MMS

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Exploratory Study of Deepwater Currents in the Gulf of Mexico Volume I: Executive Summary and Volume II: Technical Report

OCS Study MMS 2006-073 and 2006-074

The Minerals Management Service (MMS), Gulf of Mexico OCS Region, announces the availability of a new study report, *Exploratory Study of Deepwater Currents in the Gulf of Mexico, Volume I: Executive Summary and Volume II: Technical Report.*

This report presents the findings of a study designed to increase our deepwater current database and knowledge of the deep circulation in the Gulf of Mexico and to make sufficient measurements to design future oceanographic studies in deepwater regions of the Gulf. The study area was in the northern mid-Gulf, approximately south of New Orleans. The east-west extent of the study area was between 88° W and 94° W, and the north-south extent from the 1,000-m isobath in the north to the 3,000-m isobath or the U.S. Exclusive Economic Zone in the south. Field measurements were made from March 2003 through April 2004 by using moored arrays, Lagrangian drifters, and inverted echo sounders with pressure. These measurements were supplemented with remote-sensing derived sea-surface heights, sea-surface temperatures, and color. This combination of observations and measurements provides a cost-effective database that reveals new insights into the deep Gulf circulation. The expected two-layer flow patterns were again present and well documented. In the lower layer, an almost continuous sequence of eddy and wave-like motions resided in or moved through the measurement domain. In the upper layer, the Loop Current was a major factor affecting upper-layer currents and circulation. Strong Loop Current eddies separated close to the study region and moved west and southwest through the array. Boundary features/eddies on the Loop Current and Loop Current eddies also had a significant influence on circulation patterns in the upper layer. The Sigsbee Escarpment was a barrier to lower-layer currents; on the upper side of the Sigsbee, currents were generally and consistently less vigorous than those observed at the base of the Escarpment.

This report is available only in compact disc format from the Minerals Management Service, Gulf of Mexico OCS Region, at a charge of $15.00, by referencing OCS Study MMS 2006-073 and 2006-074. The report may be downloaded from the MMS website through the Environmental Studies Program Information System (ESPIS). You will be able to obtain this report also from the National Technical Information Service in the near future. Here are the addresses. You may also inspect copies at selected Federal Depository Libraries.

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