

Technology's Impact on Production: Developing Environmental Solutions at the State and National Level

DE-FC26-06NT15567

Goal

The goal of the project outlined in this appropriation is to assist State governments in the effective, efficient, and environmentally sound regulation of the exploration and production of natural gas and crude oil through specific project efforts to address current issues. The items for the Interstate Oil & Gas Compact Commission (IOGCC) to undertake under this funding source are national in scope. However, the significant regional differences among States make "one-size-fits-all" programs unacceptable. One of the strengths of IOGCC is its ability to address these national issues while maintaining more local flexibility. There are two basic thrusts of these efforts: 1) research and 2) transfer of findings to appropriate constituencies. IOGCC is carrying out three projects consistent with the overarching strategies:

Task 1—Orphaned wells program guidelines. The plugging initiative will include an outreach component designed to inform the constituencies most impacted: State officials, Federal officials, the general public, and industry at several levels.

Task 2—Evaluate the impact of new technologies on environmental protection. This study will identify barriers to the use of technology in environmental protection and areas for State and Federal collaboration in improving regulatory programs.

Task 3—Assess technology issues associated with wells nearing the end of their productive life. The work under this task will include identification of cost factors in plugging operations, alternative materials, more effective techniques, regulatory barriers to new technologies and perhaps an examination of State bonding requirements.

Performer

Interstate Oil and Gas Compact Commission, Oklahoma City, OK

Results

Expected results are listed below by task.

Task 1—Orphaned wells. This project is designed to accomplish multiple goals and will be the most comprehensive approach to addressing this century-old problem. The project performer will seek:

To more accurately define "orphan wells," as compared with idle wells or non-producing wells.

To more closely estimate the number of orphan wells.

To clearly define the parameters of the plugging process, i.e., to determine to what extent are surface damages or equipment addressed.

To define the Federal agency role in the evaluation and plugging process.

To examine State plugging programs, including regulatory frameworks, funding mechanisms, existing prioritization programs, number of well pluggings, and the history of outreach to the public and industry.

To develop an appropriate funding strategy in the event Federal dollars are appropriated for the purpose of matching State plugging funds.

To define how these dollars will be allocated.

To develop recommended management and accountability practices for the matching funds program to include expenditure documentation consistent with existing State plugging programs.

To consider the applicability of processes and procedures to offshore orphan well locations.

To develop model educational messages or materials.

The “facts” research on this project is 90 percent complete. Researchers are currently verifying data and reconciling figures provided by the states. This comprehensive work is expected to be finalized by the end of the summer 2007.

Task 2— Evaluate the impact of new technologies on environmental protection. There have been multiple developments involving States, industry, consulting organizations, universities, and other government entities that have resulted in greater protection of the environment. It should be possible to quantify these efforts and use IOGCC’s communication network to expose all regulatory agencies to the value of technologies or voluntary program improvements. .

Research has been underway on this project for approximately two months and a draft survey of states has been developed. Following the finalization of the survey, states will be contacted for information on the contributions of technology on environmental protection. Additionally, a number of universities and industry experts will be interviewed to gain insights on the matter from their perspective. Research should be completed by the end of summer and writing will begin immediately thereafter.

Task 3—Assess technology issues associated with wells nearing the end of their productive life. There are questions regarding the permanence of traditional well plugging techniques and materials. There are also questions regarding the condition of existing wells plugged decades ago. The goals of this study include identifying cost factors in plugging operations, alternative materials, more effective techniques, regulatory barriers to new technologies, and perhaps an examination of State bonding requirements.

Benefits

Benefits accruing from this project include results that will assist State and Federal governments in effectively and efficiently managing regulation of the exploration and production of oil and natural gas in the United States in an environmentally sound manner. The net benefit to the Nation will be increased oil and gas reserves and production, thereby reducing America’s dependence on foreign energy sources—with the economic benefits that follow—while minimizing the environmental impacts of those operations. The task 1 study would also prove useful in documenting efforts by the States to regulate wastes. A separate benefit of this study could be to identify barriers to the use of technology in environmental protection and areas for State and Federal collaboration in improving regulatory programs.

Background

Task 1. IOGCC completed an in-depth evaluation of the scope of the country’s orphan oil and natural gas wells and proposed solutions to permanently sealing these wells. In 1992, IOGCC conducted a study entitled Produce or Plug: The Dilemma over the Nation’s Idle Oil and Natural Gas Wells. With this publication and the discussions it generated, IOGCC assumed leadership in exploring the role of government in the issue of orphaned wells and environmental protection. As part of its recent update of this publication, IOGCC developed guidance for regulatory programs to assist States in developing a plugging prioritization schedule that ensures that those wells at highest risk to the environment are plugged first. This project is designed to accomplish multiple goals and will be the most comprehensive approach to addressing this century-old problem.

Task 2: In the early 1990s, the U.S. Environmental Protection Agency undertook a study of the States’ efforts in regulating the disposal of wastes associated with oil and gas exploration and production. Since then, there have been a number of developments involving the States and other stakeholders that have resulted in improvements in environmental protection. These efforts can be quantified and the resulting data communicated through IOGCC’s communications network to expose all stakeholders to the value of technologies and voluntary initiatives in bolstering environmental protection in oil and gas E&P operations. IOGCC’s study would also help document States’ efforts to regulate E&P wastes.

Task 3. As a separate but related study, this initiative could be helpful in determining more cost-effective methods of preparing for the eventuality of well plugging. Questions need to be answered regarding the permanence of

traditional well plugging techniques and materials, as well as those regarding the condition of existing wells plugged many years ago.

Current Status (July 2007)

Task 1: The IOGCC staff has nearly completed a systematic evaluation of the number of orphan wells in each State, plugging and bonding requirements, the number of wells plugged, the number of wells waiting to be plugged, funding mechanisms for plugging funds, criteria for plugging, amount of tax funds allocated to plugging, and innovative state programs that identify previously unknown wells.

Task 2: The work plan for this task has been completed and a project manager and consultant for this effort have been identified. Five meetings and numerous telephone contacts have produced a rough work plan for this project. The consultant has begun talking to key experts in industry and government for additional direction and advice on project structure. A draft survey for states, universities and industry has been developed to facilitate data gathering.

The scope of the project will be reduced in the next quarter on task 3 due to a reduction in DOE funding to the project in FY2007.

Task 3: Planning continues on this project. Part of the revised scope of this project includes looking at long-abandoned wells for possible use as injection wells for carbon dioxide capture and storage. Task 3. The planning phase of this project has just begun. Part of the revised scope of this project includes looking at long-abandoned wells for possible use in injection wells for carbon dioxide capture and storage.

Project Start: June 29, 2006

Project End: June 28, 2008

Anticipated DOE Contribution: \$692,000 to be reduced by \$43,000 in a contract modification

Performer Contribution: \$177,000 (25 percent of total)

Contact Information

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Publications

Planned publications at this point include a well-plugging prioritization schedule and a tentative asset allocation plan in the event of appropriation from the U.S. Congress.