Appendix G

Field Change Requests

ONIS "TREY" GLENN, III
DIRECTOR

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July 27, 2009

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

RE: ADEM Review and Concurrence: Field Change Requests #5 and #6 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 Requests (FCR) #5 and #6. FCR #5 is a request to alter the current practice of using Unexploded Ordnance (UXO) Technicians to perform quality control (QC) inspections of cleared excavations using the EM61MK2 sensor by substituting a trained geophysicist to perform this function while the dig teams are still in the field. Currently this function is being performed by a UXO technician who is not trained to use the EM61 FCR#6 is a request to alter the current practice of using digital geophysical mapping (DGM) to perform surveys in step-out areas in eastern MRS-3 and instead use analog sensors to detect and investigate anomalies to dept of detection. Since all of the step-outs were triggered by items that were not designed to penetrate the ground, the use of analog methods is sufficient to detect further items.

ADEM concurs with the requests and the signed original documents are 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,

Julie Ange
Governmental Hazardous Waste Branch
Land Division

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

Attachment

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FCR #5

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

FCR #: 5	**Date: 7/15/09**
LOCATION: McClellan	**Matrix Representative: Richard Satkin**

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

Conduct contemporaneous QC hole inspections while dig teams are still in the grid.

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

Several Deficiency Notices were generated for the intrusive operations in MRS-2 as a result of the dig teams not properly clearing holes utilizing the EM61-MK2. One of the lessons learned was that the UXO Contractors had difficulty finding/training enough UXO Technicians with sufficient aptitude/expertise/experience in the operation of the EM61MK2 to reliably verify clearance of the more problematic and complicated geophysical anomalies. Consequently, there was not consistent hole-check expertise for all dig teams. Contractor corrective actions to DNRs generally resulted in the shuffling the strong performers and training up new operators who had the same experience/consistency issues. An experienced NAEVA or Matrix geophysicist/geologist should be employed to conduct a real-time QC inspection of the digs to ensure that targets have been adequately excavated and cleared and to give the dig teams more consistent and reliable feedback.

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

Change Revision 1 to Final Program-Level Work Plan, Section 2.5.6 last paragraph, to read: A trained QC geophysicist will be provided to work with each intrusive team. After the initial prosecution of excavations by the dig team, each area will be checked for source removal using the same geophysical instrument used for the DGM surveys (EM61 MK2). The QC EM operator will maneuver the instrument over the open hole while monitoring the data logger for any residual anomalous response. If the instrument response indicates that the source of the anomaly has been removed, the dig will be considered complete and the hole can be backfilled. For locations where an elevated residual response remains, the peak response will be marked on the ground and the dig team will return to that location to continue excavation. This process will be repeated until all excavations in a grid are free of residual anomalous response. Excavation QC is discussed in greater detail in Section 10.

Preparer of FCR (Print name and sign) Richard Satkin	Preparer's Title Project Manager	Date 7/15/09
UXOQCS - Reviewed (Print name and sign) Jason Soth	Accepted (Y/N) Yes UXOQCS	Date 7/15/09
Operations Manager- Reviewed (Print name and sign) Cecil Taylor	Accepted (Y/N) Yes Site Operations Manager	Date 7/15/09
Matrix PM - Reviewed (Print name and sign) Richard Satkin	Accepted (Y/N) Yes Project Manager	Date 7/15/09
ADEM - Reviewed (Print name and sign) Julie Ange	Accepted (Y/N) Yes Project Manager	Date 7/27/09

FCR #6

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

FCR #: 6	Date: 7/10/09
LOCATION: McClellan	Matrix Representative: Richard Satkin

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

Section 2.5.6.1 Step-out Approach: Modification/exemption to existing step-out procedures to allow for an aggressive hand-held magnetometer clearance operation to depth of detection for MEC items identified as either Discarded Military Munitions (DMM) or those types designed not to penetrate the ground (trip flares, hand grenades, etc.) where earth-moving (cut/fill) activities have not altered the ground surface.

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 origination of the step-out process was first presented in the Army EE/CA documents as a means to ensure that no targets or impact areas were missed during remediation. The intent of this procedure was to identify MEC that was either launched, projected, or air dropped on targets.

