Program Support Needed

The ability to exchange electronic information between industry operators and regulatory agencies and between state and federal regulatory agencies offers several significant promises that the GWPC has been working to fulfill:

- Increasing the online availability of the technical and management information the petroleum industry needs to expand and improve its exploration and development programs and that the DOE NETL needs to track production and permitting trends.

- Reducing the administrative burden of coordinating regulatory reports through automated data quality checks that eliminate transcription errors and other data omissions.

- Speeding agency response times to permit applications and production reports.

- Lessening the country's dependence on foreign oil and gas by encouraging domestic production while safeguarding the environment.

The GWPC has been applying its accumulated technical knowledge base, leveraging available funding resources, and providing communication and liaison services to help channel support for the RBDMS eCommerce Initiative in installations nationwide. However, resources through state channels remain scarce, and the mission, large. The GWPC greatly appreciates support at the national level and welcomes such partners in this ongoing and important work.

Additional Information

The ePermit schema is available at http://www.rbdmsonline.org/XML/batch_regReporting.xsd. HTML documentation: http://www.witsml.org/regulatory/100rc/doc/WITSML_Schema_docu.htm and http://www.rbdmsonline.org/xml/RBDMSRegulatory/Doc/batch_regReporting.html.

The eReport schema is available for review at http://www.rbdmsonline.org/XML/eReport3_6.xsd. HTML documentation: http://www.rbdmsonline.org/xml/ver3_6Doc/eReport3_6About.html.

For more information about the GWPC's success in sharing federal lease stipulation and state agency regulatory data with industry operators, please view the short Flash movie at http://www.rbdmsonline.org/fedland/prospectonline/flash/ProspectOnline0609.html.

RBDMS and the RBDMS eCommerce applications were developed through grant funding from the Department of Energy's National Energy Technology Laboratory. RBDMS software applications are used in 21 oil and gas agencies across the United States.

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Program Partner: DOE National Energy Technology Laboratory (NETL)
Other Federal Agency Participants: BLM, MMS, and EPA
Industry Group Participation: API, Energistics, and mineral extraction companies nationwide
State Oil and Gas Agency Participation: 21 State agencies

Business Solutions:

The Initiative is part of the **NETL's Oil and Gas Environmental Solutions Program,** which seeks to increase domestic production by developing technologies that reduce the cost of effective environmental protection. The Initiative comprises five major software programs:

- **RBDMS.NET Desktop** to replace obsolete software with a newer, more robust platform to make data easier to retrieve and to analyze
- **Data Mining** to provide public Web access to regulatory agency data
- **ePermit** for oil and gas permit processing
- **eReport** for oil and gas production and injection reporting for trend analysis
- **RBDMS for Water** to track environmental effects of fossil fuel and mineral extraction

Benefits:

- Ability to research prospects and production trends, file permit requests, and report production for hundreds of well records at once.
- Reduced cost of data exchange between industry and agencies.
- Improved decision-making for exploration and drilling equipment programs.
- Maximized recovery from marginal wells at significant cost savings.

Priorities for 2008-2009

"The GWPC and its member-state oil and gas agency directors thank Congress for its continued support of RBDMS, a program that provides the reference data necessary to develop mineral resources and to protect the environment. We respectfully urge you to continue funding at last year's appropriation level of $1.7 million."

--Mike Paque, GWPC Executive Director

The GWPC launched the Risk Based Data Management System (RBDMS) eCommerce Initiative to reduce the costs of exchanging environmental and production data between regulatory agencies and the petroleum industry through a set of Web-based .NET business solutions. These five solutions, briefly summarized at left and discussed in greater detail inside, are critical tools in analyzing petroleum production trends and the environmental effects of extraction operations. Best of all, the applications are easy for industry and agency managers with little computer experience to use because they are designed with the express purpose of exposing data for open exchange in standard formats. Therefore, the users' focus is always on *using* information as opposed to *searching* for it.

This paper describes the now work in progress nationwide to roll out these five applications. For two agencies, this work involves complete replacement of legacy data management systems with all of the RBDMS eCommerce applications: the Mississippi Oil and Gas Board (MSOGB) and the Oklahoma Corporation Commission (OCC).

The MSOGB has been using the original release of Access-based RBDMS for the last 12 years. While this term of service is a testament to the solid design foundation of RBDMS, the Board needed greatly upgraded capabilities to serve oil and gas information over the Internet. When work is complete, the MSOGB will boast the most comprehensive RBDMS installation in the nation, one that will include the premier release of the RBDMS Finance and Accounting module.

Likewise, OCC is beginning its work to install the full suite of RBDMS.NET applications to upgrade from a difficult-to-maintain set of disparate applications including one "green-screen" COBOL application of mid-20th Century vintage.

