Public Executive Summary

Title: Development of a Research Report and Characterization Database of Deepwater and Ultra-Deepwater Assets in the Gulf of Mexico, including Technical Focus Direction, Incentives, Needs Assessment Analysis and Concepts Identification for Improved Recovery Tech

Name of Offeror: Knowledge Reservoir

Project Manager: Charlotte Schroeder
Principal Investigator: Joe Lach

Additional participants: Louisiana State University; Anadarko Petroleum Corporation

Solicitation Number: RFP2007DW1701 (07121-1701)

Project Start Date: February 3, 2009
Project End Date: December 15, 2010

Total Estimated Cost:	$ 1,999,712.00
RPSEA Maximum Share:	$ 1,599,712.00
Knowledge Reservoir Cost Share:	$ 400,000.00

Goal

The objective of this project is to identify and document Improved Oil Recovery (IOR) opportunities in the deepwater and ultra-deepwater Gulf of Mexico, so that facility and well designs can be optimized to take advantage of these opportunities. The project will result in a catalogue of producing fields with IOR potential, a discussion of key causes for trapped/ remaining hydrocarbons in these fields, and a review of current and emerging technologies and technology gaps for improved recovery, all of which will be provided in a web portal interface that will be readily accessible to operators and researchers.

Background

According to the Minerals Management Service, the conventional ultimate recovery base in the deepwater and ultra-deepwater Gulf of Mexico is 9 billion barrels of oil equivalent, but many of these fields have recovery factors as low as 15-25% from primary recovery. The aim of this project is to identify IOR opportunities and technologies that can be used to unlock a larger percentage of this untapped oil.

The project will focus on improved recovery methods and opportunities that can be anticipated in the early stages of field development through modified surface and subsurface infrastructure design. The project will include an analysis of the technology gaps in improving recoveries in deepwater and ultra-deepwater reservoirs, and suitable IOR concepts for bridging these gaps.

The project will be directed and coordinated by Knowledge Reservoir, who will also lead the effort to identify and categorize fields with significant IOR potential in the Gulf of Mexico. LSU will lead the tasks related to the identification and analysis of existing and emerging IOR methodologies. Anadarko will focus specifically on the applicability of the project results to its K2 Field development in the deepwater Gulf of Mexico.

This project will result in a knowledge base of information related to IOR opportunities in deepwater and ultra-deepwater reservoirs in the Gulf of Mexico. This IOR knowledge base will include field-specific information, catalogued according to: total reserves, primary recovery factor, stage in field life cycle, geological setting, reservoir characteristics, oil type, and types of IOR that may be applicable (such as, waterflooding, gas injection, etc.). In addition, there will be a summary of the main causes and mechanisms for trapped hydrocarbons in these fields, technical gaps for applying IOR techniques in deepwater and ultra-deepwater, and promising IOR concepts for bridging these gaps. Project results will be available in a web portal interface, which will enable users to download project results and utilize the Gulf of Mexico field and IOR knowledge base as needed.

Potential Impacts

The information compiled in this project should expand the industry's understanding of current and emerging IOR methodologies and, specifically, the relevance of these methodologies as they apply to deepwater and ultra-deepwater oil fields in the Gulf of Mexico. It is anticipated that a better understanding of IOR opportunities in the Gulf could lead to optimization of facility and well designs to take advantage of these opportunities. The initiation of new IOR efforts will ultimately lead to recovery of more oil resources from deep and ultra-deepwater fields in the Gulf of Mexico.

By extending field life and ultimate recovery in existing fields, new IOR efforts will result in an overall increase in production from deep and ultra-deep fields in the Gulf of Mexico. Ultimately, the nation will benefit from a resulting increase in domestic oil supply, added tax revenues and royalties, and regional economic growth.

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