MTADS DATA COLLECTION IN SUPPORT OF THE ESTCP UXO DISCRIMINATION STUDY

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A series of geophysical surveys were conducted as part of the Environmental Security Technology Certification Program (ESTCP) Unexploded Ordnance (UXO) Discrimination Study in the spring of 2007. The demonstration site was located within Site 18 of the Former Camp Sibert FUDS, near Gadsden, AL. The Naval Research Laboratory (NRL) Multi-sensor Towed Array Detection System (MTADS) magnetometer, EM61 MkII, and GEM-3 sensor arrays were deployed to collect data sets under real-world conditions as part of ESTCP project MM-0533.

Based on the historical records for Site 18, 4.2-in mortars were the primary munitions used on the site, and therefore the item of interest for the Study. Data collection was conducted in two phases. The first phase was performed to provide information to aid in the final site selection and to assist in site preparation. Prior to the second phase of data collection, a series of measurements of a representative 4.2-in mortar in a pit dug in the ground were made on site with each of the three sensor arrays. These data were used to determine the range of burial depths at which the 4.2-in mortar could be detected by each of the sensor array.

After the final site selection was completed, the seed UXO items emplaced, and the GPO installed, the second phase was conducted. Data were collected with the three sensor arrays to provide real-world data sets. Approximately 2,000 individual anomalies from each data set were further subjected to physics-based analysis. After the submission of all data, the results from the GPO and the pit data were used to further compare the performance of each sensor array for the local geology and the 4.2” mortar.