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

There are a total of twenty-four MEC items (21 grenade fuzes, 2 practice grenades and 1 slap flare) recovered located within 200 feet of the easternmost MRS-3 boundary which result in a 3.3-acre step. Each of these items are identified as either DMM or those types not designed to penetrate the ground (trip flares, slap flares, hand grenades etc.). The resulting step-out at this location will be conducted through a 100% hand-held magnetometer geophysical detector clearance to the depth of detection followed by a (minimum) 25% QC check of the cleared area. Similarly, if other DMM are recovered during the intrusive operations within 200 feet of the MRS boundary step-outs will be conducted through a 100% hand-held magnetometer geophysical detector clearance to the depth of detection followed by a (minimum) 25% QC check of the cleared area. In addition, ADEM will be notified of all DMM-driven step-outs during the bi-weekly QC conference call.

A map of the step-outs and information related to the DMM finds in the referenced grids are attached.

Preparer of FCR (Print name and sign) Richard Satkin	Preparer's Title Project Manager	Date 7/10/09
UXOQCS - Reviewed (Print name and sign) Jason Soth	Accepted (Y/N) Yes UXOQCS	Date 7/10/09
Operations Manager- Reviewed (Print name and sign) Cecil Taylor	Accepted (Y/N) Yes Site Operations Manager	Date 7/10/09
Matrix PM - Reviewed (Print name and sign) Richard Satkin	Accepted (Y/N) Yes Project Manager	Date 7/10/09
ADEM - Reviewed (Print name and sign) Julie Anger	Accepted (Y/N) Yes Project Manager	Date 7/27/09

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July 27, 2009

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

RE: ADEM Review and Concurrence: Field Change Requests #5 and #6 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 Requests (FCR) #5 and #6. FCR #5 is a request to alter the current practice of using Unexploded Ordnance (UXO) Technicians to perform quality control (QC) inspections of cleared excavations using the EM61MK2 sensor by substituting a trained geophysicist to perform this function while the dig teams are still in the field. Currently this function is being performed by a UXO technician who is not trained to use the EM61 FCR#6 is a request to alter the current practice of using digital geophysical mapping (DGM) to perform surveys in step-out areas in eastern MRS-3 and instead use analog sensors to detect and investigate anomalies to dept of detection. Since all of the step-outs were triggered by items that were not designed to penetrate the ground, the use of analog methods is sufficient to detect further items.

ADEM concurs with the requests and the signed original documents are 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,

Julie Ange
Governmental Hazardous Waste Branch
Land Division

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

Attachment

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FCR #6

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

FCR #: 6	Date: 7/10/09
LOCATION: McClellan	Matrix Representative: Richard Satkin

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

Section 2.5.6.1 Step-out Approach: Modification/exemption to existing step-out procedures to allow for an aggressive hand-held magnetometer clearance operation to depth of detection for MEC items identified as either Discarded Military Munitions (DMM) or those types designed not to penetrate the ground (trip flares, hand grenades, etc.) where earth-moving (cut/fill) activities have not altered the ground surface.

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 origination of the step-out process was first presented in the Army EE/CA documents as a means to ensure that no targets or impact areas were missed during remediation. The intent of this procedure was to identify MEC that was either launched, projected, or air dropped on targets.

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

There are a total of twenty-four MEC items (21 grenade fuzes, 2 practice grenades and 1 slap flare) recovered located within 200 feet of the easternmost MRS-3 boundary which result in a 3.3-acre step. Each of these items are identified as either DMM or those types not designed to penetrate the ground (trip flares, slap flares, hand grenades etc.). The resulting step-out at this location will be conducted through a 100% hand-held magnetometer geophysical detector clearance to the depth of detection followed by a (minimum) 25% QC check of the cleared area. Similarly, if other DMM are recovered during the intrusive operations within 200 feet of the MRS boundary step-outs will be conducted through a 100% hand-held magnetometer geophysical detector clearance to the depth of detection followed by a (minimum) 25% QC check of the cleared area. In addition, ADEM will be notified of all DMM-driven step-outs during the bi-weekly QC conference call.

A map of the step-outs and information related to the DMM finds in the referenced grids are attached.

