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QUARTERLY TECHNICAL PROGRESS REPORT

ASSISTANCE TO THE STATES  
WITH RISK BASED DATA MANAGEMENT

Grant # DE-FG22-94MT94003

Submitted By:  
The Underground Injection Practices  
Research Foundation

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QUARTERLY TECHNICAL PROGRESS REPORT:

**ASSISTANCE TO THE STATES  
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MANAGEMENT**

## **INTRODUCTION AND PROJECT DESCRIPTION**

The following is a quarterly Technical Progress Report of the Risk Based Data Management Systems (RBDMS) project. The project, funded through a United States Department of Energy (DOE) grant is being administered by the Underground Injection Practices Research Foundation (UIPRF) which is the foundation to the Ground Water Protection Council (GWPC).

The Tasks of this project are as follows:

- Task I** Complete Implementation of a Risk Based Data Management System in the States of Alaska, Mississippi, Montana, and Nebraska.
- Task II** Conduct Area of Review (AOR) Workshops in the states of California, Oklahoma, Kansas, and Texas.

**PROJECT STATUS - TASK 1: Complete Implementation of a Risk Based Data Management System in the States of Alaska, Mississippi, Montana, and Nebraska**

## **TASK DESCRIPTION**

This project extends the implementation of a Risk Based Data Management System (RBDMS) in four states. In general it provides assistance to the states of Alaska, Mississippi, Montana, and Nebraska with converting data from existing data management systems where applicable; coding and internal testing of the RBDMS; preparing documentation, training, and technology transfer; plus project management.

## **DEVELOPMENT STATUS**

Development of *RBDMS* in the first grouping of states (AK, MS, MT, and NB) is complete. Participating states were provided with a final version of the UIPRF's RBDMS in March 1995. In addition, a comprehensive codes list was given to states which has provided standards for common terms and well construction details. During this reporting period, assistance has been provided to states with regards to data conversion from existing databases as well as training.

## Design Considerations

Long-term design considerations were used for the UIPRF's RBDMS. The system was designed to be a comprehensive database with ability to expand into multiple areas, including oil & gas production. During system design, applications such as GIS were anticipated so that adapting RBDMS to these and other applications could easily be initiated.

The system was also designed for general application nationally (i.e., not in just one state). This design premise was a critical objective and prompted the selection of Alaska, Mississippi, Montana, and Nebraska for initial participation in *RBDMS* development.

## *RBDMS* Features

- National standards are utilized for many fields, including API Well Number, DOE Operator Number, AAPG Field and Formation Codes, Geologic Naming Conventions, Well Status' and Types, Cement/Casing Descriptions, Well Location Descriptions, and others;
- Two Types of Environmental Risk Analysis Are Included (Risk Probability and Levels of Protection);
- *RBDMS* includes comprehensive well information for both producing and injection well types;
- Normalized and fully relational database;
- Access version 2.0 for Windows provide user friendly environment, quick learning curve, and allows users to self customize and expand the system. Access also uses Rushmore Technology (i.e., optimized queries) which facilitates high performance;
- *RBDMS* includes numerous automated features for performing functions related to Area-of-Review (AOR) Analyses, Environmental Risk Analyses, Well Evaluation, Permit Evaluation, Compliance Monitoring, Operator Bonding Assessments, Operational Monitoring/Tracking, and more;

- *RBDMS* contains more than 600 data fields, 40+ database tables, and 60+ standard reports (including fully automated EPA 7520 reports, several reports directed toward state field personnel, and form letter reports for such things as permit approvals, MIT notifications, etc.);
- *RBDMS* includes On-Line help formatted similar to a typical WINDOWS environment to facilitate quick response to users;
- *RBDMS* provides referential integrity to minimize errors in data entry and full security features so that only individuals with proper authorization can modify the database. Also, the system contains a host of update and edit criteria which serve to assist data entry personnel further avoid errors;
- *RBDMS* has a customized menu system allowing users to immediately and intuitively jump from one screen to any other in the database;
- *RBDMS* is Network compatible and upgradable to a Client/Server Platform; and
- Data Conversion from existing State and Industry databases can provide near instantaneous results.

## **What's Ahead?**

The UIPRF was awarded a grant from the USDOE containing three tasks which involve further enhancements to the RBDMS. Tasks 1 and 3 pertain to the RBDMS project and are as follows:

### **Task 1: Continue Implementation of the RBDMS**

This task is designed to continue implementation of the RBDMS. Rather than the UIPRF providing full implementation in a small group of states as in the just completed UIPRF DOE grant funded project, this project will continue the earlier UIPRF/DOE effort to assistance to all interested oil and gas producing states and the oil and gas industry with data management needs.

