Report Title

*"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System
Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"*

Type of Report

First Quarterly Progress Report for Year 3

Reporting Period Start Date

August 23, 1998

Reporting Period End Date

December 31, 1998

Principal Author

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

Date Report was Issued

January 19, 1999

DOE Award Number

DE-FG22-96BC14946

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

***"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System
Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"***

First Quarterly Report for Year 3
August 23, 1998—December 31, 1998

Project Objectives

Part 2 (Basin Analysis of the Mississippi Interior Salt Basin) objectives are to provide a comprehensive analysis of the Mississippi Interior Salt Basin in Years 2 and 3 of the project and to transfer effectively the research results to producers through workshops and topical reports.

Work Accomplished

Task 1—Tectonic History

The dominant structural styles that are evident in the Mississippi Interior Salt Basin have been identified as basement, salt-related and stratigraphic. These have been recognized as a result of the preparation of structural and isopach maps and the study of geophysical data.

Task 2—Depositional History

The dominant depositional systems and the dominant environments have been identified for Jurassic and Lower Cretaceous strata. These have been recognized as a result of well log analysis, the study of sample log reports, and the preparation of regional cross sections.

Task 3—Fluid Flow

Through the use of BasinMod® 2-D software, the 1-D burial and thermal history profiles for individual wells have been integrated into five regional profiles for the Mississippi Interior Salt Basin. These regional profiles will form the foundation for constructing the fluid flow model for the basin.

Task 4—Underdeveloped Plays

Modeling of the deposition of reefs and associated carbonate shoals on a ramp margin has been initiated. This modeling builds on the modeling that has been completed for low-relief paleohighs.

Task 5—Technology Transfer

No work was performed on this task for this quarter.

Task 6—Topical Reports

The topical report on the tectonic, depositional, burial and thermal histories of the Mississippi Interior Salt Basin has been sent out for review.

Work Planned

Task 1—Tectonic History

Petroleum traps in the Mississippi Interior Salt Basin will be characterized.

Task 2—Depositional History

The dominant depositional systems and dominant environments for Upper Cretaceous and Tertiary strata will be determined.

Task 3—Fluid Flow

Building of the fluid flow model for the basin will continue.

Task 4—Underdeveloped Plays

Analogues for the reef and shoal play will be studied and work will be initiated for the siliciclastic environments.

Task 5—Technology Transfer

Planning for the workshop on fluid flow will begin.

Task 6—Topical Reports

The first topical report will be submitted.

Table 1
Milestone Chart—Year 3

DEPARTMENT OF GEOLOGY

THE UNIVERSITY OF ALABAMA
College of Arts and Sciences

January 19, 1999

AAD Document Control
U.S. Department of Energy
Pittsburgh Energy Technology Center
P.O. Box 10940, MS 921-143
Pittsburgh, PA 15236-0940

Dear Sirs:

Enclosed please find the original, 2 paper copies and 1 electronic file copy of the First Quarterly Progress Report for Year 3 of the project, *"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"* (Project Number DE-FG22-96BC14946). The project initiation date was August 29, 1996, and the project period is from August 23, 1996, to August 22, 2001. The project reporting period is from August 23, 1998 to December 31, 1998.

If there are any questions regarding this report, please call me at 205/348-4319.

Sincerely yours,

Ernest A. Mancini

Encl.

cc Pam Standifer

ACQUISITION & ASSISTANCE
1999 JAN 20 A 10:09
USDOE-FE1C

Report Title

"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"

Type of Report

First Quarterly Progress Report for Year 3

Reporting Period Start Date

August 23, 1998

Reporting Period End Date

December 31, 1998

Principal Author

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

Date Report was Issued

January 19, 1999

DOE Award Number

DE-FG22-96BC14946

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

***"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System
Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"***

First Quarterly Report for Year 3
August 23, 1998—December 31, 1998

Project Objectives

Part 2 (Basin Analysis of the Mississippi Interior Salt Basin) objectives are to provide a comprehensive analysis of the Mississippi Interior Salt Basin in Years 2 and 3 of the project and to transfer effectively the research results to producers through workshops and topical reports.

Work Accomplished

Task 1—Tectonic History

The dominant structural styles that are evident in the Mississippi Interior Salt Basin have been identified as basement, salt-related and stratigraphic. These have been recognized as a result of the preparation of structural and isopach maps and the study of geophysical data.

Task 2—Depositional History

The dominant depositional systems and the dominant environments have been identified for Jurassic and Lower Cretaceous strata. These have been recognized as a result of well log analysis, the study of sample log reports, and the preparation of regional cross sections.

Task 3—Fluid Flow

Through the use of BasinMod® 2-D software, the 1-D burial and thermal history profiles for individual wells have been integrated into five regional profiles for the Mississippi Interior Salt Basin. These regional profiles will form the foundation for constructing the fluid flow model for the basin.

