

Appendix G
Field Change Requests

LANCE R. LEFLEUR
DIRECTOR



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GOVERNOR

Alabama Department of Environmental Management
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November 2, 2010

Mr. Richard Satkin
Senior Project Manager
Matrix Environmental Services
283 Rucker Street
Building 3165
Anniston, AL 36205

RE: ADEM Review and Concurrence: Field Change Request #10 to *Revision 1 to Final Program Level Work Plan*
Fort McClellan, Calhoun County, Alabama
Facility I.D. No. AL4 210 020 562

Dear Mr. Satkin:

The Alabama Department of Environmental Management (ADEM or the Department) has completed its review of Field Change Request (FCR) #10. FCR #10 allows the Geonics EM61 MK2 operated in analog mode to be added to the approved list of primary detection instruments to be used in areas being cleared to a depth of one foot. The instruments and experienced operators will be certified in the geophysical prove-out (GPO) or other test area. The Standard Operating Procedure (SOP) – Intrusive Operations using the EM61 in Analog Mode for One-Foot Clearance will be followed and quality control (QC) surveillance will be performed and documented in accordance with Table 10-3 of the approved work plan. The Department concurs with the request and the signed original document is attached for your records.

For any questions or concerns regarding this matter please contact Ms. Julie Ange of the Remediation Engineering Section at 334-270-5646 or via email at jange@adem.state.al.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Ange", is written over a faint, larger version of the same signature.

Julie Ange
Governmental Hazardous Waste Branch
Land Division

cc: Mrs. Tracy P. Strickland/ADEM
Mr. Robin Scott/MDA
Mrs. Brandi Little/ADEM

Attachment

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S. W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)



Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
4171 Commanders Drive
Mobile, AL 36615-1421
(251) 432-6533
(251) 432-6598 (FAX)

FCR #10

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 10

Date: 10/08/10

LOCATION: McClellan

Matrix Representative: Kent Boler

1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)

The Geonics EM61 MK2 operated in analog mode is approved as a primary detection tool in areas being cleared to a depth of one foot.

2. Reason for Change (Use continuation sheet if necessary)

Section 2.4, Project Execution: the last paragraph states: "As alternative approaches/technologies are identified that will shorten the schedule or improve efficiency through site-specific experience, they will be employed where feasible to complete remaining work."

The analog metal detectors currently approved for use in one foot clearance areas are the Vallon VMH (large & small head), Schonstedt GA-52CX and 92XT and the Whites DFX 300. Even with this set of instruments a large number of unproductive digs are being prosecuted without recovering MEC or MEC-sized metallic objects because of the presence of areas of hot rocks, small arms and dispersed metallic debris. The EM61 MK2 in DGM mode has repeatedly demonstrated detection of at least 95% of all GPO items buried. Using the EM61 MK2 in analog mode with the same coverage criteria (2.5-ft across track spacing) as is used during DGM and a threshold of 10mV on Channel 2 will be demonstrated to detect at least 95% of all GPO items buried at one foot or less. Areas where an EM61 MK2 cannot get 100% coverage will be contemporaneously marked in the field for clearance with approved handheld instruments.

This change will allow for greater operational efficiencies in the field as the EM61 MK2 with a 10 mV threshold in analog mode has the potential to eliminate unnecessary digs compared to the current suite of handheld instruments.

3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)

The EM61 MK2 in analog mode is approved for use as a primary detection instrument for clearance to one foot using a 10mV threshold on Channel 2. The instruments and operators will be certified in the GPO or other test area prior to being utilized, and QC inspection points and surveillances will be performed and documented in accordance with Table 10-3 of the Approved Programmatic Work Plan, Revision 1. The Standard Operating Procedure (SOP) – Intrusive Operations using the EM61 in Analog Mode for One-Foot Clearance will be followed during the performance of the EM61 analog detection of MEC in the clearance of one foot areas.

Updated list of approved detection instruments based on GPO evaluation:

One Foot Clearance: Vallon VMH (large & small head), Schonstedt GA-92XT/52CX, Whites DFX 300, **EM61 MK2**

No text changes are required for the Programmatic Work Plan, Revision 1 however, the list of approved handheld detectors will be updated in subsequent site-specific work plans. EM61-specific monitoring criteria (passed inspection, operator experience, warm-up, nulling, etc.) will be evaluated in the preparatory and follow-on QC inspections. No specific new form requirements or QA/QC procedures are anticipated.

Preparer of FCR (Print name and sign) Kent Boler <i>Kent Boler</i>	Preparer's Title QA Geophysicist	Date 11/1/10
UXOQCS - Reviewed (Print name and sign) Jason Soth <i>Jason Soth</i>	Accepted (Y/N) Yes UXOQCS	Date 11/1/10
Operations Manager- Reviewed (Print name and sign) Cecil Taylor <i>Cecil Taylor</i>	Accepted (Y/N) Yes Site Operations Manager	Date 11/1/10
Matrix PM - Reviewed (Print name and sign) Richard Satkin <i>Richard Satkin</i>	Accepted (Y/N) Yes Project Manager	Date 11/1/10
ADEM - Reviewed (Print name and sign) Julie Ange <i>Julie Ange</i>	Accepted (Y/N) Yes	Date 11/2/10

SOP
Intrusive Operations using the EM61 in Analog Mode for
One-foot Clearance

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish basic procedures for the analog mode (non-DGM) utilization of the Geonics EM61MK2 1m x 0.5m (EM61) metal detector during Intrusive Operations in clearance to one foot areas. Adjustments to the procedure must be approved by the Contractor Project Manager, Matrix Management Staff and ADEM.

2.0 SCOPE

The procedures in this document are applicable to all UXO employees of Contractor utilizing the EM61 during intrusive operations.

3.0 MINIMUM REQUIREMENTS

All employees executing MEC operations at Fort McClellan will comply with the following procedures for operating the EM61 in support of Intrusive Operations. The objective of these procedures is to ensure that the equipment is functioning properly and it also outlines the required steps the instrument operators will follow during intrusive operations with the EM61.

Because the EM61 is a more complicated sensor, EM61 operators will be qualified geophysicists or geologists/UXO technicians with at least six months previous operational experience with an EM61. All EM61 operators and EM61s will be certified by Matrix QC for use for one-foot clearance either in the GPO or by equivalent field test prior to utilization. Matrix QC will document the operators experience and certifications which will be kept in the project files and included in the After Action Report.

