

A Qualitative Examination of Direct Hydro Carbon Indicators (DHI's) on Seismic Data

Presented by

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ABSTRACT

Since the first HCI (hydrocarbon Indicator) was mapped in the Gulf Of Mexico during the 1980's, explorationists have been using impedance contrast and geometry anomalies to prospect for and assess the risk of gas and some oil accumulations in the shallow clastic section above 15,000 feet. Many companies have made substantial discoveries as a result of utilizing DHI's analysis work flows, while others have gone out of business by relying only on DHI's to fill their prospect portfolios. This talk will discuss the historical development of DHI prospecting and examine various types of DHI's from "amplitude anomaly" bright spots, to up-dip dim-outs in the geopressured section, to attenuation and sag anomalies, and also review geometric anomalies including flat spots and gas plume/chimney/cloud anomalies. The talk will also address pitfalls of using DHI's including a discussion of low saturation gas anomalies and other features that can create DHI-looking events. The talk will conclude with a discussion of utilizing certain aspects of DHI's to augment the geologic risk analysis process such as structural conformance, internal mottling, and amplitude over background considerations.

BIOGRAPHY



John Dribus is the Global Geology Advisor for Schlumberger Oil Field Services. He is a Reservoir Geologist with over 40 years' experience, and has worked all aspects of petroleum exploration, exploitation, and production geology. He worked five years as a uranium field geologist, and then 20 years for Mobil Oil Corporation as a petroleum geologist, including 14 years working the deep water Gulf of Mexico and subsalt province, and managing their Gulf of Mexico Geologic Risk Analysis team.

He has worked the past 19 years for Schlumberger as Northern Gulf of Mexico Data and Consulting Services Manager, and as the Global Geologic Advisor for exploration projects. He has worked deep water basins along the Atlantic margin from W. Greenland down to the Malvinas/Falkland Island Basins, including the Gulf of Mexico. His primary focus has been on understanding the petroleum systems characteristics of basin fan floor and channelized turbidites, pre-salt and subsalt reservoirs, and other clastic and bioclastic reservoirs of the Atlantic margin basin.

He is the former Chairman of the Advisory Board of the American Petroleum Institute (API) Delta Chapter, serves on the Imperial Barrel Award (IBA) Committee of the American Association of Petroleum Geologists (AAPG), and is a member of the AAPG (30 years), New Orleans Geological Society (NOGS), Houston Geological Society (HGS), and the Society of Petroleum Engineers (SPE), and European Association of Geoscientists and Engineers (EAGE). In 2013, he was recognized by the Society of Petroleum Engineers with the Eastern North America Region Reservoir Description and Dynamics Award. In 2014, he was an invited speaker at both the AAPG Discovery Thinking Forum and Playmaker Forum, and received the Meritorious Service Award from the American Petroleum Institute (API) Delta Section. In 2017 he was recognized by the AAPG as an AAPG Heritage Geologist at the 100th Annual Convention in Houston. In 2018, he will receive the 2017 A.I. Levorsen Memorial Award for best technical paper at the GCAGS Annual Meeting (different paper).