Preparer of FCR (Print name and sign) Richard Satkin	Preparer's Title Project Manager	Date 7/10/09
UXOQCS - Reviewed (Print name and sign) Jason Soth	Accepted (Y/N) Yes UXOQCS	Date 7/10/09
Operations Manager- Reviewed (Print name and sign) Cecil Taylor	Accepted (Y/N) Yes Site Operations Manager	Date 7/10/09
Matrix PM - Reviewed (Print name and sign) Richard Satkin	Accepted (Y/N) Yes Project Manager	Date 7/10/09
ADEM - Reviewed (Print name and sign) Julie Anger	Accepted (Y/N) Yes Project Manager	Date 7/27/09

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August 31, 2009

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 #7 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) #7. FCR #7 is a request to modify the target reacquisition procedures for removal of digital geophysical mapping (DGM) targets, raising the peak amplitude required to excavate an anomaly at reacquisition from 7mV to 10mV. The anomaly targeting criteria will remain the same. During reacquisition, the EM61-MK2 is located directly over the source that caused a target to be selected during mapping. The result is that the response during reacquisition is generally higher than during mapping. Evidence from both the geophysical prove-out (GPO) and data collected in the field indicate that the use of a 10mV threshold for reacquisition will continue to meet project data quality objectives (DQOs).

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,

Julie Ange
Governmental Hazardous Waste Branch
Land Division

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

Attachment

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FCR #7

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

FCR #: 7	Date: 7/28/09
LOCATION: McClellan	Matrix Representative: Richard Satkin

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

Section 6.3.3.9 Anomaly Reacquisition: Modification of existing target reacquisition procedures to allow for removal of DGM targets in reacquisition where the reacquired peak amplitude of the anomaly associated with the target does not meet a minimum threshold established for reacquisition. The anomaly targeting criteria does not change. The minimum target reacquisition threshold will be 10 mV on the EM61-MK2 Channel 2.

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."

This supplemental reacquisition criteria (eliminating targets reacquired at <10 mV) meets the 95% DGM detection rate DQO of seeded test items in the GPO. Previous reacquisition tests in the GPO demonstrated that all seed items detected and targeted at 7mV were also reacquired at at least 10mV (see attached table of seed item mV comparisons for the original 2006 GPO reacquisition tests).

Because of the DGM sampling density of the EM61-MK2 utilized (10-cm along track spacing and 2.5-ft across track spacing), it is unlikely that a measurement point occurs exactly over the center of a munitions item where the greatest sensor response would (usually) be observed. This is why the peak amplitude of the anomaly, measured during the interrogation of the anomaly during target reacquisition, is usually greater than the targeted amplitude. The targeting criteria are conservatively designed to ensure that munitions items in unfavorable positions or orientations relative to the measurement locations are targeted. Because, we interrogate each target location individually during reacquisition, we can ensure that we collect EM61-MK2 measurements directly over the source of each anomaly. Based on an assessment of over 185,000 DGM targets selected, reacquired, and dug to date, we have concluded that DGM targets (targeted at at least 7mV) which reacquire at less than 10mV represent non-MEC items to the standards of the GPO DQO. This change will allow for greater operational efficiencies in the field.

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

Revised Section 6.3.3.9 (Anomaly Reacquisition) to append the following text to the end of the first paragraph. "DGM targets whose peak amplitudes reacquire at less than the demonstrated reacquisition threshold established in the GPO may be excluded from further intrusive investigation during reacquisition. **The reacquisition threshold established in FCR#7 is 10mV on Channel 2.** Any target so excluded will be documented in the reacquisition documentation as 'reacquired at less than the reacquisition threshold.'"

Revised Section 10.7.4.2 (Intrusive Operations). Change "target" to "reacquired target" in defining QC failure criteria.

The reacquisition threshold will also be included in subsequent site-specific work plans.