3.1 PRE-OPERATIONAL TEST

It is important to conduct and document the daily pre-operational tests to verify the equipment is functioning correctly and to identify any possible equipment issues up front before starting the daily production work. The pre-operational test takes place each morning in the operational areas at a null point in close proximity to the grids that will be worked during that day. The following steps will be utilized to test the EM61 when it will be used as a geophysical instrument on the intrusive team.

1. Verify correct equipment settings. (Setting "4" on the backpack, 1 x 0.5 meter coil selected on allegro, Null Plug installed, Low Power Setting).
2. Check cable connections and handle and wheel mounts for proper tight fit. Waterproof connections and tape up cables as needed.
3. Check the battery voltage (should be a minimum of 12 volts).
4. Conduct the EM61 warm up.
 - a. The warm up needs to be a minimum of 10 minutes each time the instrument is turned on.
5. The instrument is then "Nulled" in the cleared area to establish background reading with the coil position level to the ground with wheels attached.
6. Conduct the Static Test
 - a. Position the EM61 over test item.
 - b. Note mV values on 2nd channel (366us). These values should be the same every time this procedure is performed, +/- 10%.

- c. If values are different, make sure the test item is positioned properly and recheck mV values. If still not correct, re-null, and recheck test item.
 - d. If still not correct, call for technical support from Contractor or Matrix Geophysicist.
7. A "cable shake" test then takes place to verify that there are no fluctuations in the allegro readings. If there are, then the cable systems need readjustment.
 8. Document all of the test results along with the specific location of the test and null point utilized in log book.
 9. Monitor and record battery levels of both the main battery of the backpack and the Allegro battery reading LED at noon time and at the end of day.

3.2 OPERATIONAL USE OF THE EM61 DURING INTRUSIVE OPERATIONS

The following steps outline the operational use of the EM61 when utilized as a geophysical instrument on the intrusive team.

1. Ropes will be utilized to lay out 2.5 feet or 5-foot wide lanes, depending on grid terrain conditions, to facilitate total coverage of the grid.
2. Warm up EM61 for minimum of 10 minutes.
 - a. Repeat warm-up period if you turn the EM-61 off for any period of time.
 - b. **Check background readings in a quiet area near grids worked.** Find area where EM61 values don't vary much when moving the EM61 around. The values do not have to be equal to zero, but they shouldn't vary much during movement.
3. Place a colored stake at that nulling location and write the null point ID on the stake with permanent ink (NP-Grid Number-01). A grid may contain multiple null points.
4. Document the approximate location of the nullpoint within the grid and the specific orientation of the EM61 when nulled on the map.
5. Null the EM61.
 - a. Renull at an appropriate location any time the background response appears to have drifted or when the background response within the grid is suspect to have changed.
6. Fully investigate the complete lane (100% coverage) with the EM61 in analog mode while looking for any subsurface contact greater than 10 mV (action level) on the 2nd channel (366us time gate). Full coverage will be achieved by ensuring that all accessible areas of the lane are covered by the EM61 and that all obstructions are interrogated by running the EM61 as close as possible to it/them from all directions.
7. When a metallic anomaly is identified, it will be interrogated from multiple directions to locate the center of the anomaly. Flag each peak location exceeding the action level for further investigation. If areas are delineated above the action level which are larger than the critical radius of 2.5 feet, then the boundary of the area to be cleared will be delineated (painted) or flags will be placed on every sub-peak such that all areas above the action level will be cleared. The team leader shall bend the flag after the anomaly is removed or cleared to one foot.
8. Once the location is excavated, if the excavation is less than 1 foot in depth, the EM61 operator will recheck the location and the surrounding 2.5-foot critical radius with the EM61 to ensure mV readings are below the action level.

9. If obstructions (trees, brush, rocks, large metallic targets, fringe areas of fences, concrete, etc.) prevent adequately covering the area with the EM61 (and cannot be removed) the boundary of the uncovered area will be contemporaneously marked with spray paint for clearance by alternative instruments/techniques. MES QC will be consulted for alternative clearance of metallic anomalies associated with subsurface utilities or beneath unmovable trees or structures. Approved analog instruments (i.e. Schonstedt GA-92XT/52CX, Whites DFX 300, Vallon VMH large and small head) will be used to check and clear these marked areas in accordance with MES Guidance.

3.3 ADDITIONAL INSTRUMENT CHECKS

At the first indication of a negative mV value while checking the anomaly location conduct a drift check. The drift check consists of the following steps;

1. Go back to designated nulling location.
2. Check reading;
 - a. If reading is a negative value, re-null the EM61 then continue investigating lanes.
 - Ensure adequate equipment warm-up takes place prior to renulling and checking target anomalies.
 - b. If reading is not a negative value, then find a new nullpoint representative of the specific geologic background for the area the EM61 is to be utilized. Renull and continue investigating lanes.
3. If you receive a negative mV value after following step 2, recheck the instrument operability and change out the EM61 if necessary, resort to using approved analog Instruments (i.e. Schonstedt GA-92XT/52cX, Whites DFX 300, Vallon VMH large and small head) if necessary for that specific area and annotate on grid sheet.

3.4 Quality Control

EM61-specific monitoring criteria (passed inspection, operator experience, warm-up, cable shake test, nulling, coverage, etc.) will be evaluated in the preparatory and follow-on QC inspections.



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June 13, 2011

Mr. Richard Satkin
Senior Project Manager
Matrix Environmental Services
283 Rucker Street
Building 3165
Anniston, AL 36205

RE: ADEM Review and Concurrence: Field Change Request #11 to *Revision 1 to Final Program Level Work Plan*
Fort McClellan, Calhoun County, Alabama
Facility I.D. No. AL4 210 020 562

Dear Mr. Satkin:

The Alabama Department of Environmental Management (ADEM or the Department) has completed its review of Field Change Request (FCR) #11. FCR #11 is a request to remove specific references to 'UXO Contractor' from the Program Level Work Plan and replace them with the 'UXO Team'. This less restrictive language will allow Matrix to perform one-foot clearance in MRS-12, Tract 12B and step outs in MRS-12 and MRS-13. An independent, third-party contractor under contract directly to MDA (McClellan Development Authority) will perform QA (quality assurance) functions. ADEM concurs with the request and the signed original document is attached for your records.

