

**U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region**

GENERAL INFORMATION

April 2010

Uses of Geological and Geophysical Survey Data

Geological and geophysical (G&G) surveys provide information used by the offshore energy industry and the government to evaluate the potential for offshore oil, gas, and methane hydrate resources; nonenergy mineral resources (i.e., sand and gravel); geologic hazards; and renewable energy activities. The oil and gas industry needs accurate data on the location, extent, and properties of hydrocarbon resources, as well as information on shallow geologic hazards and seafloor geotechnical properties, in order to explore, develop, produce, and transport hydrocarbons safely and economically.

The Minerals Management Service (MMS) also needs this information to fulfill its statutory responsibilities to ensure safe operations, support environmental impact analyses, protect benthic and archaeological resources through avoidance measures, ensure fair market value for leases, make royalty relief determinations, conserve oil and gas resources, and perform other statutory responsibilities.

The MMS regulatory staff specifically uses G&G data to ensure that the proposed site of bottom-founded structures is safe (i.e., via geohazards review) and that the foundations are properly designed (i.e., based on engineering parameters determined from cores), thus ensuring safe operations. The MMS environmental staff uses G&G data in complying with various environmental laws, such as the Endangered Species Act, the Marine Mammal Protection Act, the Coastal Zone Management Act, and the Magnuson-Stevens Fishery Conservation and Management Act, and to support mitigation measures and decisions to protect benthic, historic archaeological, and other natural resources. The MMS resource evaluation staff uses deep two-dimensional (2D) and three-dimensional (3D) seismic data for resources estimation and bid evaluation to ensure that the Government receives a fair market value for lease blocks offered. The MMS production and development staff uses 2D, 3D, and four-dimensional seismic data to map reserves and to develop evaluations for conservation of resources.

For additional information, refer to Section I.B. of *Geological and Geophysical Exploration for Mineral Resources on the Gulf of Mexico Outer Continental Shelf – Final Programmatic Environmental Assessment* (OCS EIS/EA MMS 2004-054), which can be found at <http://www.gomr.mms.gov/PDFs/2004/2004-054.pdf>.