Revised Date: January 15, 2015

ENVIRONMENTAL STUDIES PROGRAM: Studies Development Plan FY 2015

Region: Headquarters

Planning Area(s): All

Title: Outer Continental Shelf Carbon Dioxide Transportation and Sub-Seabed Geologic Storage Best Management Practices

BOEM Information Need(s) to be Addressed: Best Management Practices (BMPs) for carbon dioxide (CO_2) transport and storage operations on the Outer Continental Shelf (OCS) will support the development of BOEM's regulatory program for these types of projects.

Cost Range: $500K **Period of Performance:** FY 2010-2015

Description:

Background: Under the Outer Continental Shelf Lands Act (OCSLA), the Department of the Interior (DOI), Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) may authorize and regulate the development of mineral resources and certain other energy and marine related uses on the OCS.

Objectives: The purpose of this study is to establish BMPs for OCS CO_2 transport and storage operations on the OCS that will support the development of BOEM's regulatory program for these types of projects.

Methods: A worldwide literature survey will be conducted that reviews and analyzes the current literature and other material from domestic and international private, academic, and governmental sources regarding CO_2 transportation and sub-seabed geologic storage. Information may include regulations, guidelines, management frameworks, best management practices, "lessons-learned", etc. from offshore and onshore geologic carbon storage projects and programs that may translate to the offshore environment. All of the literature and other materials complied during the survey will be entered into a Worldwide Annotated Literature Database complete with annotations. A synthesis report will developed to analyze the results of the worldwide literature survey.

The worldwide literature database and synthesis report will be utilized to develop the BMPs that will address all aspects of CO_2 transportation and sub-seabed geologic storage operations on the OCS. The BMPs will leverage concurrent efforts underway by the Department of Energy, the Environmental Protection Agency, European Union, etc. The BMPs will address the following:

1. Site Selection and Characterization (data collection, capacity/injectivity assessments, modeling, etc.)
2. Risk Analysis

3. Project Planning and Execution (design, construction, operation, and maintenance)
4. Environmental Monitoring
5. Mitigation
6. Inspection and Auditing
7. Reporting Requirements
8. Emergency Response and Contingency Planning
9. Decommissioning and Site Closure
10. Legal Issues (liability, bonding, long-term stewardship)

The BMPs will also contain a data analysis that will address how BOEM can best apply these BMPs to the offshore environment, and if not, why? The analysis will also identify data gaps in the information and practices. The analysis will also present an adaptive management methodology to identify future gaps. The adaptive management framework will include indicators and criteria for the development of mitigations and the incorporation of new information into the regulatory program where gaps exist.

Current Status: The contract was awarded on in October 2010. To date the draft Worldwide Annotated Literature Database complete with annotations and the accompanying synthesis report to analyze the results of the worldwide literature survey have been submitted for review and comment. BOEM has responded with comments and is awaiting the next version of the report. BOEM also awaits the draft BMPs.

Final Report Due: 2015

Publications: Several presentations have been given to update the carbon capture and storage (CCS) community on the status of this research at preeminent CCS meetings (held by DOE) and conferences (the Annual Carbon Capture, Utilization, and Storage Conference).

Revised Date: January 23, 2015