For any questions or concerns regarding this matter please contact Ms. Julie Ange of the Remediation Engineering Section at 334-270-5646 or via email at jange@adem.state.al.us.

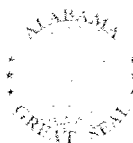
Sincerely,

A handwritten signature in black ink that reads "Julie Ange".

Julie Ange
Governmental Hazardous Waste Branch
Land Division

cc: Mrs. Tracy P. Strickland/ADEM
Mr. Robin Scott/MDA
Mrs. Brandi Little/ADEM

Attachment



FCR #11

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan		
FCR #: 11	Date: 4/18/11	
LOCATION: McClellan	Matrix Representative: Richard Satkin	
1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary) Modification of terminology in the Program-Level Work Plan, MRS-12 and 13 Site-Specific Work Plan Addendum, and FCR-10, SOP for Intrusive Operations using the EM61 in Analog Mode for One Foot Clearance.		
2. Reason for Change (Use continuation sheet if necessary) This FCR removes specific references to 'UXO Contractor' and replaces it with less restrictive terms thereby providing the flexibility for Matrix to self-perform one-foot clearance if required.		
3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary) Matrix will self perform the one foot clearance in MRS-12, Tract 12B and step outs in MRS-12 and MRS-13. The Quality Assurance functions normally performed by Matrix will be performed by an independent third-party contractor under contract directly to the MDA. Change Revision 1 to Final Program-Level Work Plan, Section 2.5.4 paragraph 4, 1 st sentence to read: "The UXO Team will take actions to protect the safety of the personnel on site, the public, and the environment." Change Revision 1 to Final Program-Level Work Plan, Section 2.5.4 paragraph 4, 3 rd sentence to read: "The suspect item will be secured by UXO personnel until relieved by appropriate authority, such as Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel." Change Revision 1 to Final Program-Level Work Plan, Section 2.5.4 paragraph 5, 1 st sentence to read: "The UXO Team will be responsible for entering data from the clearance into their PDAs." Change Revision 1 to Final Program-Level Work Plan, Section 5.0 paragraph 1, 2 st sentence to read: "Before and throughout the field work, performance will be demonstrated at GPO test plot(s) to confirm and certify that personnel and procedures....." Change MRS-12&13 Site Specific Work Plan Addendum, Section 2.1 paragraph 1, 2 nd sentence to read: "To meet this objective, UXO personnel will use the....." Also in Figure 2-1, Project Organization, change "MEC Contractor" to "MEC Team" Change MRS-12&13 Site Specific Work Plan Addendum, Section 2.5.4 paragraph 3, 6 th sentence to read: "The suspect item will be secured by UXO personnel until relieved by appropriate authority, such as Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel." Change MRS-12&13 Site-Specific Work Plan Addendum, Section 2.5.8.1 paragraph 3, 3 rd sentence to read: "The Team Leader will turn over the inspected scrap to the UXOQC staff or designated management personnel whom shall be responsible for inspecting all scrap, verifying that all MEC scrap and Non-MEC scrap is energetic free, and transporting the segregated scrap to the scrap collection area." FCR #10, SOP for Intrusive Operations using the EM61 in Analog Mode for One Foot Clearance, Section 1.0, 2 nd sentence to read: "Adjustments to the procedure must be approved by Matrix Management Staff and ADEM". And Section 2.0, 1 st sentence to read: "The procedures in this document are applicable to all personnel utilizing the EM61 during intrusive operations."		
Preparer of FCR (Print name and sign)	Preparer's Title	Date
Jason Soth	Task Order Manager	April 18, 2011
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Harry Wallace	UXOQCS	April 18, 2011
Operations Manager- Reviewed (Print name)	Accepted (Y/N) Yes	Date
Cecil Taylor	Site Operations Manager	April 19, 2011
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Kent Boler	Project Manager	April 19, 2011
ADEM - Reviewed (Print name and sign)	Accepted (Y/N)	Date
Julie Ange	Yes	6/13/11

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish basic procedures for the analog mode (non-DGM) utilization of the Geonics EM61MK2 1m x 0.5m (EM61) metal detector during Intrusive Operations in clearance to one foot areas. Adjustments to the procedure must be approved by Matrix Management Staff and ADEM.

2.0 SCOPE

The procedures in this document are applicable to all personnel utilizing the EM61 during intrusive operations.

3.0 MINIMUM REQUIREMENTS

All employees executing MEC operations at Fort McClellan will comply with the following procedures for operating the EM61 in support of Intrusive Operations. The objective of these procedures is to ensure that the equipment is functioning properly and it also outlines the required steps the instrument operators will follow during intrusive operations with the EM61.

Because the EM61 is a more complicated sensor, EM61 operators will be qualified geophysicists or geologists/UXO technicians with at least six months previous operational experience with an EM61. All EM61 operators and EM61s will be certified by Matrix QC for use for one-foot clearance either in the GPO or by equivalent field test prior to utilization. Matrix QC will document the operators experience and certifications which will be kept in the project files and included in the After Action Report.

3.1 PRE-OPERATIONAL TEST

It is important to conduct and document the daily pre-operational tests to verify the equipment is functioning correctly and to identify any possible equipment issues up front before starting the daily production work. The pre-operational test takes place each morning in the operational areas at a null point in close proximity to the grids that will be worked during that day. The following steps will be utilized to test the EM61 when it will be used as a geophysical instrument on the intrusive team.

1. Verify correct equipment settings. (Setting “4” on the backpack, 1 x 0.5 meter coil selected on allegro, Null Plug installed, Low Power Setting).
2. Check cable connections and handle and wheel mounts for proper tight fit. Waterproof connections and tape up cables as needed.
3. Check the battery voltage (should be a minimum of 12 volts).
4. Conduct the EM61 warm up.
 - a. The warm up needs to be a minimum of 10 minutes each time the instrument is turned on.
5. The instrument is then “Nulled” in the cleared area to establish background reading with the coil position level to the ground with wheels attached.
6. Conduct the Static Test
 - a. Position the EM61 over test item.
 - b. Note mV values on 2nd channel (366us). These values should be the same every time this procedure is performed, +/- 10%.