Preparer of FCR (Print name and sign) Kent Boler	Preparer's Title QA Geophysicist	Date 7/28/09
UXOQCS - Reviewed (Print name and sign) Jason Soth	Accepted (Y/N) Yes UXOQCS	Date 7/28/09
Operations Manager- Reviewed (Print name and sign) Cecil Taylor	Accepted (Y/N) Yes Site Operations Manager	Date 7/28/09
Matrix PM - Reviewed (Print name and sign) Richard Satkin	Accepted (Y/N) Yes Project Manager	Date 7/28/09
ADEM - Reviewed (Print name and sign) Julie Anze	Accepted (Y/N) Yes	Date 8/31/09

MRS	Unique Target ID	Seed Item ID	Seed Item Type	Reac Team ID	Reac Team Leader	Date of Reac	DGM Target Selection mV	Reac Pre- Dig Peak Reading mV	Reac Easting Offset ft	Reac Northing Offset ft	Reacquisition Comments
GPO	0627GPO2001	FTM_59	Mine AT M12A1	Geo_Reac_1	JEL	07-Aug-06	736.04	1000	1.5	.5	Broad Peak.
GPO	0627GPO2002	FTM_52	81mm Mortar WP	Geo_Reac_1	JEL	07-Aug-06	262.92	301	1	-1	* Reconstructed from ECC data
GPO	0627GPO2003	-	-	Geo_Reac_2	RDB	15-Aug-06	149.34	184	0	1	No Comments.
GPO	0627GPO2004	FTM_53	81mm Mortar WP	Geo_Reac_1	JEL	07-Aug-06	125.12	152	1.5	0	No Comments.
GPO	0627GPO2005	FTM_65	4.2" Mortar Frag	Geo_Reac_2	RDB	15-Aug-06	97.83	170	0	0	No Comments.
GPO	0627GPO2006	FTM_46	81mm Mortar Light	Geo_Reac_2	RDB	15-Aug-06	96.48	120	-1	0	Broad Peak.
GPO	0627GPO2007	-	-	Geo_Reac_2	RDB	15-Aug-06	91.3	117	1	1	Same as Anomaly 60.
GPO	0627GPO2008	FTM_74	155 Schrapnel	Geo_Reac_2	RDB	15-Aug-06	91.02	112	1	0	No Comments.
GPO	0627GPO2009	FTM_69	90mm Shrapnel	Geo_Reac_2	RDB	15-Aug-06	77.33	96	-1.5	0	Broad Peak.
GPO	0627GPO2010	FTM_60	3.5" Rocket	Geo_Reac_1	JEL	07-Aug-06	73.69	72	-1.5	.5	No Comments.
GPO	0627GPO2011	FTM_21	M33 Grenade	Geo_Reac_2	RDB	15-Aug-06	72.32	105	0	1	No Comments.
GPO	0627GPO2012	FTM_10	Rifle Grenade	Geo_Reac_1	JEL	07-Aug-06	65.53	81	1	-2	Same as Anomaly 27.
GPO	0627GPO2013	FTM_62	3.5" Rocket	Geo_Reac_1	JEL	07-Aug-06	59.35	49	.5	1	Broad Peak.
GPO	0627GPO2014	FTM_43	M48 Trip Flare	Geo_Reac_2	RDB	15-Aug-06	58.51	182	1.5	-1.5	Same as Anomaly 18.
GPO	0627GPO2015	-	-	Geo_Reac_1	JEL	07-Aug-06	53.97	60	0	2	Control Point
GPO	0627GPO2016	FTM_16	37mm HE	Geo_Reac_2	RDB	15-Aug-06	52.8	75	0	0	No Comments.
GPO	0627GPO2017	FTM_34	2.36" Rocket	Geo_Reac_2	RDB	15-Aug-06	51.22	78	-1	-1.5	No Comments.
