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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

TSG Reporting - Worldwide
(877) 702-9580

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1 B. Evans
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3
4
5 July 10, 2015
6 8:01 a.m.
7
8 Deposition of DR. BRIAN J. EVANS,
9 Ph.D., Volume Two, held at the offices of
10 Williams & Connolly, 725 Twelfth Street, N.W.,
11 Washington, D.C., pursuant to Notice before
12 Mary Ann Payonk, Nationally Certified Realtime
13 Reporter and Notary Public of the District of
14 Columbia, Commonwealth of Virginia, and New
15 York, CA-CSR No. 13431.
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1 B. Evans
2 APPEARANCES:
3 ON BEHALF OF PETITIONER:
4 THOMAS FLETCHER, ESQUIRE
5 JESSAMYN BERNIKER, ESQUIRE
6 DAVID BERL, ESQUIRE
7 CHRISTOPHER SUAREZ, ESQUIRE
8 WILLIAMS & CONNOLLY
9 725 Twelfth Street, N.W.
10 Washington, D.C. 20005
11
12 ON BEHALF OF PATENT OWNER:
13 MICHAEL KIKLIS, ESQUIRE
14 CHRISTOPHER RICCIUTI, ESQUIRE
15 KATHERINE CAPPAERT, ESQUIRE
16 OBLON, McCLELLAND, MAIER & NEUSTADT
17 1940 Duke Street
18 Alexandria, VA 22314
19
20 SIMEON PAPACOSTAS, ESQUIRE
21 KIRKLAND & ELLIS
22 300 North LaSalle
23 Chicago, IL 60654
24 ALSO PRESENT:
25 Kevin Hart, Petroleum Geo-Services

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1 B. Evans
2 BRIAN J. EVANS, Ph.D.,
3 recalled as a witness, having been duly
4 sworn, was admonished of his former
5 oath, examined and testified as follows:
6 EXAMINATION (Cont'd.)
7 BY MR. KIKLIS:
8 Q. Good morning, Dr. Evans.
9 A. Good morning.
10 Q. Do you understand that you are still
11 under oath from yesterday?
12 A. I do.
13 Q. Okay. And you have to testify
14 truthfully and honestly today?
15 A. I do.
16 Q. Okay. Are you feeling better today,
17 Dr. Evans?
18 A. Much.
19 Q. I understand you had a headache
20 yesterday afternoon.
21 A. I did.
22 Q. Do you normally get migraines or --
23 A. I have the onset of migraine
24 occasionally, occasionally, though the previous
25 time was about two weeks ago.

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

1 B. Evans
 2 threshold parameter in Workman's control system
 3 to a maximum distance.
 4 Do you see that?
 5 A. I see the first sentence says that.
 6 Q. The first sentence says that; right?
 7 A. Yeah.
 8 Q. So my question to you, sir, is if you
 9 set the steerable components along the length
 10 of the streamer in Workman to enforce a maximum
 11 distance separation, wouldn't those steerable
 12 components generate a lot of turbulence?
 13 MS. BERNIKER: Objection.
 14 A. This depends on when -- on the reason
 15 for setting the components for a maximum
 16 distance.
 17 BY MR. KIKLIS:
 18 Q. Okay. Could you explain that?
 19 A. Under some conditions, poor weather,
 20 high sea state levels, causes noise. The
 21 separation of streamers makes no difference to
 22 the noise, in many cases, under poor weather
 23 conditions.
 24 Q. Assuming that there weren't poor
 25 weather conditions.

1 B. Evans
 2 MS. BERNIKER: Objection.
 3 A. If there were normal weather
 4 conditions, the maximizing of streamer
 5 separation could still remain within threshold
 6 levels of the noise limits.
 7 BY MR. KIKLIS:
 8 Q. Well, my question is -- let me start
 9 over.
 10 To enforce a maximum distance by the
 11 steerable components along the length of the
 12 streamer would require a significant amount of
 13 steering; isn't that right?
 14 MS. BERNIKER: Objection.
 15 A. Not necessarily.
 16 BY MR. KIKLIS:
 17 Q. Okay. And what do you mean by that?
 18 MS. BERNIKER: Objection.
 19 A. It depends on current directions,
 20 near-surface wind forces, sea state.
 21 BY MR. KIKLIS:
 22 Q. So assuming that there was no force
 23 that is pulling the streamers to their maximum
 24 distance, with that assumption, if you set the
 25 steerable components along the length of the

