Geophysical Services

Performing geophysical surveys help to reduce and/or remove the risk of Material Potentially Presenting an Explosive Hazard (MPPEH) to humans and the environment. By properly locating Munitions and Explosives of Concern (MEC), geophysical technologies support munitions response programs during any project's phase, from site investigation to remedial action.

USA provides the full range of analog and digital geophysical services on projects for the Department of Defense (DoD), government entities, private entities, and commercial land developers.

USA's capabilities support terrestrial and underwater surveys, using the latest technologies and software to ensure data collection and processing accuracy. USA has performed more than 300 geophysical surveys in all types of terrain and conditions worldwide, including Puerto Rico, Guam, South Korea, throughout the United States, including Alaska and Hawaii.

Geophysical technologies include:

Analog All Metals and Ferrous Metals Detectors with Analog Test Strip design, coverage and firewalled blind seeding design:

- Minelab E-Trac and Explorer II
- Minelab underwater Excalibur
- Whites DFX 300
- Whites underwater Surfmaster Pulsed Induction (PI)
- Schonstedt GA-52CX in standard handheld and down hole configurations

Digital Geophysical Mapping (DGM) positioned with Real Time Kinematic Differential Global Positioning Systems or traditional Line/Station/Fiducials with Instrument Verification Strip design, firewalled blind seeding design, data collection/processing/analysis/QC/delivery. Sensors and software include:

- EM61-MK2A in cart, stretcher, towed array, and underwater modes
- The 2-meter wide towed array's overlapping sensors provide improved detection of smaller objects (e.g. 20mm projectiles)
- Easily ships overnight
- G-858 in land and underwater modes
- Geosoft's Oasis montaj data processing software with:
    - ◆ UXO Land and
    - ◆ UX-Analyze extensions

USA's Towed Array performing a dynamic DGM survey at a commercial site in El Paso, TX
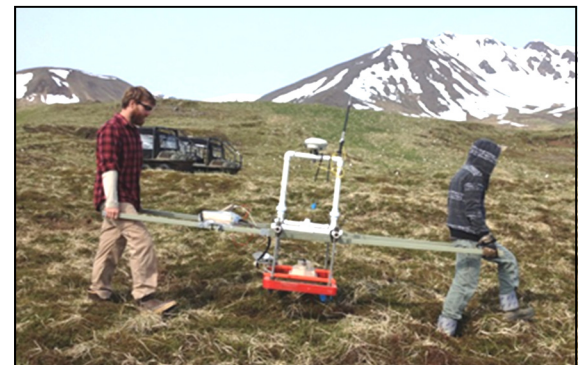
EM61-MK2A in Stretcher Mode reduces sensor noise and facilitates dynamic DGM survey in rough terrain, Adak, AK

EM61 mounted on ROV during Underwater MEC Survey around environmentally sensitive coral

Analog geophysical survey using Schonstedt ferrous metal detector, Camp Maxey, TX

USA Environmental, Inc.
A Small Business • Munitions Response Services

Professionalism
Responsiveness
Cost Effectiveness

Advanced Geophysical Classification Technologies and Capabilities

Deputy Under Secretary of Defense for Installations and Environment, Dr. Dorothy Robyn, has noted that technologies using Advanced Classification (AC) sensor technologies that can discriminate between MEC and harmless metal objects can improve MEC cleanup.

In 2011, USA recognized that Advanced Geophysical Classification (AGC) technology was working, and would ultimately change the way our industry applied geophysics to the DoD's Military Munitions Response Program.

The ability to reliably use an array of transmit coils, coupled with 3-axis receiver coils, to generate polarizability curves that could be matched to a library of Targets of Interest (TOI), e.g. munitions, while classifying a majority of the geophysical anomalies as Non-TOI, e.g. clutter, marked a significant technological improvement that was destined to stay.

USA is DoD Advanced Geophysical Classification Accreditation Program (DAGCAP) Accredited and experienced in collecting Dynamic and Cued (Static) AGC data with AGC sensors, and trained to process and analyze AC data using Geosoft's UX-Analyze software. USA also partners with other DAGCAP Accredited AGC contractors to provide depth in capability when needed.

Recent training experience includes working with the Navy's portable cart-mounted Time Domain Electrometric Multi-sensor Towed Array Detection System (TEMTADS) 2x2 (now MetalMapper 2x2), for their project on Vieques, Puerto Rico, where UXO technicians performed setup, calibration, static background data collection, Vieques-specific TOI library data collection, cued data collection, data management and transfer. TEMTADS was subsequently used, in Cued mode, to improve/reduce the number if digs required to clear a set of transect DGM data.

USA successfully completed a Small Business AGC Demonstration contract through ESTCP, using available MetalMapper data from two portions of the Spencer Range Live Site Demonstration.
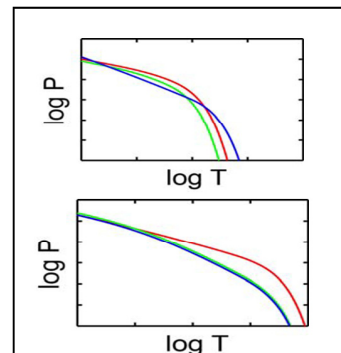
In 2017, USA was awarded Remedial Action (RA) for the Motlow Range Complex, TN, our first AGC project.

USA Personnel collecting dynamic data with the TEMTADS, Blossom Point, MD

AGC Dynamic Image Map and Cued Polarizability Results for Non-TOI (Top Curves) and TOI (Bottom Curves)

Top curve denotes anomaly is OK to be left in place. (Non-TOI).

Bottom curve denotes anomaly should be investigated (TOI).

Collecting Cued AGC Data to Produce Polarizability Curves to Characterize the Buried Object