

## **Alaska Oil and Gas Exploration, Development and Permitting Project**

**DE-FC26-02NT15446**

### **Program**

This project was selected in response to DOE's solicitation DE-PS26-02NT15378, Identification and Demonstration of Preferred Upstream Management Practices (PUMP III) for the Oil Industry. The goal of the PUMP III program is to identify, develop, and demonstrate preferred upstream management practices and associated technology transfer that support the oil industry producers in a region. The emphasis is information access and regulatory barriers whose resolution would result in an increase in near-term oil production from onshore or offshore Federal, State, Tribal, or private land. Proposed projects enable oil permitting agencies to make decisions more quickly or that are based on better scientific information about the environmental risks of a given operation.

### **Project Goal**

The overall goal of this project is to significantly increase oil production under the ethic of "least social, environmental, and economic impact." Three objectives support that goal:

- Motivate companies to make new assessments of oil potential from improved organization and presentation of existing public well data.
- Create a foundation for electronic permit review processes that is shared among related agencies and the public and results in "smarter" projects approved in less time.
- Use geography as an organizing principal to bring shared interests together so that data are managed logically, consistently and efficiently.

### **Performer**

Alaska Department of Natural Resources (DNR)  
Anchorage, AK

Alaska Oil and Gas Conservation Commission (AOGCC)  
Anchorage, AK

### **Project Results**

The project has advanced technologies to expand public access to geotechnical information. It has made progress towards its goals in:

- Providing public subsurface geoscience and engineering information (e.g., well logs) on-line. A geographic information system (GIS) front-end has been developed and deployed.
- Developing an online diagnostic to determine and access required permit applications (due December 2005).
- Building web-based software for automating the mechanics of coordinated Alaska Coastal Management Program consistency reviews and storing permit information in a publicly accessible database (due March 2006).
- Developed a cooperative multi-agency GIS for sharing land status and resources data to support oil and gas planning and permitting decisions using open standards and database technologies that integrate with a wide range of oil- and gas-related business applications.

- Implementing an online customer identity management system that is shared among agencies (due December 2005).

### **Benefits**

Alaska is a challenging work environment, making it difficult to attract new players to mature fields. Despite these challenges, State oil and gas lease offerings are attracting exploration and production companies new to the State. Declines in Prudhoe Bay, Kuparuk River, and other fields have been offset in part by development of neighboring satellite fields, helping to maintain steady revenues to both producers and resource owners. The role of independents in this effort to increase production has increased steadily in recent years.

Structural changes led by the governor and senior resource managers have helped to streamline the permit process. This new regulatory process is now being captured in an automated online system that will support shared standards and collaborative decision making. These changes have helped to simplify the program, clarify requirements, and eliminate redundancies between agencies.

The State's Permit Streamlining Accomplishments provide leadership in the area targeted by this project. They have:

- Significantly revised the Alaska Coastal Management Program.
- Reorganized permitting agencies and consolidated responsibilities within DNR.
- Created a large project permit office in the DNR.
- Clarified rules and procedures for oil spill contingency planning.
- Created "permit-by-rule" air quality permitting

### **Background**

Alaska has nearly one quarter of the Nation's reserves of crude oil, at least five billion barrels of proven reserves. The American Association of Petroleum Geologists reports that the 1995 National Assessment identified the North Slope as having 7.4 billion barrels of technically recoverable oil and over 63 trillion cubic feet of natural gas. From these resources, Alaska accounts for roughly one fifth of the nation's daily crude oil production, or almost 1 million barrels per day from over 1,800 active wells. Total daily production peaked in the late 1980s, and declines have been limited through the addition of new fields and new extraction technologies for existing fields.

The number of exploration wells drilled per year in Alaska must dramatically increase to increase oil production. A strategy to support this goal is to increase the number of active independents operating under lease. As of February 2004 there were 27 independent oil companies operating in Alaska. One independent went from lease issuance to permits in hand for a North Slope offshore well in 3 months.

Permit streamlining supported through this grant builds upon the institutional and regulatory changes implemented by the State of Alaska. Currently, State agencies use multiple, independent systems to identify, authenticate, and authorize customers for online transactions. Consumers of online State services may be required to manage multiple online "profiles," and during a permit review process, valuable time related to short field study windows may be lost reconciling differences in applicant information when agency records disagree. This project advances the concept of a unified permit and sets the framework and foundation for its implementation.

## **Project Summary**

AOGCC is the repository for production and well information for Alaska's oil and gas wells. An important part of the commission's mandate is to provide the non-confidential portion of well and production data to the public. Past practice has consisted of allowing members of the public to come to the commission's office to view and copy the information.