The UXO Contractor will take actions to protect the safety of the personnel on site, the public, and the environment. All UXO personnel are aware that if suspect chemical warfare material (CWM) is discovered, they will ensure that all personnel withdraw immediately from the work area to an area upwind of the suspect CWM item and report the item to the MES QA. The suspect item will be secured by the UXO Contractor's UXO personnel until relieved by appropriate authority, such as Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel. See Section 14 for the Recovered Chemical Warfare Material Plan.

The UXO Contractor will be responsible for entering summary data from the aggressive surface/near surface clearance into their PDAs. Total non-MEC and total MEC scrap weights for each grid and additional positional and location data should a MEC item be recovered during the near surface clearance will be entered into the PDA. The PDAs will have a drop-down menu to ensure all UXO personnel utilize consistent terminology.

2.5.4 Clearance to One foot Depth

A UXO team led by a UXO Tech III (Team Leader) will conduct an aggressive instrument-aided MEC clearance to a depth of 1 foot. The clearance teams shall utilize standard mag and dig clearing techniques such as establishing control lanes approximately 5 ft wide and use of hand held magnetometers and all metal detectors to assist in detection of MEC and MEC-like metal objects. During 1 foot clearance, intrusive excavation procedures in Section 2.5.6 apply.

MEC will be consolidated within the grid for disposal and items unacceptable to move will be marked for BIP procedures at the end of each day. All scrap will undergo an initial inspection to ensure it is explosives-free and then staged along the boundary of the grid in one of two areas designated by the Team Leader in each grid. Area No. 1 will be for scrap identified as MEC scrap and MEC frag, to include re-inspected MEC scrap resulting from UXO disposal operations, that is subsequently determined to be explosives-free. Area 2 will be for non-MEC scrap. MEC scrap and MEC frag will be kept segregated from non-MEC scrap through final disposition. MEC scrap/MEC frag and non-MEC scrap will be re-inspected for subsequent pickup and transported to a temporary holding area for QC and QA inspection, certification and final disposition at an approved facility as described in Section 2.5.8.1.

If any MEC is detected during 1 foot clearance operations, only authorized UXO personnel will be permitted to take actions to minimize risks. MEC discovered during the surface clearance will be photographed, identified, and documented as to type, condition, and location. Other team personnel will use the three "**R's**" - **R**ecognize the item as potential MEC, **R**eport the item's location to the UXO Technician, and **R**etreat to a safe location as designated by UXO personnel.

The UXO **Team** will take actions to protect the safety of the personnel on site, the public, and the environment. All UXO personnel are aware that if suspect chemical warfare material (CWM) is discovered, they will ensure that all personnel withdraw immediately from the work area to an area upwind of the suspect CWM item and report the item to the MES QA. The suspect item will be secured by the UXO **Team's** UXO personnel until relieved by appropriate authority, such as Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel. See Section 14 for the Recovered Chemical Warfare Material Plan.

The UXO **Team** will be responsible for entering data from the clearance into their PDAs. Total non-MEC and total MEC scrap weights for each grid and additional positional and descriptive data should a MEC item be recovered during the clearance will be entered into the PDA.

5.0 GEOPHYSICAL PROVE-OUT PLAN

GPO test plot(s) will be used to test and confirm equipment and operator system performance across all work elements including sensor, positioning, personnel, data processing, and quality control. Before and throughout the field work, performance will be demonstrated at GPO test plot(s) to confirm and certify that personnel and procedures can meet the project goals and that the detection and navigation systems are operating within expected parameters. Geophysical field teams will not begin production work until the equipment and operator system performance is determined to be acceptable. Any uncertified personnel or new or modified equipment will also require performance validation and certification prior to performing production work. See Section 10.7.3.1.2 for additional GPO information as related to QC Step 1.

In addition to the digital geophysical instruments, the UXO Contractor will demonstrate and test other hand-held EM-based analog instruments (including the Vallon VMH3CS, Minelab Explorer II, and Fisher All Metals) in the GPO to determine which instrument(s) prove most functional, reliable and consistent at McClellan. Testing will be conducted by the GeoQCS and the instrument selected will then be used by UXO dig teams during intrusive operations to gauge completion of a dig. (We recognize that the EM61-MK2 will be used to QC digs, however, our dig teams must also use an analog instrument in order to efficiently prosecute and finalize digs.) Further, it is anticipated that there may be limited areas that are inaccessible to DGM methods due to extreme terrain or obstructions and will therefore require the use of hand-held analog instruments (ML-1 or Schonstedt magnetometer, Minelab Explorer II or Vallon). UXO dig teams will also be required to demonstrate proficiency in use of the analog instruments selected. They will utilize the selected analog instruments in the GPO to demonstrate their ability to locate and reacquire MEC items with the selected instruments. Follow-up certification of the UXO team members for proficiency with sweep instruments will be supervised by the UXO QCS.

5.1 Geophysical Prove-Out Site

This GPO plan was developed in accordance with the plans and specifications of the USACE. The anticipated tasks to be performed during the project include DGM and intrusive investigations to remove surface and subsurface MEC hazards at the site. As such, a GPO test site will be designed and constructed to reflect the field conditions and survey geometry that will be utilized. The former GPO test site, constructed by URS for the Alpha Supplemental EE/CA in a flat relatively open area, was determined to be insufficiently representative of the removal action areas and will be removed. A new GPO test plot will be constructed in the former Ammunition Supply Point (ASP) area of McClellan (near the southern Alpha MRA boundary), to test the collection of DGM data over grids located in heavily wooded areas on difficult terrain representative of the majority of the Alpha and Bravo MRAs. The GPO test site is not envisioned as an unchanging entity. The GPO test plot may be changed or augmented, or additional test plots constructed, in order to better evaluate the performance of geophysical equipment and methodologies reflective of the encountered site conditions, MEC items, or burial depths.

5.1.1 GPO Plot Design

The data quality objectives (DQOs) pertaining to the GPO are presented in Section 10 of this Work Plan. The elements outlined in the following subsections describe the GPO plot design and procedures associated with the GPO. The specifics of the seed items, burial locations, and burial depths will be released on an as-needed basis by MES. While control points and “known” seed items depths and locations will be released to the UXO and Geophysics Contractors for use in QC and for optimizing survey parameters and anomaly selection criteria, the retention of

2.0 TECHNICAL MANAGEMENT PLAN

The following Technical Management Plan states the project objective; describes key personnel, specific project approach, methods, and operational procedures; and presents the deliverables that will be used to perform MEC operations at **MRS-12 and MRS-13**.

