**shallow underwater advanced geophysical classification survey**

**Lessons learned at East Coast site**

*Ricky Mataitis, (Jacobs, Albuquerque, NM., USA)*

*Steve Saville (Jacobs, Knoxville, TN., USA)*

*Matthew Cook (Seaview Geophysical, Dexter, MI., USA)*

*Kevin Kingdon (Black Tusk Geophysics, Vancouver, BC, CA)*

*David Sinex (Black Tusk Geophysics, Vancouver, BC, CA)*

**Abstract**

This presentation includes a case study and lessons learned from an underwater Advanced Geophysical Classification (UWAGC) project. During the summer of 2024, over 150 acres of a shallow tidal Munitions Response Site were surveyed using the UltraTEM Marine AGC system. While UWAGC technology has been fully demonstrated, this project presents lessons learned from UWAGC in a production setting for subsequent UXO diving to remove classified sources.

The lessons learned to be presented focus on developing then applying sensible measurement quality objectives (MQO) for the underwater setting. Developed prior to fieldwork, some MQOs required adjustment after further understanding the capabilities and limitations of the technology and the nature of shallow-water UWAGC. Definable features of work and MQOs requiring adjustment based on the unique aspects of the project include: 1) installing and using an instrument verification strip and QC seeds over several months in a dynamic underwater setting; 2) defining site coverage requirements and acceptable exceptions based on access limitations, obstacles, etc.; 3) maintaining sensor attitude and altitude when towed in a shallow-water environment; and 4) developing a dynamic threshold for the amount of noise acceptable in production data.

The lessons learned from this project provide a better understanding of the capabilities and limitations of shallow water UWAGC, and may facilitate others in the development and success of UWAGC project goals.