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Seismic Considerations for Classifying Resources/Reserves

It is important for planning and reporting that corporations have a clear assessment of the volumetric quantities of hydrocarbons as both OGIP/STOOIP (original oil in place/stock tank original oil in place) and recoverable resource/reserves. Recently developed and approved by the SPE, AAPG, and World Petroleum Congress is the "Resource Classification System" adopted by numerous oil and gas companies. Geophysical technology and its application, often referred to as "seismic considerations," can have significant impact to reserve/resource classification and available bookings under this system.

The purpose of this talk is to stimulate discussion and recommend a set of clear yet stringent guidelines for the proper application of such geophysical technology when classifying resources/reserves. Some examples will be shown for how geophysical tools such as optical stacks, rock property analysis, fluid substitution, seismic synthetics and 3D amplitude extractions can be integrated with well log data to aid reserve/resource classification. This pertains specifically to extrapolation away from the wellbore as well as both below the lowest known hydrocarbon (LKH) and above the highest known hydrocarbon (HKH). An appropriate level of sophistication and redundancy is suggested


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as necessary to meet SEC guidelines of "reasonable certainty" to classify resources/reserves accordingly using seismic data. ■

Biographical Sketch

Jeffrey S. Ogilvie is a geophysical advisor for Noble Energy in Houston. He is a member of SEG and SPE and author of papers in *Geophysics* and *The Leading Edge*. He began his career with Western Geophysical in 1984 and joined ChevronTexaco in 1988, where he held numerous earth science assignments in exploration and exploitation, both domestic and international (GOM,

UK, West Africa). Jeff received his BS in geology-geophysics, Boston College (1983), and MS in geophysical sciences, Georgia Institute of Technology (1988). Career highlights include Best Paper in Geophysics (1996), Texaco's President's Award (1997), and ChevronTexaco's Chairman's Award (2003). His current interests are activities related to domestic/international reserve determination and reporting, rock properties/DHI, and seismic attribute analysis.

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