GPO	0627GPO2018	FTM_43	M48 Trip Flare	Geo_Reac_2	RDB	15-Aug-06	49.48	182	-.5	-2.5	Same as Anomaly 14.
GPO	0627GPO2019	FTM_61	3.5" Rocket	Geo_Reac_2	RDB	15-Aug-06	46.64	88	0	0	No Comments.
GPO	0627GPO2020	FTM_36	60mm Mortar	Geo_Reac_1	JEL	07-Aug-06	46.42	46	.5	-1.5	No Comments.
GPO	0627GPO2021	FTM_34	2.36" Rocket	Geo_Reac_2	RDB	15-Aug-06	45.46	70	0	-1.5	No Comments.
GPO	0627GPO2022	FTM_18	37mm HE	Geo_Reac_1	JEL	07-Aug-06	44.81	67	-1.5	0	No Comments.
GPO	0627GPO2023	FTM_38	60mm Mortar	Geo_Reac_1	JEL	07-Aug-06	44.64	62	-1	-1	Same as Anomaly 33.
GPO	0627GPO2024	FTM_27	Smoke Grenade	Geo_Reac_2	RDB	15-Aug-06	43.02	69	0	1	No Comments.
GPO	0627GPO2025	FTM_20	37mm HE	Geo_Reac_2	RDB	15-Aug-06	38.82	64	1	0	No Comments.
GPO	0627GPO2026	FTM_15	37mm HE	Geo_Reac_2	RDB	15-Aug-06	37.72	70	0	0	No Comments.
GPO	0627GPO2027	FTM_10	Rifle Grenade	Geo_Reac_1	JEL	07-Aug-06	37.40	81	-2	2.5	Same as Anomaly 12.
GPO	0627GPO2028	FTM_37	60mm Mortar	Geo_Reac_2	RDB	15-Aug-06	36.67	47	.5	0	No Comments.
GPO	0627GPO2029	FTM_12	Rifle Grenade	Geo_Reac_1	JEL	07-Aug-06	36.44	31	-1	0	Broad Peak.
GPO	0627GPO2030	FTM_04	M67 Grenade	Geo_Reac_2	RDB	15-Aug-06	35.81	52	.5	0	No Comments.
GPO	0627GPO2031	FTM_42	60mm Mortar	Geo_Reac_2	RDB	15-Aug-06	32.51	44	0	0	No Comments.
GPO	0627GPO2032	FTM_70	105 HE Frag	Geo_Reac_2	RDB	15-Aug-06	31.06	41	0	0	No Comments.
GPO	0627GPO2033	FTM_38	60mm Mortar	Geo_Reac_1	JEL	07-Aug-06	30.96	62	1.5	1	Same as Anomaly 23.
GPO	0627GPO2034	FTM_48	81mm Mortar Light	Geo_Reac_2	RDB	15-Aug-06	30.91	36	-.5	0	No Comments.
GPO	0627GPO2035	FTM_14	37mm HE	Geo_Reac_2	RDB	15-Aug-06	30.54	35	.5	-.5	No Comments.
GPO	0627GPO2036	FTM_51	3" Stokes	Geo_Reac_1	JEL	07-Aug-06	30.28	42	0	-1	No Comments.
GPO	0627GPO2037	FTM_68	90mm Shrapnel	Geo_Reac_2	RDB	15-Aug-06	29.51	42	-.5	0	Broad Peak.
GPO	0627GPO2038	FTM_06	M67 Grenade	Geo_Reac_1	JEL	07-Aug-06	27.50	31	0	1.5	No Comments.
GPO	0627GPO2039	FTM_56	81mm Mortar Teardrop	Geo_Reac_1	JEL	07-Aug-06	30.67	32	0	0	* Reconstructed from ECC data
GPO	0627GPO2040	FTM_11	Rifle Grenade	Geo_Reac_2	RDB	15-Aug-06	25.89	57	.5	1	Same as Anomaly 41.
GPO	0627GPO2041	FTM_11	Rifle Grenade	Geo_Reac_2	RDB	15-Aug-06	24.19	57	-1	0	Same as Anomaly 40.
GPO	0627GPO2042	FTM_22	MK2 Grenade	Geo_Reac_2	RDB	15-Aug-06	24.19	26	0	-.5	No Comments.