1 B. Evans
 2 streamer in Workman to enforce a maximum
 3 distance separation, wouldn't these steerable
 4 components generate a lot of turbulence?
 5 MS. BERNIKER: Objection.
 6 THE WITNESS: Could you rephrase
 7 that, that long question?
 8 MR. KIKLIS: I will say it again.
 9 BY MR. KIKLIS:
 10 Q. So assuming there was no force that
 11 was pulling the streamers to their maximum
 12 distance -- are you with me so far?
 13 A. Yes.
 14 Q. So we don't have a situation where
 15 there are currents pulling the streamers apart.
 16 In that situation, if you set the steerable
 17 components along the length of the streamer in
 18 Workman to enforce a maximum distance
 19 separation, wouldn't those steerable components
 20 generate a lot of turbulence?
 21 MS. BERNIKER: Objection.
 22 A. The paravane or paravanes are at the
 23 front of the cable or cables. They can be
 24 totally independent of any streamer recording
 25 hydrophones, and they may take all of the noise

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 2 to pull the front ends over.
 3 And that does not mean that any force
 4 is then exerted on the other streamer steering
 5 devices, they take the force on their own.
 6 That's their raison d'etre.
 7 BY MR. KIKLIS:
 8 Q. But in the situation you just
 9 described, the paravanes would be creating a
 10 lot of turbulence, wouldn't they?
 11 A. The paravanes may create turbulence,
 12 but this does not follow that it's passed onto
 13 the seismic cable. Paravanes do not need to be
 14 established at the head of each streamer.
 15 Q. So assuming a situation where there
 16 is now a current, a small current going from
 17 right to left, to maintain -- I'm sorry, let me
 18 start over.
 19 So now assume that there's a small
 20 current going from right to left. In that
 21 situation, if you set the steerable components
 22 along the length of the streamer in Workman to
 23 enforce a maximum distance separation, wouldn't
 24 those steerable components generate a lot of
 25 turbulence?

1 B. Evans
 2 MS. BERNIKER: Objection.
 3 BY MR. KIKLIS:
 4 Q. So I'm not talking about a stormy
 5 situation.
 6 A. First of all --
 7 Q. Let me just -- I want to make sure
 8 we're clear on the hypothetical, okay? Not
 9 talking about a stormy situation. All I'm
 10 talking about is a small current traveling from
 11 right to left. We're assuming the vessel is
 12 going straight.
 13 A. That's what I was going to say. I
 14 don't know which way the vessel's going.
 15 Q. Polar coordinates, I guess. So the
 16 vessel --
 17 A. Cartesian.
 18 Q. The Cartesian. Okay. So let's
 19 assume that the vessel is traveling north.
 20 A. Okay.
 21 Q. Due north, okay? Streamers of course
 22 trailing south. There is a small current going
 23 from east to west, and those are -- and that's
 24 all there is to the hypothetical, and those
 25 storms -- nothing else. In that situation, if

1 B. Evans
 2 you set the steerable components along the
 3 length of the streamer in Workman to enforce a
 4 maximum distance situation, wouldn't those
 5 steerable components generate a lot of
 6 turbulence?
 7 MS. BERNIKER: Objection.
 8 A. In this hypothetical, why would you
 9 put the streamer where there are normal
 10 currents at a maximum distance? I don't
 11 understand the -- even the hypothetical.
 12 BY MR. KIKLIS:
 13 Q. I --
 14 A. We put them at a maximum distance for
 15 at-risk situations.
 16 Q. Sir, it's not important that you
 17 understand why I ask the question. Please
 18 answer my hypothetical.
 19 MS. BERNIKER: Objection, asked and
 20 answered.
 21 A. The hypothetical --
 22 MR. KIKLIS: Well, wait. Wait a
 23 minute. You've got to be kidding me.
 24 Your witness has refused to answer
 25 the --

1 B. Evans
 2 MS. BERNIKER: He answered it.
 3 MR. KIKLIS: -- question, and your
 4 objection is --
 5 MS. BERNIKER: He told you it
 6 wouldn't happen.
 7 MR. KIKLIS: Okay.
 8 BY MR. KIKLIS:
 9 Q. Do you understand my hypothetical,
 10 sir?
 11 You have a vessel traveling due north
 12 with streamers -- towing an array of streamers.
 13 You have a small current traveling from east to
 14 west. And we're talking about the Workman
 15 patent, okay?
 16 Now, if you set the steerable
 17 components along the length of the streamer in
 18 Workman to enforce a maximum distance
 19 separation, wouldn't those steerable components
 20 generate a lot of turbulence?
 21 MS. BERNIKER: Objection, asked and
 22 answered.
 23 A. I made the comment before that you
 24 would not place the streamers wide if there was
 25 not an at-risk situation.

