Shaw® Shaw Environmental, Inc.

Field Work Variance No. TII-017

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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: 03/07/07

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.

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 at a given site with a pin flag. This can be determined during data processing and can be verified in the field. Assurances will be made that the boundary lies within good GPS coverage. Once a given tree canopy area is marked and delineated, a geophysicist or 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 of coverage using the DGM GPS data. The marked location should be just inside (approximately 2 feet) good GPS coverage to ensure overlap of detections.
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 2 feet between lanes (2 foot centers).
4.) The lanes will be numbered in increasing order from west to east (or south to north) and the orientation of the parallel lanes will be recorded.
5.) 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.
6.) The operator will walk with the EM61 MK2 at a velocity less than 3 miles per hour. The operator will walk along each lane and will progress along the lanes in a sequential manner (from one parallel lane to the next).
7.) The operator will either center the EM61 Mk2 over the rope and maintain this position along the extent of the lane.
8.) The operator will monitor the data logger and each anomaly that is detected at 14 mV (Sum of 4 channels) will be flagged in the field.
9.) When an anomaly is located the operator will precicely 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.
10.) 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 will be recorded as per the "normal excavations" from reacquisition anomalies.
11.) The approximate location of each anomaly will be recorded (per each numbered lane).

Clarification ☒ Minor Change ☐ Major Change

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Affects Budget Yes No X
Affects Schedule Yes No X

Signature _____ Date 3/8/07
Technical Reviewer

Shaw Approvals:

Signature _____ Date 3-8-07
SUXOS

Signature _____ Date 3/8/07
Project Manager

Signature _____ Date 3-8-07
UXOQCS
for PCK w/ permission

USACE Approval: If Major Change:

Signature _____ Date 3/8/07
OE Safety Specialist

Signature _____ Date 3/12/07
USACE COR or TM