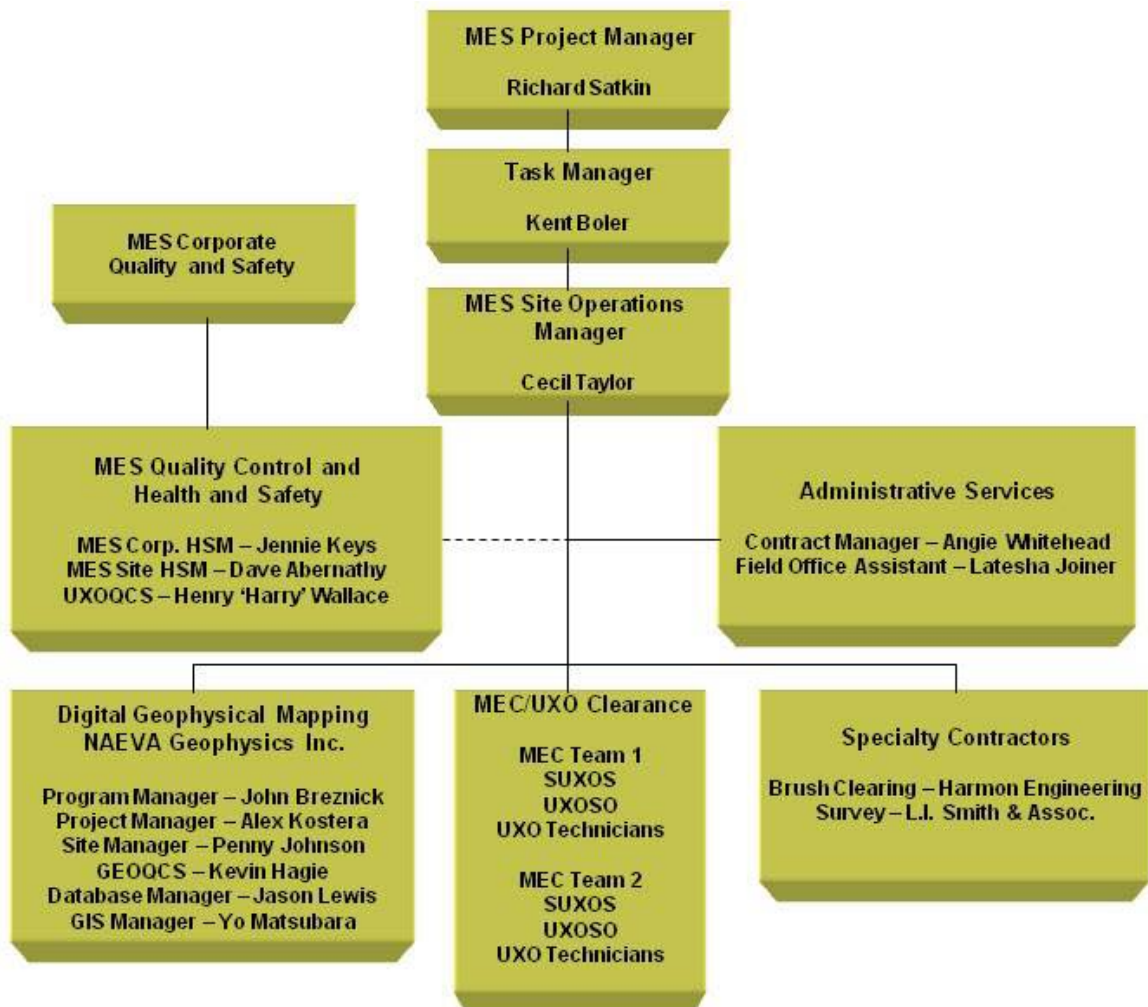
2.1 Project Objectives

The primary objective of this project is to conduct MEC clearance activities in order to gain concurrence of no further action. To meet this objective, UXO **personnel** will use the unexploded ordnance (UXO) industry's current Standard of Care but not be strictly limited to USACE guidelines of conducting MEC remediation.

2.2 Qualified Project Personnel

All key project personnel are qualified, possessing the level of technical knowledge and experience to execute assigned project tasks and responsibilities. The organizational chart presented in Figure 2-1 identifies the general organization and reporting chain-of-command.

Figure 2-1. Project Organization



MEC will be consolidated within the grid for disposal and items unacceptable to move will be marked for BIP procedures at the end of each day. All scrap will undergo an initial inspection to ensure it is explosives-free and then staged along the boundary of the grid in one of two areas designated by the Team Leader in each grid. Area No. 1 will be for scrap identified as MEC scrap, to include re-inspected MEC scrap resulting from UXO disposal operations, that is subsequently determined to be explosives-free. Area 2 will be for non-MEC scrap. MEC scrap will be kept segregated from non-MEC scrap through final disposition. MEC scrap and non-MEC scrap will be re-inspected for subsequent pickup and transported to a temporary holding area for QC and QA inspection, certification and final disposition at an approved facility as described in Section 2.5.8.1.

If any MEC is detected during 1 foot clearance operations, only authorized UXO personnel will be permitted to take actions to minimize risks. MEC discovered during the surface clearance will be photographed, identified, and documented as to type, condition, and location. Other team personnel will use the three “**R**’s” -**Recognize** the item as potential MEC, **Report** the item’s location to the UXO Technician, and **Retreat** to a safe location as designated by UXO personnel. The UXO **Team Leader** will take actions to protect the safety of the personnel on site, the public, and the environment. All UXO personnel are aware that if suspect chemical warfare material (CWM) is discovered, they will ensure that all personnel withdraw immediately from the work area to an area upwind of the suspect CWM item and report the item to the MES QA. The suspect item will be secured by UXO personnel until relieved by appropriate authority, such as Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel. See Section 14 for the Recovered Chemical Warfare Material Plan.

The UXO **Team Leader** will be responsible for entering data from the clearance into their PDAs. Total non-MEC and total MEC scrap weights for each grid and additional positional and descriptive data should a MEC item be recovered during the clearance will be entered into the PDA.