Over 5,500 wells and 800,000 documents have been electronically entered into the public domain via the Internet. Statewide searches and downloads are supported, including geographic-based searches, with the most complete data for Alaska's leading oil and gas basins, Alaska North Slope and Cook Inlet. Previously, well logs from wells drilled prior to 1986 were available to the public only as paper versions stored in a central Anchorage office. Digital versions of most of those well logs have been acquired for public distribution through the commission's website. Public acceptance of the new geotechnical web site has been positive, and customer feedback continues to help guide site improvements. This effort offers automated map-based searches for directional data, well header information, well history files, log files, well production data, administrative and field files, and commission orders. The applications use a shared GIS model that eliminates the need to duplicate spatial data. Online self-help training videos help guide new users through a comprehensive training program. Detailed Alaska well and production data are now available at: <http://alaska.gov/aogcc/publicdb.htm> .

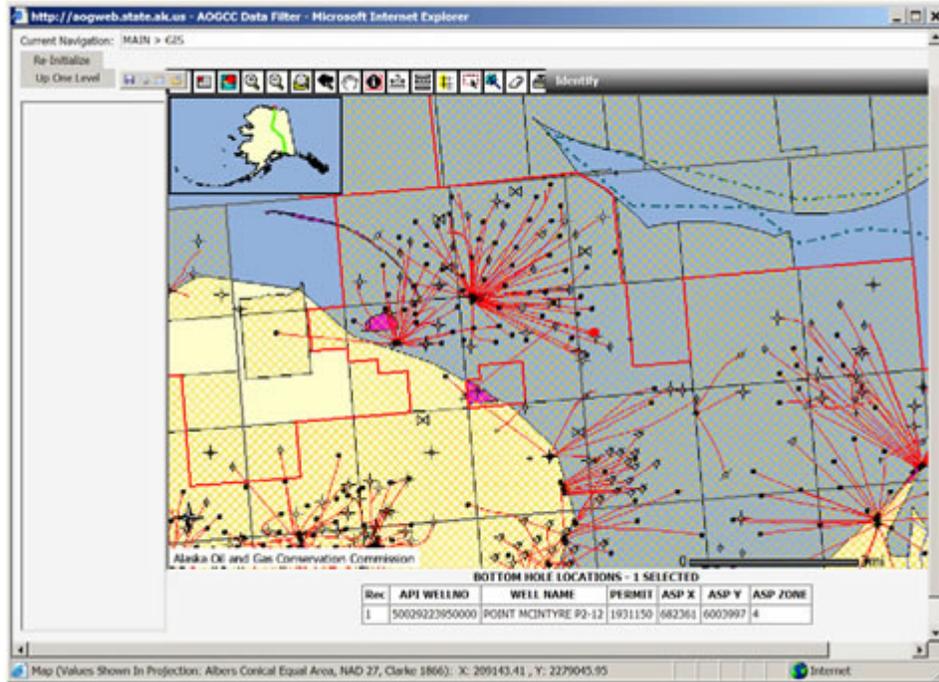
A new online permitting system has been advanced. The solution is centered on a shared-decision support environment to reduce project review cycle time. Coastal Consistency Reviews will be automated in this new shared environment in early 2006; Land Use Permits required for surface use permits related to environmental controls will follow.

## **Current Status (August 2005)**

Online publication of geotechnical data remains on track to meet goals and the schedule. The majority of public geotechnical publications with GIS search capability are currently available through the AOGCC website at <http://alaska.gov/aogcc>. Recently acquired pre-1986 well log data is to be added by March 2006.

Automation of the Coastal Consistency Review and Land Use Permit process is in the software coding stage. The administration's structural changes to the permitting process that took place over the past three years strengthen the overall goal of improved permitting and simplify the automation environment. Online products first will move to production in early 2006.

The goal to utilize geography as an organizing principle for multiple agencies remains on track. Enterprise GIS components went into production during the last quarter of 2003 and into the first quarter of 2004 using open GIS standards supported through the Oracle spatial data object geometries model. A distributed multi-agency GIS is part of Task 1 in support of geotechnical and lease boundary publication. Spatially capable permitting applications and query tools are central to delivery of permit automation goals.



Example of web-based GIS search for well data at Point McIntyre oilfield on Alaska's North Slope.

### Publications

Semi-Annual Technical Reports have been filed with DOE.

**Project Start:** September 30, 2002

**Project End:** March 30, 2006

**Anticipated DOE Contribution:** \$ 1,393,600.

**Performer Contribution:** \$601,100 (30.1% of total)

### Other Government Organizations Involved

Alaska DNR

AOGCC

### Contact Information

NETL - Jesse Garcia ([Jesse.Garcia@netl.doe.gov](mailto:Jesse.Garcia@netl.doe.gov) or 918-699-2036)

DNR - Richard McMahon ([richard\\_mcmahon@dnr.State.ak.us](mailto:richard_mcmahon@dnr.State.ak.us) or 907-269-8836)

AOGCC - Robert Crandall ([bob\\_crandall@admin.State.ak.us](mailto:bob_crandall@admin.State.ak.us) or 907-793-1221)