

Report Title

“Basin Analysis and Petroleum System Characterization and Modeling, Interior Salt Basins, Central and Eastern Gulf of Mexico”

Type of Report

Second Quarterly Progress Report for Year 1

Reporting Period Start Date

August 1, 2003

Reporting Period End Date

October 31, 2003

Principal Author

Ernest A. Mancini (205/348-4319)
Department of Geological Sciences
Box 870338
202 Bevill Building
University of Alabama
Tuscaloosa, AL 35487-0338

Date Report was Issued

November 11, 2003

DOE Award Number

DE-FC26-03NT15395

Name and Address of Participants

Ernest A. Mancini
Dept. of Geological Sciences
Box 870338
Tuscaloosa, AL 35487-0338

Donald A. Goddard
Center for Energy Studies
Louisiana State University
Baton Rouge, LA 70803

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Abstract

The principal research effort for Year 1 of the project is data compilation and the determination of the tectonic and depositional histories of the North Louisiana Salt Basin. In the first three (3) to six (6) months of Year 1, the research focus is on data compilation and the remainder of the year the emphasis is on the tectonic and depositional histories of the basin. No major problems have been encountered to date, and the project is on schedule.

TABLE OF CONTENTS

	Page
Title Page	i
Disclaimer	ii
Abstract	iii
Table of Contents	iv
Introduction	1
Executive Summary	1
Project Objectives	1
Experimental	1
Work Accomplished in Year 1	1
Work Planned	1
Results and Discussion	2
Conclusions	2
References	2
Table 1 Milestone Chart—Year 1	4

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Introduction

The University of Alabama and Louisiana State University have undertaken a cooperative 5-year, fundamental research project involving sedimentary basin analysis and petroleum system characterization and modeling of the North Louisiana Salt Basin and Mississippi Interior Salt Basin. According to the USGS, the hydrocarbon volume of these basins ranks them in the top 8% of the most petroliferous basins of the world.

Executive Summary

The principal research effort for Year 1 of the project is data compilation and the determination of the tectonic and depositional histories of the North Louisiana Salt Basin. In the first three (3) to six (6) months of Year 1, the research focus is on data compilation and the remainder of the year the emphasis is on the tectonic and depositional histories of the basin.

Project Objectives

The principal objectives of the project are to develop through basin analysis and modeling the concept that petroleum systems acting in a basin can be identified through basin modeling and to demonstrate that the information and analysis resulting from characterizing and modeling of these petroleum systems in the North Louisiana Salt Basin and the Mississippi Interior Salt Basin can be used in providing a more reliable and advanced approach for targeting stratigraphic traps and specific reservoir facies within a geologic system and in providing a refined assessment of undiscovered and underdeveloped reservoirs and associated oil and gas resources.

Experimental

Work Accomplished

Data Compilation—The existing information on the North Louisiana Salt Basin continues to be evaluated and an electronic database has been developed. The oil and gas well logs (141) to be utilized in the construction of the 10 cross sections have been acquired and digitized. The digitized logs are being used to construct the cross sections for the basin using PETRA software by GEOPPLUS Corporation. These cross sections will be employed in making the interpretation of the tectonic history and depositional history of the North Louisiana Salt Basin. Cores in the basin penetrating Jurassic strata continue to be studied.

Work Planned

Data Compilation—Construction of the cross sections will continue.

Tectonic History—The cross sections, well logs, core and sample data, and available seismic profiles, in conjunction with the literature, will be used to interpret the tectonic history of the North Louisiana Salt Basin.

Depositional History—The cross sections, well logs, core and sample data, and available seismic profiles, in conjunction with the literature, will be used to interpret the depositional history of the North Louisiana Salt Basin.

Results and Discussion

No major problems have been encountered at this point. We are working with companies operating in the basin to acquire selective seismic profiles in this study.

Conclusions

The project work is on schedule.

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Table 1
Milestone Chart—Year 1

