Restoration Technology Transfer Speakers Series
May 2025

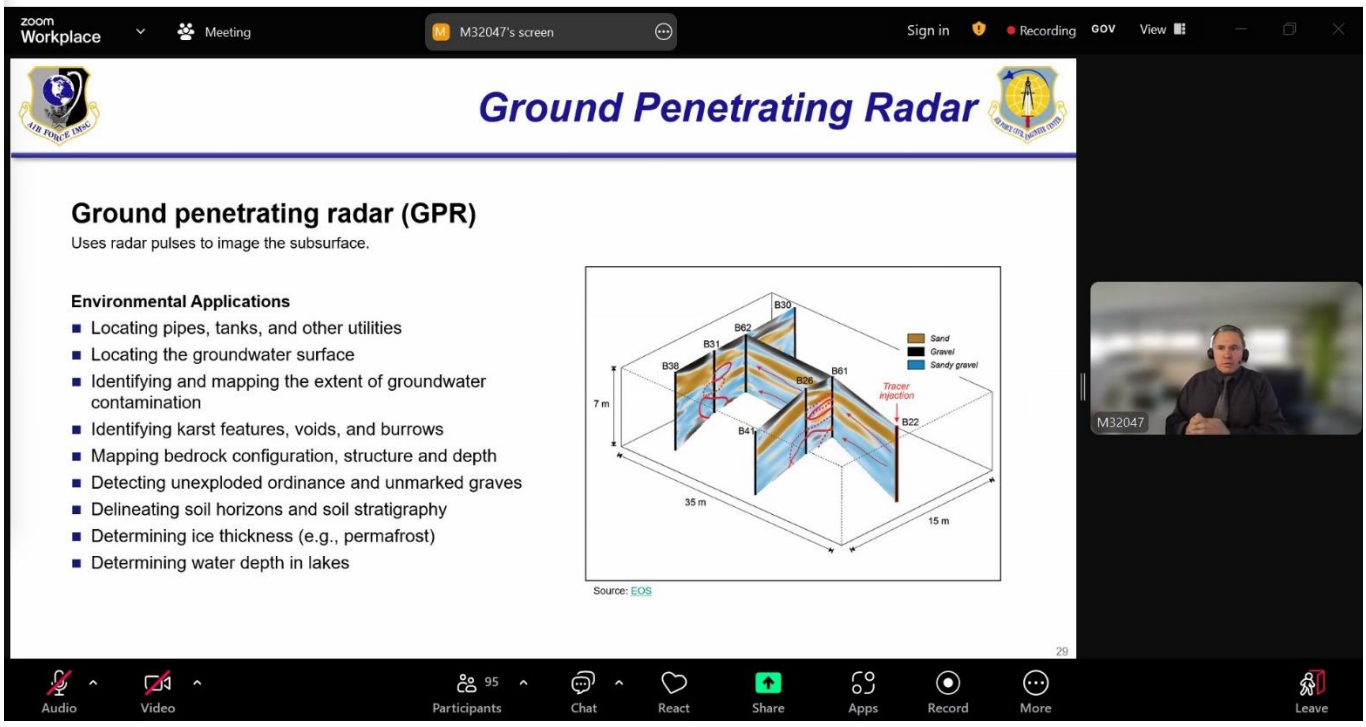
Near-Surface and Borehole Geophysics Techniques Available for High-Resolution Site Characterization Part 1 of 2

Presenters: Jaime Hincapie, Ph.D. – Noblis

Near surface geophysical (NSG) methods are minimally invasive, non-destructive technologies that use the physical properties subsurface materials to aid in understanding complex geologic and hydrogeologic settings. The methods include:

- Transmission of mechanical vibrations – seismic methods
- Detection of atomic-level particle physics – quantum physics methods
- Resistance to the flow of electricity– electrical methods
- Transmission of electromagnetic signals – EM and ground-penetrating radar methods
- Variations of Earth's magnetic field - magnetometry
- Variations of Earth's gravitational pull – gravimetry

While NSG can be implemented as standalone technologies, they are often used in tandem with other ancillary methods. These geophysical methods help identify optimal locations for drilling to confirm and further extrapolate the initial findings. They are decision-making tools widely used in geotechnical engineering and environmental investigations among others. NSG covers large areas quickly and provides valuable information at a fraction of the cost of invasive exploration techniques. Preliminary results from some methods are available in the field and provide timely information that can be used to optimize available resources and reduce costs and time in the field.



Dr. Jaime Hincapie presents details on several NSG technologies.

If you are unable to attend the broadcast, a recording as well as the presentation slides, will be posted on eDASH: https://usaf.dps.mil/teams/eDASH/WPP/Speaker%20Series/Speaker%20Series.aspx

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