

## **Shining a Light: WellDog's Laser-Bearing Tool Lends Greater Certainty to CBM Development**

by James Mahony, New Technology Magazine, April/May 2005

WellDog's application of Raman spectroscopy to a practical commercial service that measures natural gas content and reports results immediately comes none too soon for the coalbed methane industry, according to James Mahony.

Research into the behavior of light, conducted in the 1920s by C.V. Raman, remained largely pure science with few practical applications until the development of intense light sources such as lasers. WellDog has miniaturized a downhole laser-based Raman spectrometer to analyze gas in subsurface coals. WellDog uses this spectrometer to collect data from the wellbore fluids. The information is sent via satellite link to WellDog's Data Center for analysis and reporting.

Geologists rely on information about permeability, porosity and gas content when analyzing a play. Core sampling is a typical test conducted to obtain these reservoir variables, but the method is considered laborious due to the delays involved. Bob Lamarre, a Denver-based geologist who has worked most U.S. coal basins over the past 20 years, has reservations about coring, even though he acknowledges it is the accepted method of testing. "The problem with [coring] is that," the article quotes Lamarre, "because so many different steps are involved, it can be a little bit inaccurate, but most importantly it takes three to four months after you've cored to get the data."

WellDog claims an edge in wait time, as results are available within hours of testing and also claims its results are at least as accurate as coring.

In Wyoming, Black Diamond Energy, Inc., has used the tool on approximately 20 shallow wells in the Powder River Basin. "Eric Koval, the oil and gas producer's chief executive officer, is satisfied with the results," Mahony's article reports.

Black Diamond did a blind test, and "when they came back to us with the result it was pretty much spot on," Koval is quoted in the article. "As for accuracy, he says WellDog is comparable to, and may be more accurate than, core sampling."

Minimizing environmental impact is also a goal of WellDog's service, according to Wayne Greenberg, CEO of Laramie-based WellDog, Inc. The service can help CBM companies "eliminate the bottom 20-40% of wells that should not be drilled," the article states, typically resulting in fewer roads, power lines and less infrastructure.

Read the entire article in the April/May 2005 issue on pages 29 and 30.