MRS	Unique Target ID	Seed Item ID	Seed Item Type	Reac Team ID	Reac Team Leader	Date of Reac	DGM Target Selection mV	Reac Pre- Dig Peak Reading mV	Reac Easting Offset ft	Reac Northing Offset ft	Reacquisition Comments
GPO	0627GPO2043	FTM_75	155 HE	Geo_Reac_1	JEL	07-Aug-06	23.99	31	1	-1	No Comments.
GPO	0627GPO2045	FTM_71	105 HEP	Geo_Reac_1	JEL	07-Aug-06	23.65	26	-.5	-1	No Comments.
GPO	0627GPO2046	FTM_72	105 HEP	Geo_Reac_1	JEL	07-Aug-06	22.29	26	0	0	No Comments.
GPO	0627GPO2047	FTM_23	MK2 Grenade	Geo_Reac_2	RDB	15-Aug-06	21.53	36	0	0	No Comments.
GPO	0627GPO2048	FTM_39	60mm Mortar	Geo_Reac_2	RDB	15-Aug-06	21.06	60	0	0	No Comments.
GPO	0627GPO2049	FTM_17	37mm HE	Geo_Reac_1	JEL	07-Aug-06	20.76	26	.5	0	No Comments.
GPO	0627GPO2050	FTM_29	37mm APT	Geo_Reac_2	RDB	15-Aug-06	20.42	33	0	0	No Comments.
GPO	0627GPO2051	FTM_07	M67 Grenade	Geo_Reac_2	RDB	15-Aug-06	20.3	32	2	-1	No Comments.
GPO	0627GPO2052	FTM_01	40mm Practice	Geo_Reac_2	RDB	15-Aug-06	20.21	30	0	0	No Comments.
GPO	0627GPO2053	-	-	Geo_Reac_2	RDB	15-Aug-06	19.02				DO NOT DIG! (Survey Nail).
GPO	0627GPO2054	FTM_28	37mm APT	Geo_Reac_1	JEL	07-Aug-06	18.17	30	-.5	-.5	No Comments.
GPO	0627GPO2055	FTM_55	81mm Mortar WP	Geo_Reac_2	RDB	15-Aug-06	16.84	10	0	0	No Comments.
GPO	0627GPO2056	FTM_44	75mm Shrapnel	Geo_Reac_2	RDB	15-Aug-06	16.81	13	.5	.5	No Comments.
GPO	0627GPO2057	FTM_08	M67 Grenade	Geo_Reac_2	RDB	15-Aug-06	16.55	25	0	0	No Comments.
GPO	0627GPO2058	FTM_09	M67 Grenade	Geo_Reac_1	JEL	07-Aug-06	16.32	19	.5	-1	No Comments.
GPO	0627GPO2059	FTM_67	75mm Shrapnel	Geo_Reac_1	JEL	07-Aug-06	16.23	20	0	1	No Comments.
GPO	0627GPO2060	FTM_63	3" 50	Geo_Reac_2	RDB	15-Aug-06	16.22	110			Same as Anomaly 7.
GPO	0627GPO2061	FTM_49	81mm Mortar Light	Geo_Reac_1	JEL	07-Aug-06	15.92	16	-1.5	.5	No Comments.
GPO	0627GPO2062	FTM_33	37mm APT	Geo_Reac_1	JEL	07-Aug-06	15.74	25	-.5	-1.5	No Comments.
GPO	0627GPO2063	FTM_05	M67 Grenade with fuze	Geo_Reac_2	RDB	15-Aug-06	15.72	40	-1.5	0	No Comments.
GPO	0627GPO2064	-	-	Geo_Reac_2	RDB	15-Aug-06	15.39	28	-1	-1.5	Same as Anomaly 68.
GPO	0627GPO2065	FTM_45	75mm Shrapnel	Geo_Reac_2	RDB	15-Aug-06	14.94	26	0	0	No Comments.
GPO	0627GPO2066	FTM_19	37mm HE	Geo_Reac_2	RDB	15-Aug-06	14.75	18		1	Same as Anomaly 88.
GPO	0627GPO2067	FTM_58	81mm Mortar Teardrop	Geo_Reac_1	JEL	07-Aug-06	14.52	52	-1	.5	No Comments.
GPO	0627GPO2068	FTM_54	81mm Mortar WP	Geo_Reac_2	RDB	15-Aug-06	14.01	28	1.5	1.5	Same as Anomaly 64.
GPO	0627GPO2069	FTM_25	MK2 Grenade	Geo_Reac_2	RDB	15-Aug-06	13.46	31	0	0	No Comments.
GPO	0627GPO2070	FTM_30	37mm APT	Geo_Reac_1	JEL	07-Aug-06	13.35	29	.5	0	No Comments.
GPO	0627GPO2071	-	-	Geo_Reac_2	RDB	15-Aug-06	13.16				DO NOT DIG! Terrain Induced Response.
GPO	0627GPO2072	FTM_02	40mm Practice	Geo_Reac_1	JEL	07-Aug-06	12.67	21	1	0	No Comments.
GPO	0627GPO2073	FTM_13	Rifle Grenade	Geo_Reac_2	RDB	15-Aug-06	12.38	32	-.5	-1	No Comments.
GPO	0627GPO2074	-	-	Geo_Reac_2	RDB	15-Aug-06	11.98				DO NOT DIG! Terrain Induced Response.
GPO	0627GPO2075	FTM_03	40mm Practice	Geo_Reac_1	JEL	07-Aug-06	11.76	17	.5	-.5	No Comments.
GPO	0627GPO2076	FTM_31	37mm APT	Geo_Reac_1	JEL	07-Aug-06	11.40	18	.5	-.5	Same as Anomaly 77.
GPO	0627GPO2077	FTM_31	37mm APT	Geo_Reac_1	JEL	07-Aug-06	11.32	18	-.5	1	Same as Anomaly 76.
GPO	0627GPO2078	FTM_40	60mm Mortar	Geo_Reac_1	JEL	07-Aug-06	11.31	18	0	-1.5	No Comments.
GPO	0627GPO2079	-	-	Geo_Reac_1	JEL	07-Aug-06	11.08	20	-2	0	Anomaly Sourced In Adjacent Grid.
GPO	0627GPO2080	FTM_26	M26 Grenade with fuze	Geo_Reac_1	JEL	07-Aug-06	11.02	16	1.5	.5	No Comments.
GPO	0627GPO2081	FTM_66	81mm Mortar Light	Geo_Reac_1	JEL	07-Aug-06	10.74	18	1	1	No Comments.
GPO	0627GPO2082	FTM_64	75mm Shrapnel	Geo_Reac_2	RDB	15-Aug-06	10.53	21	.5	-.5	No Comments.
GPO	0627GPO2083	FTM_24	MK2 Grenade	Geo_Reac_1	JEL	07-Aug-06	9.72	18	-1	1	No Comments.
GPO	0627GPO2084	-	-	Geo_Reac_1	JEL	07-Aug-06	9.11	13	0	-1	Influence From Adjacent Anomaly 36.
GPO	0627GPO2085	-	-	Geo_Reac_1	JEL	07-Aug-06	9.03	18	0	0	No Comments.