2.5.5 Digital Geophysical Mapping

Upon completion of the aggressive surface/near surface clearance, DGM will be conducted to locate subsurface metallic anomalies. A detailed discussion of geophysical methods and equipment are presented in Section 6.

2.5.6 Intrusive Operations - Clearance to Depth of Detection

Intrusive operations in support of MEC clearance to depth of detection involves excavation of subsurface anomalies identified by DGM and, where necessary in areas not accessible to DGM, handheld instruments. All non-DGM areas, including a 2-foot radius around tree clusters (more than 1 tree) **and single-tree DGM gaps with any horizontal dimension \geq 5 feet**, are to be verified as cleared by the intrusive excavation team with hand held metal detectors. **If accessible, in-grid MES QC designated personnel will help confirm that data gaps have been adequately cleared using an EM61 MK2.** The Vallon (model VMH3CS) EM-based detection sensor has proved to be the most reliable hand held detector. When compared to the various other handheld detectors that were evaluated, the Vallon detected the most GPO blind seed items. The Vallon will be used to locate geophysical anomalies in areas not covered by the EM61-MK2. During this search, if additional anomalies are located by the intrusive team, these anomalies will be excavated and the findings recorded in the team’s PDA. These records shall include the number of individual excavations, MEC scrap weight, and non-MEC scrap weight. If MEC items are found, unique target identifiers will be assigned to these items along with their positions. These records will be uploaded for inclusion in the overall site database. Upon completion of this task of verifying that the subsurface in a 2-foot radius around gaps **identified on the geophysical maps** are free of metal, **the UXO team leader will initial all**

metal containers located in an area reserved for scrap collection, segregating, and final inspection. This area will be located in the magazine area. One container(s) will be designated “*Scrap Metal*” and will be used to collect non-MEC scrap such as C-ration cans, barbed wire, construction debris, metal roofing, and or other metals not associated with munitions or range targets. The other container(s) will be marked “*MEC Scrap*” and will be used to collect MEC scrap and MEC frag (ordnance/munitions related scrap metal such as target material, fins, empty projectile casings, ordnance frag and other metal components) that do not contain any explosives or energetic materials).

Collection procedures begin at the time the metal item is discovered by the UXO technician in the grid. The UXO technician makes a preliminary screening as to the classification of the item. If the item is identified as MEC scrap containing energetic material or scrap that cannot be positively identified, it will remain in the grid and be flagged for disposal (demolition). If the item is positively identified as non-MEC scrap metal, it is placed in a non-MEC scrap bucket located on the boundary of the grid being worked. If the item is identified as MEC scrap (not containing energetic material) or MEC frag material it will be placed in the appropriately labeled scrap buckets. This initial screening is the first step in the sorting, inspection and segregation of the scrap.

After completing clearance operations within a grid, or at the end of the day if the grid is not completed, the Team Leader will perform a 100% inspection by sorting and separating all recovered scrap items. If any questionable scrap is found, it is moved to the MEC scrap bucket for treatment. **The Team Leader will turn over the inspected scrap to the UXOQC staff or designated management personnel whom shall be responsible for inspecting all scrap, verifying that all MEC scrap and Non-MEC scrap is energetic free, and transporting the segregated scrap to the scrap collection area.** At the scrap processing area, the Matrix UXOQCS or his designee will conduct a 100% re-inspection of all recovered scrap. The non-MEC scrap will then be placed with like materials in labeled lockable containers. The MEC scrap and MEC frag will be staged for disfigurement, as required. All MEC scrap and MEC frag will be stored in labeled lockable containers to prevent any co-mingling of non-MEC and MEC scrap.

In preparation for transportation to the disposal facility, Matrix UXO QA will also perform an inspection of the scrap, certify it as non-hazardous, and seal the containers. The scrap manifest will be signed and the seal numbers recorded. All MEC scrap and MEC frag will be disposed of at a foundry or recycler where it will be processed through a shredder, smelter or furnace (remelt) before resale or release. MES will require that all MEC scrap containers remain segregated from all other scrap and sealed until such time as it will be immediately processed (shredded and/or smelted). All MEC scrap is to be rendered unrecognizable as munitions-related debris/scrap, disposed of safely and permanently, and tracked from point of origin to final disposition. A signed DD Form 1348-1 will be required to track all scrap as well as a certificate of destruction signed by the disposal facility. These documents will become part of the permanent record for submittal with the final report.

2.5.8.2 Hard Target Processing and Disposal

The processing of hard targets such as tanks, armored personnel carriers, jeeps and other vehicles requires a skill set quite different from the normal scrap handling capabilities described above. **The dismantling and disposal of any hard targets encountered in MRS-12 and MRS-13 will be handled with other hard targets toward the end of the MEC remediation program and is further described in Section 2 of the PWP (2007).**



Alabama Department of Environmental Management
adem.alabama.gov

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(334) 271-7700 ■ FAX (334) 271-7950

October 7, 2011

Mr. Richard Satkin
Senior Project Manager
Matrix Environmental Services
283 Rucker Street
Building 3165
Anniston, Alabama 36205

RE: ADEM Review and Non-concurrence: *Field Change Request #12 to Revision 1 to Final Program Level Work Plan*; dated September 27, 2011
Fort McClellan, Calhoun County, Alabama
Facility I.D. No. AL4 210 020 562

Dear Mr. Satkin:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed *Field Change Request #12* (FCR 12) requesting exemption for clearance to depth of detection procedures to allow for an analog-based clearance operation to depth of detection for two small, irregularly shaped areas on the boundaries of tracts 12-C and 13-A. The FCR proposes altering the procedure to instead use an EM61 in analog mode to perform the clearance to depth operation. While the Action Memo does not require the use of DGM (digital geophysical mapping) procedures for the clearance to depth areas, a review of the work plan indicates that a significant amount of quality would potentially be lost through implementation of this FCR. Section 2.8 of the work plan requires that the clearance to depth of detection will be performed following a complete surface and near surface analog removal of anomalies. Therefore, the work plan, in effect, requires two 100% removals be performed over the property that will be released for unrestricted use while the FCR would reduce that to one "mag and dig" operation. The Department believes this would greatly reduce the certainty of the adequacy of the MEC (munitions and explosives of concern) removal in this area. Also, analog removal procedures are approved only for surface, near surface, and MEC removals to a depth of 1-ft. Implementing this procedure for MEC removal to the maximum depth of detection would require additional planning including: reevaluating the analog detection capability of the sensors, determining whether or not the depth of detection of the EM61 in analog mode is equal to the detection capabilities of the sensor in DGM mode, and evaluating whether additional QC (quality control) procedures are required.