Task 4—Underdeveloped Plays

Modeling of the deposition of reefs and associated carbonate shoals on a ramp margin has been initiated. This modeling builds on the modeling that has been completed for low-relief paleohighs.

Task 5—Technology Transfer

No work was performed on this task for this quarter.

Task 6—Topical Reports

The topical report on the tectonic, depositional, burial and thermal histories of the Mississippi Interior Salt Basin has been sent out for review.

ACQUISITION ASSISTANT
1999 JAN 20 A 10:00
JODI-FETC

Work Planned

Task 1—Tectonic History

Petroleum traps in the Mississippi Interior Salt Basin will be characterized.

Task 2—Depositional History

The dominant depositional systems and dominant environments for Upper Cretaceous and Tertiary strata will be determined.

Task 3—Fluid Flow

Building of the fluid flow model for the basin will continue.

Task 4—Underdeveloped Plays

Analogues for the reef and shoal play will be studied and work will be initiated for the siliciclastic environments.

Task 5—Technology Transfer

Planning for the workshop on fluid flow will begin.

Task 6—Topical Reports

The first topical report will be submitted.

Table 1
Milestone Chart—Year 3

DEPARTMENT OF GEOLOGY

THE UNIVERSITY OF ALABAMA
College of Arts and Sciences

January 19, 1999

AAD Document Control
U.S. Department of Energy
Pittsburgh Energy Technology Center
P.O. Box 10940, MS 921-143
Pittsburgh, PA 15236-0940

Dear Sirs:

Enclosed please find the original, 2 paper copies and 1 electronic file copy of the First Quarterly Progress Report for Year 3 of the project, *"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"* (Project Number DE-FG22-96BC14946). The project initiation date was August 29, 1996, and the project period is from August 23, 1996, to August 22, 2001. The project reporting period is from August 23, 1998 to December 31, 1998.

If there are any questions regarding this report, please call me at 205/348-4319.

Sincerely yours,

Ernest A. Mancini

Encl.

cc Pam Standifer

ACQUISITION & ASSISTANCE
1999 JAN 20 A 10 09
USDOE-FETC

Report Title

*"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System
Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"*

Type of Report

First Quarterly Progress Report for Year 3

Reporting Period Start Date

August 23, 1998

Reporting Period End Date

December 31, 1998

Principal Author

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

Date Report was Issued

January 19, 1999

DOE Award Number

DE-FG22-96BC14946

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

***"Basin Analysis of the Mississippi Interior Salt Basin and Petroleum System
Modeling of the Jurassic Smackover Formation, Eastern Gulf Coastal Plain"***

First Quarterly Report for Year 3
August 23, 1998—December 31, 1998

Project Objectives

Part 2 (Basin Analysis of the Mississippi Interior Salt Basin) objectives are to provide a comprehensive analysis of the Mississippi Interior Salt Basin in Years 2 and 3 of the project and to transfer effectively the research results to producers through workshops and topical reports.

Work Accomplished

Task 1—Tectonic History

The dominant structural styles that are evident in the Mississippi Interior Salt Basin have been identified as basement, salt-related and stratigraphic. These have been recognized as a result of the preparation of structural and isopach maps and the study of geophysical data.

Task 2—Depositional History

The dominant depositional systems and the dominant environments have been identified for Jurassic and Lower Cretaceous strata. These have been recognized as a result of well log analysis, the study of sample log reports, and the preparation of regional cross sections.

Task 3—Fluid Flow

Through the use of BasinMod® 2-D software, the 1-D burial and thermal history profiles for individual wells have been integrated into five regional profiles for the Mississippi Interior Salt Basin. These regional profiles will form the foundation for constructing the fluid flow model for the basin.

Task 4—Underdeveloped Plays

Modeling of the deposition of reefs and associated carbonate shoals on a ramp margin has been initiated. This modeling builds on the modeling that has been completed for low-relief paleohighs.

Task 5—Technology Transfer

No work was performed on this task for this quarter.

Task 6—Topical Reports

The topical report on the tectonic, depositional, burial and thermal histories of the Mississippi Interior Salt Basin has been sent out for review.

Work Planned

Task 1—Tectonic History

Petroleum traps in the Mississippi Interior Salt Basin will be characterized.

Task 2—Depositional History

The dominant depositional systems and dominant environments for Upper Cretaceous and Tertiary strata will be determined.

Task 3—Fluid Flow

Building of the fluid flow model for the basin will continue.

Task 4—Underdeveloped Plays

Analogs for the reef and shoal play will be studied and work will be initiated for the siliciclastic environments.

Task 5—Technology Transfer

Planning for the workshop on fluid flow will begin.

Task 6—Topical Reports

The first topical report will be submitted.

Table 1
Milestone Chart—Year 3