1 B. Evans
 2 My understanding of your situation is
 3 that it is not at-risk and that there's a minor
 4 cross-flowing current. There is no
 5 hypothetical that -- this would never happen in
 6 practice, to my understanding, according to
 7 Workman.
 8 BY MR. KIKLIS:
 9 Q. I'm not asking you whether it would
 10 occur in practice, sir. My question was to
 11 assume my hypothetical and answer the question.
 12 If you don't want to answer the question, just
 13 say so and I'll move on.
 14 A. I have said that your hypothetical is
 15 incorrect in its form, and conditions you are
 16 proposing would not happen even in a
 17 hypothetical.
 18 Q. But you're suggesting that nobody
 19 would want to do this. And I'm asking you that
 20 if somebody did do this under these
 21 circumstances, wouldn't there be a lot of
 22 turbulence?
 23 A. In these circumstances, I have seen
 24 streamers not put at their maximum but moved
 25 over, and it's created no noise, no more noise

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1 B. Evans
 2 than was already there.
 3 Q. Okay. Your answer, sir, you referred
 4 to streamers not put at their maximum, but --
 5 A. Right.
 6 Q. -- I'm asking you, sir, if they were
 7 put at their maximum, maximum distance in the
 8 hypothetical that I gave you, wouldn't that
 9 generate a lot of turbulence?
 10 MS. BERNIKER: Objection.
 11 A. I did answer before that the -- the
 12 paravanes take the maximum noise. They take
 13 the noise away from the cable when they tow to
 14 a maximum distance. They don't necessarily
 15 have to be at the front end of the cable.
 16 In other words, in that case, the
 17 cable positioning devices would not have a lot
 18 of noise and you could, in this situation, in
 19 your hypothetical, you would not be recording,
 20 of course.
 21 BY MR. KIKLIS:
 22 Q. Why wouldn't you be recording?
 23 A. You've taken your streamers far away
 24 from the locations on the pre-plots and you'll
 25 have shut down recording.

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1 B. Evans
 2 interpretation would you like me to use?
 3 Q. Gikas.
 4 A. You say Gikas? I'll use your
 5 terminology just to keep you happy.
 6 Q. Okay.
 7 A. A paper published in the London
 8 Hydrographic Journal in July 1995 by Gikas, who
 9 was a Ph.D. student at the University of New
 10 Castle. This, as all Ph.D. students have to in
 11 my department, produce at least one paper per
 12 year in an accepted publication, journal, or
 13 conference.
 14 The title is, "A Rigorous and
 15 Integrated Approach to Hydrophone and Source
 16 Positioning During Multistreamer Offshore
 17 Seismic Exploration."
 18 Q. Can we just refer to Exhibit 1058 as
 19 Gikas?
 20 A. Okay, that's fine.
 21 Q. Have you read Gikas?
 22 A. I have.
 23 Q. You understand its contents?
 24 A. I think I do.
 25 Q. So I'd like to direct your attention

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1 B. Evans
 2 Q. So if you set your streamers to a
 3 maximum distance, you're not going to be doing
 4 recording; is that right?
 5 MS. BERNIKER: Objection.
 6 A. The reason for setting streamers at a
 7 maximum distance is to prevent them from
 8 tangling essentially when weather conditions
 9 are inclement, poor, rough seas. That is the
 10 condition. And you make that decision
 11 abandoning the seismic survey at that point in
 12 time, and the first to go are the paravanes.
 13 MR. KIKLIS: I'm handing you what's
 14 been marked as Exhibit 1058.
 15 THE WITNESS: We've finished with
 16 that one, have we?
 17 MR. KIKLIS: For the moment, yes.
 18 You can put that aside.
 19 BY MR. KIKLIS:
 20 Q. I've handed you what's been marked
 21 Exhibit 1058, Dr. Evans. Do you recognize
 22 this?
 23 A. I do.
 24 Q. What is it?
 25 A. A paper by Gikas or Gikas. Which

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1 B. Evans
 2 to page 11.
 3 A. Yeah.
 4 Q. Do you see where it says
 5 "Introduction"?
 6 A. Yes.
 7 Q. The first paragraph under
 8 "Introduction."
 9 A. Yes.
 10 Q. There's a few introductory sentences
 11 which talk about the basic configuration of an
 12 offshore seismic exploration survey, and then
 13 at the end of that paragraph is the following
 14 sentence: "The surveying problem is to
 15 determine the position of the guns and
 16 hydrophones at the instance of firing and
 17 reception respectively."
 18 Do you see that sentence, sir?
 19 A. I do.
 20 Q. Did I read that right?
 21 A. You read that correctly.
 22 Q. So the problem that Gikas is trying
 23 to address is to determine the position of the
 24 guns and hydrophones, isn't it?
 25 MS. BERNIKER: Objection.

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