS. BERNIKER: Objection, asked and answered.

A. I made the comment before that you would not place the streamers wide if there was not an at-risk situation.

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My understanding of your situation is that it is not at-risk and that there's a minor cross-flowing current. There is no hypothetical that -- this would never happen in practice, to my understanding, according to Workman.

BY MR. KIKLIS:

Q. I'm not asking you whether it would occur in practice, sir. My question was to assume my hypothetical and answer the question. If you don't want to answer the question, just say so and I'll move on.

A. I have said that your hypothetical is incorrect in its form, and conditions you are proposing would not happen even in a hypothetical.

Q. But you're suggesting that nobody would want to do this. And I'm asking you that if somebody did do this under these circumstances, wouldn't there be a lot of turbulence?

A. In these circumstances, I have seen streamers not put at their maximum but moved over, and it's created no noise, no more noise

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than was already there.

Q. Okay. Your answer, sir, you referred to streamers not put at their maximum, but --

A. Right.

Q. -- I'm asking you, sir, if they were put at their maximum, maximum distance in the hypothetical that I gave you, wouldn't that generate a lot of turbulence?

MS. BERNIKER: Objection.

A. I did answer before that the -- the paravanes take the maximum noise. They take the noise away from the cable when they tow to a maximum distance. They don't necessarily have to be at the front end of the cable.

In other words, in that case, the cable positioning devices would not have a lot of noise and you could, in this situation, in your hypothetical, you would not be recording, of course.

BY MR. KIKLIS:

Q. Why wouldn't you be recording?

A. You've taken your streamers far away from the locations on the pre-plots and you'll have shut down recording.

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Q. So if you set your streamers to a maximum distance, you're not going to be doing recording; is that right?

MS. BERNIKER: Objection.

A. The reason for setting streamers at a maximum distance is to prevent them from tangling essentially when weather conditions are inclement, poor, rough seas. That is the condition. And you make that decision abandoning the seismic survey at that point in time, and the first to go are the paravanes.

MR. KIKLIS: I'm handing you what's been marked as Exhibit 1058.

THE WITNESS: We've finished with that one, have we?

MR. KIKLIS: For the moment, yes. You can put that aside.

BY MR. KIKLIS:

Q. I've handed you what's been marked Exhibit 1058, Dr. Evans. Do you recognize this?

A. I do.

Q. What is it?

A. A paper by Gikas or Gikas. Which

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interpretation would you like me to use?

Q. Gikas.

A. You say Gikas? I'll use your terminology just to keep you happy.

Q. Okay.

A. A paper published in the London Hydrographic Journal in July 1995 by Gikas, who was a Ph.D. student at the University of New Castle. This, as all Ph.D. students have to in my department, produce at least one paper per year in an accepted publication, journal, or conference.

The title is, "A Rigorous and Integrated Approach to Hydrophone and Source Positioning During Multistreamer Offshore Seismic Exploration."

Q. Can we just refer to Exhibit 1058 as Gikas?

A. Okay, that's fine.

Q. Have you read Gikas?

A. I have.

Q. You understand its contents?

A. I think I do.

Q. So I'd like to direct your attention

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to page 11.

A. Yeah.

Q. Do you see where it says "Introduction"?

A. Yes.

Q. The first paragraph under "Introduction."

A. Yes.

Q. There's a few introductory sentences which talk about the basic configuration of an offshore seismic exploration survey, and then at the end of that paragraph is the following sentence: "The surveying problem is to determine the position of the guns and hydrophones at the instance of firing and reception respectively."

Do you see that sentence, sir?

A. I do.

Q. Did I read that right?

A. You read that correctly.

Q. So the problem that Gikas is trying to address is to determine the position of the guns and hydrophones, isn't it?

MS. BERNIKER: Objection.

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