This task will lead to enhancements to the capabilities of the system such as; including tracking production accounting, surface facilities, water tracking, and enhancements to the RBDMS's AOR Module.

This task will assist states with the decision to utilize other available funding to invest in RBDMS implementation in their state. The effort will expanded technology transfer to states interested in the system but are not yet fully aware of the systems capabilities. This will include the development of automated demonstration software, as well as, the publishing of outreach

materials such as a brochure, manual and/or poster explaining the components of the system. These new outreach materials will be introduced at a nationwide workshop on the RBDMS to be funded through the project (task 3).

This task will allow additional consultation with states that have implemented RBDMS, as well as provide funding for members of the project team to go the interested states to make a demonstration and give that project team member an opportunity to further understand the specific needs of that state.

**Subtask 1.1 Coordination of UIPRF/AIP AOR and UIPRF RBDMS Projects and Development of a Detailed Plan to Enhance the AOR Capabilities Within the RBDMS:** For this subtask, an RBDMS Team Member shall attend each of the initial for AOR Workshops in California, Oklahoma, Kansas, and Texas. Specific AOR related needs shall be identified, as well as differences among states. The resultant plan shall also address specific enhancements to the existing RBDMS AOR Module and an approach for implementing the plan.

**Subtask 1.2 Expand RBDMS Presentations and Consultations:** This subtask will expand RBDMS presentations and provide consultations to States Oil & Gas and other pertinent state agencies, as well as EPA and other federal agencies such as Bureau of Land Management (BLM) and tribal organizations. This subtask will also include consultation with states that have RBDMS already implemented to provide maintenance and enhancements, as well as, additional training necessary to maintain the system.

**Subtask 1.3. Expansion of the RBDMS to Include New System Modules:** This subtask includes the expansion of RBDMS to include new system modules for production accounting for states and industry), surface facilities (pits, tanks, etc.), and water tracking (from source to disposal); and testing these modules in one state.

**Subtask 1.4. Development of RBDMS Outreach Materials:** This subtask involves the development of RBDMS outreach materials, including displays, brochures, and a limited automated demonstration version of the RBDMS.

### **Task 3: Conduct an RBDMS Workshop**

This task involves conducting a one-day RBDMS workshop for state and Federal regulatory agencies, tribal organizations, and oil and gas industry personnel. Outreach materials developed as a result of Subtask 1.4 shall be utilized in the Workshop. If possible, this workshop shall be scheduled around a Ground Water Protection Council Conference. The objective of this task is to increase awareness of the RBDMS and to encourage its increased use by state and federal regulatory agencies, tribal organizations, and the oil and gas industry. One result of this workshop may be increased cooperative agreements between the UIPRF and the states for future RBDMS implementation.

## **PROJECT STATUS - TASK II: Conduct Area of Review (AOR) Training Seminars**

### **PROJECT STATUS**

The purpose of these workshops is to acquaint state agency and industry personnel with the AOR variance methodology that has been developed and to seek input from the attendees concerning application of variance methods to injection fields in the state.

The benefits of these workshops are as follows:

- Assist both Direct Implementation and primacy State Class II UIC Directors in establishing workable AOR variance programs.
- Assist operators of both small and large oil and gas producing companies with Class II injection well AOR background and investigative methodologies for conducting AOR's and providing justification for seeking a variance from AOR requirements where applicable.

Each workshop attendee receives a copy of the document developed by a committee of the UIPRF entitled "Technical Criteria for an AOR Variance Methodology. This document includes the background information on UIC program requirements for AOR investigations; general methodologies for performing AOR investigations; data acquisition; alternative methods for evaluating a Class II injection well's AOR; criteria for obtaining exemptions from AOR requirements; and additional, more specific technical and regulatory material. Additional materials specific to each state where the workshops are held are added accordingly.

Workshops have been successfully completed in California and Oklahoma. The Kansas and Texas workshops are tentatively scheduled to take place in November. A turnover in state agency personnel in Kansas and Texas has altered the original timing of these two workshops. We are committed to completing these workshops prior to this grant's Final Report which is due no later than December 15, 1995.

## SUMMARY

- \* Project consultants have completed the design and installation of the only comprehensive, fully relational PC-Based Oil & Gas regulatory data management system (the Risk Based Data Management System) in the country. The implementation is complete in the states of Alaska, Mississippi, Montana, and Nebraska. Training, data conversion and technology transfer are ongoing.
- \* The Area-Of-Review (AOR) workshop series is ongoing with workshops having been completed in California and Oklahoma and additional workshops to be held prior to mid-December in Kansas and Texas.