

successfully and began producing 100 barrels of oil per day, 20 times better than the best conventional well in the field.

Estimated recoverable reserves for the new well alone are 200,000 barrels of oil. The success of the well has spawned a "miniboom" in drilling in the Dundee Formation. As a direct result of the project, 9 new horizontal wells have been permitted for drilling in Crystal Field, and 20 to 30 horizontal wells have been permitted in geologically similar fields in the Dundee Formation.

Further development in Crystal Field alone is expected to produce an additional 2 million barrels. If other abandoned Dundee fields are redeveloped in a similar manner, the additional oil production will probably be about 80 to 100 million barrels, worth about \$210 million in tax revenues alone. This is oil from existing U.S. fields with proven production, not from riskier new fields in environmentally sensitive regions or those controlled by foreign nations.

### **"Seeing" Oil and Gas Through Old Well Casings**

**E**vidence is mounting that large amounts of remaining natural gas and oil have been missed or bypassed by past drilling and production technologies. In some cases wells were unknowingly drilled through these deposits in search of more productive "pay zones." Once metal casing is inserted into the wells, it has been impossible to use electrical resistivity tools (one of the most common hydrocarbon detection techniques) to pinpoint missed deposits. The metal casing created too much interference, rendering conventional electrical resistivity logging devices ineffective - until now.

A DOE-sponsored research project with ParaMagnetic Logging, Inc., has given companies a way to "see" through the metal casing. The advanced tool, developed with joint funding from the Gas Research Institute, overcomes the interference problem. Companies are now able to go back into 30- and 40-year-old fields, some of which were never "logged," and use existing wells to pinpoint untapped hydrocarbons. By avoiding the expense of redrilling, this technique can lead to the economical production of oil and natural gas that might otherwise have been abandoned. The technology has now been licensed to two major oil service companies.

*A DOE Fossil Energy-sponsored research project with ParaMagnetic Logging, Inc., has led to a way to "see" through [a well's metal casing... Using it, companies are now able to go back into 30- and 40-year-old fields, some of which were never "logged," and use existing wells to pinpoint untapped hydrocarbons.*