

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PETROLEUM GEO-SERVICES INC.

Petitioner

v.

WESTERNGECO LLC

Patent Owner

CASE IPR: Unassigned

Patent 7,162,520 B2

DECLARATION OF DR. BRIAN EVANS, PhD.

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 1. “An array of streamers each having a plurality of streamer positioning devices there along”119

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I, Dr. Brian Evans, hereby state the following:

I. INTRODUCTION

1. I have been retained by Petroleum Geo-Services, Inc. (“PGS”) to provide technical assistance related to the filing of a Petition for *Inter Partes Review* of U.S. Patent No. 7,293,520 B2 (“the ’520 Patent”) (Ex. 1001). I am working as a private consultant on this matter and the opinions presented here are my own.

2. I have been asked to prepare a written report, including comments related to whether certain claims of the ’520 Patent are unpatentable because they are anticipated or would have been obvious to one of ordinary skill in view of the prior art. I have reviewed the documents set forth in the attached Appendix of Exhibits and relied on my decades of knowledge and experience in the field of seismic marine surveys (detailed in Section II) in reaching my opinions regarding validity. This report sets forth the bases and reasons for my opinions, including the additional materials and information relied upon in forming those opinions and conclusions.

3. This report is based on information currently available to me. I reserve the right to continue my investigation and analysis, which may include a review of documents and information not yet produced. I further reserve the right to expand or otherwise modify my opinions and conclusions as my investigation and study

bins, thereby avoiding holes or uneven distributions of seismic traces that can cause poor data quality within the bins.

c. Streamer Tangling

39. If streamers veer substantially off their intended course, for example due to local currents, they can become entangled. Streamer tangling can damage the streamers and the devices thereon. Tangling can also take a significant time to remedy and, thus, forces the survey operators to cease data collection for an extended period of time. The costs of this can be substantial, as the streamer equipment is enormously expensive, and the efficient conduct of the survey, with minimal downtime, is essential to the profitable conduct of the survey. *See* Ex. 1006 (WO 98/28636) (“’636 PCT”) at 2.

d. Turning

40. It was well known, since at least the 1970s, that turning operations during a survey were encumbered by currents and the centripetal forces of turns that resulted in certain problems during marine seismic surveys, including streamer tangling and wasted time that costs marine seismic surveys substantial amounts of money. Other problems were caused by the relative speeds of cables during turns. A further explanation of marine seismic turn control operations will clarify these problems, which are also disclosed by various references described below.

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