Shaw Shaw Environmental, Inc.

Field Work Variance No. TII-020

Page 1 of 2

FIELD WORK VARIANCE

Project Name/Number	Fort Ord / 846075	CTO/WAD	CTO 16 / WAD 06

Applicable Document: Draft Final Work Plan, MRS-16 Munitions and Explosives of Concern Removal, Former Fort Ord, California, August 2006, Revision 1

Date: 05/07/07

Problem Description:

Tree canopies at MRS-16 preclude Digital Geophysical Mapping because GPS signal is lost when EM-61 array enters canopy areas.

Recommended solution:

Implement recommended revisions to the plan outlined below. This FWV supersedes FWV 017.

Impact on present and completed work:

Will allow completion of areas where GPS signal loss precludes use of EM-61 towed array and man portable unit for DGM mapping.

Requested by: Marty Miele

Recommended revisions to the plan:

In order to conduct clearance under the tree canopy at MRS 16 the following approach will be utilized. Site personnel will mark the boundary where the RTK GPS starts to falter around the tree canopy. This can be done by using field PDAs loaded with a gridded map of the entire site geophysical coverage or a shape file approximation of the coverage. The PDAs, connected to the RTK GPS, will allow the GPS operator to observe his location on the PDA map. The GPS operator will then walk a minimum of 5 feet within the known geophysical coverage and record his path around the outside of the tree canopy (within the DGM). Pin flags will be inserted at the appropriate intervals outline the boundary for coverage under tree canopy for the field teams. Once a given tree canopy area is marked and delineated trained UXO personnel will use the EM61 MK2 in real time to locate and excavate anomalies under the tree canopy. This will all be documented on the field excavation forms. The procedure for this operation is outlined below along with the general and pertinent DQOs that apply.

Procedures and Metrics for Clearance of Tree Canopy Areas at MRS 16 Using the EM61 MK2 in Real Time.

1.) Delineate the edge and mark the boundary of area to be surveyed as per above. The marked location should be just inside (approximately 5 feet) good DGM GPS coverage to ensure overlap of coverage.
2.) The clearance will be conducted on a grid by grid basis (or partial grid basis).
3.) Straight ropes will be used for guidance of each "lane of detection". The ropes will be positioned such that the lanes will be parallel and will not exceed 3 feet between lanes (3 foot centers).
4.) The EM61 MK2 operator will use the instrument in real time at the maximum frequency (10 hertz or greater) and will use the data logger to monitor anomaly magnitude. Complete coverage beneath the trees will be conducted (excluding any surface objects or tree trunks which preclude coverage). The operator will walk along each lane and will progress along the lanes in a sequential manner (from one parallel lane to the next).
5.) The operator will monitor the data logger and each anomaly that is detected at 14 mV (Sum of 4 channels) or 4 mV (Channel 3) will be flagged in the field.
6.) When an anomaly is located the operator will precisely locate the position by running short, orthogonal transects and place a pinflag over the anomaly peak. Once the pin is located, the operator will relocate the EM61 over the line marking the lane and resume the transect.
7.) After all of the flags are located in a given grid (after conducting the lane detections) each anomaly will be excavated and all pertinent information for MEC will be recorded as per the "normal excavations" from reacquisition anomalies. Local coordinates that will later be converted to California Coordinates may be used to record MEC item locations. Number of digs and MD pounds will be recorded per grid.

Shaw Shaw Environmental, Inc.

Field Work Variance No. TII-020

Page 2 of 2

Clarification ☒ Minor Change ☐ Major Change

Affects Budget Yes No X
Affects Schedule Yes No X

Signature _____ Date 5/7/07
Technical Reviewer

Shaw Approvals:

Signature _____ Date 5/7/07
SUXOS

Signature _____ Date 5/7/07
UXOQCS

Signature _____ Date 5/7/07
Project Manager

USACE Approval: If Major Change:

Signature _____ Date 5/8/07
OE Safety Specialist

Signature _____ Date 5/9/07
USACE COR or TM