

Site Characterization of Abandoned Wells and Pipelines

In 1859, Colonel E. L. Drake was credited in supervising drilling of the first recorded successful oil well in Oil Creek, outside Titusville, PA. This historic event heralded an era of oil and gas exploration across the Appalachian basin. Although thousands of wells were drilled, few of these locations are known today.



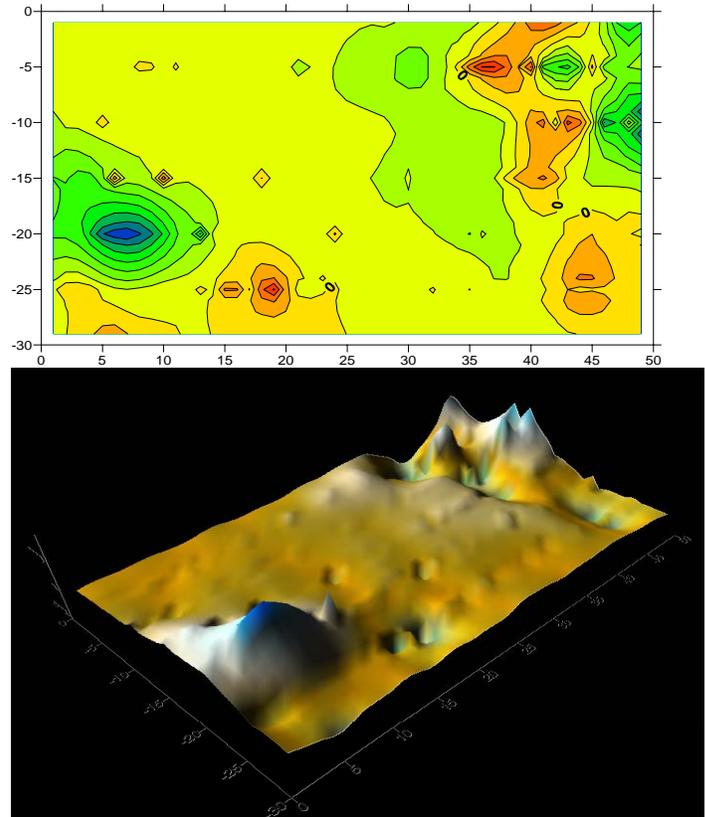
The above picture shows an abandoned (well-hidden) drilling rig in rural Appalachia. The forested hillside was able to camouflage the rig.

Thousands of undocumented or poorly documented oil and gas wells scattered around the country need to be found and plugged for safety and environmental concerns. In the Appalachian Basin, coal companies are required by law for safety and environmental reasons to find and plug these abandoned wells before excavating coal. Open holes act as conduits for flammable gas, creating hazardous conditions. Abandoned boreholes can also act as conduits for surface water which act as communication pathways across stratigraphy, contaminating public drinking aquifers.

Modern electromagnetic (EM) methods can be used to determine the location of abandoned wells or pipelines when no physical surface expression exists. LM Gochioco and Associates is experienced in all aspects of acquisition, processing and interpretation of modern high-resolution EM data.

The founder, Lawrence M. Gochioco, P.G., has over 15 years of diverse near-surface geophysics experience. He has published over 25 technical papers and feature articles in various journals & magazines, and is an editor of his professional society (SEG). The company provides a wide spectrum of near-surface geophysics services and consulting.

The two electromagnetic profiles shown below were acquired in West Virginia. The peaks & troughs in the figures are associated with an abandoned well that needed to be plugged.



Innovative EM methods offer cost effective solutions to characterize abandoned wells and pipelines. The alternative is using more expensive excavation with heavy trenching equipment which can adversely impact the environment.

LM Gochioco and Associates Inc. have broad experience integrating various geophysical technologies into hydrology, geology, environmental, and engineering applications. We possess diverse experience and expertise in near-surface geophysics to suit your subsurface imaging challenges.