Furthermore, the justification provided in the FCR for implementing the proposed change is the irregularly shaped border of these areas. This appears to be an inadequate



justification to change the procedure as DGM is easily implementable on irregular boundaries and has been performed frequently in the past.

For any questions or concerns regarding this matter please contact Ms. Julie Ange of the Remediation Engineering Section at 334-270-5646 or via email at jange@adem.state.al.us.

Sincerely,

A handwritten signature in black ink, appearing to read "S.A. Cobb", written in a cursive style.

Stephen A. Cobb, Chief
Governmental Hazardous Waste Branch
Land Division

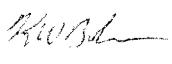
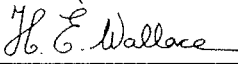

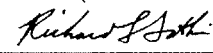
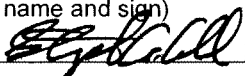
SAC/TPS/JLA/lac

cc: Mrs. Tracy P. Strickland/ADEM
Mrs. Brandi Little/ADEM
Mr. Robin Scott/MDA

Attachment

FCR #12

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 12	Date: 9/27/11	
LOCATION: McClellan	Matrix Representative: Richard Satkin	
<p>1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>Table 2.2 Clearance Approach: Modification/exemption for clearance to depth of detection procedures to allow for an analog-based clearance operation to depth of detection for two small irregularly shaped areas on the boundaries of tracts 12-C and 13-A. An EM61 based (analog-mode) mag and dig clearance to depth of detection operation will be used to clear these areas.</p>		
<p>2. Reason for Change (Use continuation sheet if necessary)</p> <p>Because of the locally irregular boundary of the McClellan Park System and geometry of the boundary of MRS-12 tract C and MRS-13 tract A and required step outs, approximately 3 acres of irregularly shaped areas on the edges of tracts 12-C and 13-A are to be cleared to depth of detection. No MEC items were recovered in tract 12-C. In 13-A, one LAW rocket was recovered in Grid N287E153, driving a step out, and less than 5 lbs of MEC-related scrap was recovered during the surface sweep of the affected area. Because of the irregular shapes and small sizes of these areas, which would entail DGM of many small, irregularly shaped partial grids, significant efficiencies can be realized by utilizing an analog clearance to depth of detection operation. An EM61MK2 analog mode based "mag and dig" analog clearance is proposed to achieve similar results to an EM61MK2-based DGM-based clearance.</p>		
<p>3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>An analog clearance to depth of detection can be performed in place of digital geophysical mapping procedures.</p>		
Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler 	Project Manager	9/27/11
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Henry Wallace 	UXOQCS	9/27/11
Operations Manager- Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Cecil Taylor 	Site Operations Manager	9/27/11
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Richard Satkin 	Project Manager	9/27/11
ADEM - Reviewed (Print name and sign)	Accepted (Y/N) <input checked="" type="checkbox"/>	Date
Stephen A. Colab 		10/7/11



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(334) 271-7700 ■ FAX (334) 271-7950

December 9, 2011

Mr. Richard Satkin
Senior Project Manager
Matrix Environmental Services
283 Rucker Street
Building 3165
Anniston, Alabama 36205

RE: ADEM Review and Concurrence: *Field Change Requests #13, 14, 15, and 16 to Revision 1 to Final Program Level Work Plan*; dated October 28, 2011
Fort McClellan, Calhoun County, Alabama
Facility I.D. No. AL4 210 020 562

Dear Mr. Satkin:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed *Field Change Requests #13, 14, 15, and 16* (FCRs 13, 14, 15, and 16) documenting changes to the Program Level Work Plan discussed during ADEM's September 13, 2011 site visit and subsequent conference calls. FCR 13 provides a revision of the documentation of the UoP (unit of production) Certification Process via a tracking spreadsheet. FCR 14 revises the three-phase inspection for the Data Management process to clarify current personnel and responsibilities involved. FCR 15 revises the three-phase inspection (TPI) for the MEC-related Scrap Certification/Verification process to clarify that the TPI is not conducted by the individual performing the certification. FCR 16 updates quality control procedures and responsibilities to be used when Matrix is self performing the final work product. ADEM concurs with these FCRs.

For any questions or concerns regarding this matter please contact Ms. Julie Ange of the Remediation Engineering Section at 334-270-5646 or via email at jange@adem.state.al.us.

Sincerely,

A handwritten signature in black ink that reads "Julie Ange".

Julie Ange
Remediation Engineering Section
Land Division

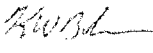
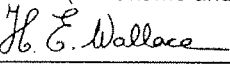


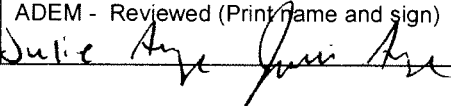
cc: Mrs. Tracy P. Strickland/ADEM
Mrs. Brandi Little/ADEM
Mr. Robin Scott/MDA

Attachments



FCR #13

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 13	Date: 10/28/11	
LOCATION: McClellan	Matrix Representative: Richard Satkin	
<p>1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>Revised documentation of UoP Certification Process via a tracking spreadsheet.</p>		
<p>2. Reason for Change (Use continuation sheet if necessary)</p> <p>Agreed upon resolution with ADEM per UXOPro Memo dated 10/12/01 updated after 10/13/11 conference call.</p>		
<p>3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>Added text to Section 10.7.3 (before Section 10.7.3.1) as follows: UoP QC Certification Process tracking will be documented on the UoP Certification Tracking Spreadsheet Log (Appendix D).</p> <p>Section 10.11 Contractor Forms added as follows: UoP Certification Tracking Spreadsheet Log</p> <p>Appendix D: Contractor Forms added as follows (attached): UoP Certification Tracking Spreadsheet Log</p>		
Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler 	Project Manager	10/27/11
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Henry Wallace 	UXOQCS	10/28/11
Operations Manager- Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Cecil Taylor 	Site Operations Manager	10/28/11
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Richard Satkin 	Project Manager	10/31/11
ADEM - Reviewed (Print name and sign)	Accepted (Y/N)	Date
Julie Arze 	Yes	12/9/11

FCR #14

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 14	Date: 10/28/11
LOCATION: McClellan	Matrix Representative: Richard Satkin

1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)

Revision of three-phase inspection (TPI) for the Data Management process to clarify current personnel and responsibilities involved.

