# ION Exhibit 1003 Declaration for Dr. Jack H. Cole, PhD

51 pages Pages numbered 1-51



# 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: <u>Unassigned</u> Patent 7,293,520 B2

DECLARATION OF DR. JACK H. COLE, PhD.



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I, Dr. Jack Cole, hereby state the following:

#### I. INTRODUCTION

- 1. Petroleum Geo-Services, Inc. ("PGS") has retained me to provide consulting services 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). All opinions presented in this report are my own.
- 2. PGS has asked me to provide an opinion as to whether or not a person of ordinary skill in the art ("POSA") would have been able, by the applicable priority date, to implement certain claims of the '520 Patent relating to control systems. This report describes my opinions and the reasons for them. In reaching my opinion, I have relied on my extensive expertise in the control systems field and the materials in the table below. I have attached the list of materials that I relied on in this report as Appendix A.
- 3. I have reached the opinions in this report on the basis of the materials and information currently available to me. I reserve the right to modify my opinions, including to supplement my opinions in light of information that becomes available to me. I also reserve the right to continue my investigation and analysis, including concerning materials that have not yet been produced.



### II. QUALIFICATIONS

- 4. I am a Design and Controls Engineer. I am currently the President of my own independent research company and a member of the graduate faculty at the University of Arkansas. I have worked continuously in the field of control systems design for over 45 years, since 1963, and seismic survey methods, including marine seismic surveys, for over 31 years, since 1982. I have extensive research and development experience in academic, national laboratory, and industrial environments.
- 5. I have obtained the following degrees from Oklahoma State
  University: a bachelor's of science in Mechanical Engineering (with a Petroleum
  Option) in 1958; a Master's degree in Mechanical Engineering, with a Fluid Power
  Control Specialty in 1963; and a Ph.D. in Mechanical Engineering with a Control
  Systems emphasis in 1968.
- 6. I worked for various companies between the time that I graduated from college and the time I completed my Ph.D. program. From 1959 to 1963, I worked for American Airlines as a design engineer. From 1963 to 1964, I worked at General Dynamics, where my responsibilities included working on hydraulic flight-control systems, including wing sweep actuation. From 1964 to 1968, I worked in advanced engineering for Rockwell Corporation.



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