



D36 Forensic Geophysics: Can This Discipline Save CSI Time and Money?

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After attending this presentation, attendees will discover various geophysical techniques available today that can reduce search time for buried evidence in various substrates.

This presentation will impact the forensic community and/or humanity by enlightening the forensic disciplines to the assets of forensic geophysics regarding searches for buried evidence. Attendees will learn how this discipline can determine exact location of evidence within a minimal amount of time utilizing non-invasive, non-destructive techniques.

Geophysical methods have been applied for decades in subsurface geological investigations for oil and gas exploration, as well as environmental issues. However, the forensic utility of geophysics has only recently become generally appreciated. The use of geophysical methodologies, such as Ground Penetrating Radar (GPR) and Electromagnetic (EM) sensing has proven invaluable in the location of buried evidence within various mediums. GPR can detect burial sites (homicide or otherwise) in natural soil or concrete. The advances of EM systems have improved to the point that some EM antennas can discriminate between metal and non-metal objects in the ground. With this more capable technology, targeted objects can range in size from a buried rifle to an expended bullet in a tree.

Forensic geophysics can assist law enforcement in locating clandestine graves and buried evidence with non-invasive procedures. The "line search" technique is replaced with a GPR and EM grid search that generates real-time data pinpointing the exact location of evidence. This data is also used to produce scaled maps documenting where the evidence was found. Forensic geophysics can help eliminate long hours dedicated to search and documentation allowing law enforcement personnel to concentrate on the task of perpetrator apprehension.

Geophysics, Electromagnetic Imaging, Ground Penetrating Radar