TOWED ARRAY OF VERTICAL MAGNETIC GRADIOMETERS FOR DETECTION OF BURIED MUNITIONS AT THE NAVAL EOD SCHOOL, EGLIN AFB, FLORIDA

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TetraTech was tasked to conduct a digital geophysical survey at the Naval EOD School at Eglin AFB, Florida to reliably detect potential munitions and explosives of concern (MEC), including (1) 30mm projectiles (and 1-inch x 3-inch munitions debris [MD]) to a depth of two feet below ground level; and (2) 2.75-in. rockets and M38-type 100-lb. bombs, to a depth of four feet below ground level. To meet these goals, TetraTech constructed a towed array of airborne quality caesium vapor magnetometers, using sensors and recording consoles from TetraTech's airborne VG-16 magnetometer system. Seven vertical gradiometers (0.5m vertical separation between magnetometers) were arranged in two rows to yield 0.4m lateral separation, with all data recorded on the VG-16 data console at 120Hz sample rate. The system, which we have named the VG-14g, was used to survey 21.3 acres during a 10 day period in September-October 2017. The cart height was constrained by site conditions and adjusted to operate as low as possible, with lower sensors at 0.53m above ground level.   A threshold of 5nT/m was used for the blind seed target detection, and a 10nT/m threshold was used to prepare dig lists for intrusive investigations. Nearly 10,000 anomalies were selected for investigation, using this threshold, and to date all that have been investigated have been associated with metallic objects.