One California operator estimates that the automated approval of routine permits could increase production as much as 25,000 barrels per year from just one of that company's fields in Kern County… With agencies nationwide reporting historic high numbers of applications to drill, continuing RBDMS program work is urgent for helping to sustain the U.S. economy and way of life.

Work in Progress
RBDMS.NET
The next-generation RBDMS.NET program is now in development. Easier to customize to accommodate that states' differing statutory requirements, the application also will make data more accessible by casual computer users. RBDMS.NET will run either on the desktop or in a Web browser and will include sophisticated workflow and automated notifications to flag the occurrences of regulatory deadlines, permit violations, and analytical parameter exceedances.

Data Mining
RBDMS Data Mining is a multi-tiered application developed with .NET, GIS and XML technologies. The user interface for RBDMS Data Mining is a major reason for its effectiveness. The Web site pairs a data view and full-text search with a GIS window. In addition to its powerful spatial analysis and data organization and retrieval capabilities, RBDMS Data Mining will soon feature a set of electronic reports for NETL's Office of System Analysis and Planning. The reports and other features of RBDMS Data Mining will enable NETL to analyze trends in permitting, production, reservoir decline curve trends, barrels of water produced versus oil and gas for purposes of resource prediction for the United States fossil fuel supplies.

ePermit
With its federal partners, the GWPC is working with oil and gas regulatory agencies in four states to launch an electronic permitting application. The ePermit application will allow industry operators to submit permits over the Internet. An XML schema that defines the regulatory lifecycle of oil, gas, and associated wells has been developed in compliance with the industry-accepted WITSML™ (Wellsite Information Transfer Standard Markup

Language) family of data exchange standards. Work on the programming infrastructure to support single-permit and batch uploads is now underway. ePermit is slated for initial rollout and testing in Colorado in third quarter 2008.

eReport
eReport automates the receipt of monthly reports of production and disposition of oil, gas, and water from operators, information that is vital in tracking production trends nationwide. The application is based on the eReport schema, an XML format the GWPC developed with its state agency partners. The format has been accepted as an API-recommended format. eReport is in use in Nebraska, Utah, Montana, New York, North Dakota and Pennsylvania. New eReport .NET installations are underway in Mississippi and Arkansas, and Pennsylvania is now upgrading its installation from Access to the newest .NET version.

RBDMS for Water
In response to the need to track water quality and quantity, the GWPC expanded RBDMS into source water quality protection, laboratory information management, produced water management, and water quantity assessment. RBDMS for Water was developed to help regulatory agencies track baseline water quality and quantity data to evaluate permit applications and application revisions. Innovative means of grouping locations, analysis parameters, and observation results also provides for creating and displaying varied formats of reports with as few as three clicks. In Phase 2, Web-enablement will allow oil and gas operators and mine owners to query the agency database to track compliance with water information reporting requirements and, ultimately, to submit water quality reports from their third-party

laboratories to the agencies. RBDMS for Water is in use at the Ohio Department of Natural Resources, with other state agencies expressing interest in expanding the application.

Benefits of the Initiative
With many agencies reporting record levels of permit applications and industry operators requesting expedited decisions for their own business purposes, the need for data exchange automation is clear. But beyond the myriad business considerations, the flat-line trend for gas production and the declining trend for oil production make the need for superior data systems that can be used to assist in exploration and development programs a priority for sustaining the nation.

With the advances the RBDMS eCommerce Initiative offers, industry will be able to access state regulatory Web sites and use the data downloaded in significant new ways to encourage cost-effective production of domestic oil and gas

For example, Web-based interfaces to agency oil and gas production data such as Data Mining, ePermit, and eReport will help industry target new plays. Production trends and risk can be assessed across lease, state, federal, and other boundaries more quickly, so exploration geologists can develop prospects and to drill and operate their leases more efficiently.

Also, the ability to receive immediate approval of a well recompletion or workover permit will allow industry to manage drilling and equipment programs more effi-

This exhibit shows the rich user interface of RBDMS Data Mining, which has been installed in Nebraska, Mississippi, and Alabama, and is slated for installation in Oklahoma and other states. The display shows oil and gas activity and groundwater well locations in a portion of northwest Nebraska.

ciently. For example, an operator could re-work a well the same day it went down, thus reducing rig down time.

Web applications like ePermit and eReport will help industry maximize the recovery of oil and gas from marginal wells at significant cost savings through new technology, redrilling, or horizontal drilling. The cost savings to drill a well horizontally from an existing well rather than a grass-roots well is at least $300,000. By keeping 250 of these wells in operation over the last 5 years, the oil and gas industry has saved more than $75,000,000 in North Dakota alone.

The RBDMS eCommerce Initiative offers the data exchange and automation opportunities important to
- Increasing domestic oil and gas production
- Decreasing dependence on foreign oil
- Boosting tax revenues.