2. Reason for Change (Use continuation sheet if necessary)

Agreed upon resolution with ADEM per UXOPro Memo dated 10/12/01 updated after 10/13/11 conference call.

3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)

Added bullets to Section 10.2.5.4 (Geophysics Site Manager) as follows:

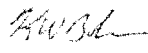
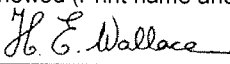
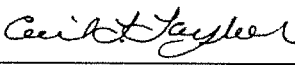
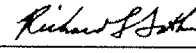
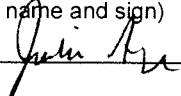
- QC of daily data management tasks performed by the Database Manager (as designated by the GeoQCS).
- Daily email status updates.

Table 10-3 Data Management Definable Feature of Work modified as follows:

- Column Sampling Frequency (Intrusive Data Recording...) – replace Data Manager with (NAEVA) Site Manager.
- Column Sampling Frequency (Data Backup and Storage...) – replace Data Manager with (NAEVA) Site Manager.
- Column QC action (Intrusive Investigation Data ...) – add Follow-on inspection documented on mV comparison tracking spreadsheet.
- Column QC Action (Intrusive Data Recording ...) – add Follow-on inspection of completeness verified by email.
- Column QC Action (Data Backup and Storage) – add Follow-on inspection of upload verified by email.

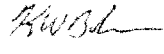
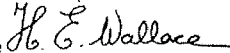

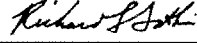
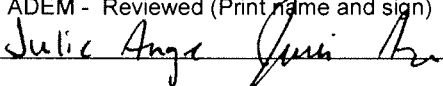
Section 10.11 Contractor Forms added as follows:
mV Comparison Tracking Spreadsheet Log

Appendix D: Contractor Forms added as follows (attached):
mV Comparison Tracking Spreadsheet Log

Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler 	Project Manager	10/27/11
UXOQCS - Reviewed (Print name and sign) Henry Wallace 	Accepted (Y/N) Yes UXOQCS	Date 10/28/11
Operations Manager- Reviewed (Print name and sign) Cecil Taylor 	Accepted (Y/N) Yes Site Operations Manager	Date 10/28/11
Matrix PM - Reviewed (Print name and sign) Richard Satkin 	Accepted (Y/N) Yes Project Manager	Date 10/31/11
ADEM - Reviewed (Print name and sign) Julie Anze 	Accepted (Y/N) Yes	Date 12/9/11

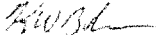


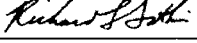
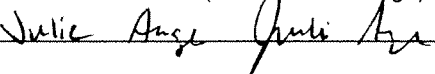
FCR #15

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 15	Date: 10/28/11	
LOCATION: McClellan	Matrix Representative: Richard Satkin	
<p>1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>Revision of three-phase inspection (TPI) for the MEC-related Scrap Certification/Verification process to clarify that the TPI is not conducted by the individual performing the certification.</p>		
<p>2. Reason for Change (Use continuation sheet if necessary)</p> <p>Agreed upon resolution with ADEM per UXOPro Memo dated 10/12/01 updated after 10/13/11 conference call. As the UXOSO is often tied up with demo at the end of the day and the third party UXOQA is not present every day, the UXOSO or another qualified individual will be designated to perform the TPI.</p>		
<p>3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>Section 2.5.8.1 (last para, 1st line) change "Matrix UXO QA" to "the UXOSO or a qualified designate."</p> <p>Table 10-3 MEC-Related Scrap Inspection/Certification Definable Feature of Work modified as follows: Column Sampling Frequency – replace UXOQCS with "UXOSO or qualified designate (not the person doing the certification)".</p>		
Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler 	Project Manager	10/27/11
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Henry Wallace 	UXOQCS	10/28/11
Operations Manager- Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Cecil Taylor 	Site Operations Manager	10/28/11
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Richard Satkin 	Project Manager	10/31/11
ADEM - Reviewed (Print name and sign)	Accepted (Y/N)	Date
Julie Ange 	Yes	12/9/11

FCR #16

FIELD CHANGE REQUEST (FCR) FORM McClellan: Revision 1 to Final Program Level Work Plan

FCR #: 16	Date: 10/28/11	
LOCATION: McClellan	Matrix Representative: Richard Satkin	
<p>1. Description (Items involved, submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>When Matrix is self performing a final work product, the SUXOS or qualified designee may perform an internal grid QC to find and correct any deficiencies in intrusive investigations without penalty (analogous to Contractor Internal QC) prior to turnover to the UXOQCS for QC. The SUXOS will document any corrective actions taken and notify the UXOQCS when complete and ready for QC. Any deficiencies found by QC will be reported on a DNR.</p>		
<p>2. Reason for Change (Use continuation sheet if necessary)</p> <p>Agreed up Resolution with ADEM per UXOPro Memo dated 10/12/01 updated after 10/13/11 conference call.</p>		
<p>3. Recommended Disposition (Submit sketch, if applicable): (Use continuation sheet if necessary)</p> <p>The following text will be added to the start of Section 10.7.3.5: The Contractor (or Matrix, if self performing) will have a two working day opportunity from the date of grid (or UoP) completion logged by the UXO Team Leader to perform an internal QC inspection of each grid (or UoP) by the Contractor SUXOS or his designate to find and correct any deficiencies prior to the Step 5 Excavation Sampling Inspection QC. The Contractor SUXOS will document and notify the UXOQCS when each grid (or UoP) is complete and turned over for QC.</p> <p>No changes to Table 10-3 are required.</p>		
Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler 	Project Manager	10/27/11
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Henry Wallace 	UXOQCS	10/28/11
Operations Manager- Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Cecil Taylor 	Site Operations Manager	10/28/11
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Richard Satkin 	Project Manager	10/31/11
ADEM - Reviewed (Print name and sign)	Accepted (Y/N)	Date
Julie Ange 	Yes	12/9/11