MRS	Unique Target ID	Seed Item ID	Seed Item Type	Reac Team ID	Reac Team Leader	Date of Reac	DGM Target Selection mV	Reac Pre- Dig Peak Reading mV	Reac Easting Offset ft	Reac Northing Offset ft	Reacquisition Comments
GPO	0627GPO2086	FTM_50	3" Stokes	Geo_Reac_2	RDB	15-Aug-06	8.82	14	0	-1.5	Same as Anomaly 97.
GPO	0627GPO2087	-	-	Geo_Reac_2	RDB	15-Aug-06	8.74	17	0	0	No Comments.
GPO	0627GPO2088	FTM_19	37mm HE	Geo_Reac_2	RDB	15-Aug-06	8.59	18	.5	0	Same as Anomaly 66.
GPO	0627GPO2089	-	-	Geo_Reac_2	RDB	15-Aug-06	8.39	17	0	0	Suspected Terrain Induced Response.
GPO	0627GPO2090	FTM_57	81mm Mortar Teardrop	Geo_Reac_2	RDB	15-Aug-06	8.18	14	0	.5	No Comments.
GPO	0627GPO2091	FTM_47	81mm Mortar Light	Geo_Reac_1	JEL	07-Aug-06	8.03	13	1	0	No Comments.
GPO	0627GPO2092	FTM_35	2.36" Rocket	Geo_Reac_1	JEL	07-Aug-06	7.51	16	-.5	2	Broad Peak
GPO	0627GPO2093	-	-	Geo_Reac_1	JEL	07-Aug-06	7.31	11	-1	1.5	MAG ME! (To the Extent of the Footprint).
GPO	0627GPO2094	-	-	Geo_Reac_1	JEL	07-Aug-06	7.30	8	1.5	1.5	MAG ME! (To the Extent of the Footprint).
GPO	0627GPO2095	-	-	Geo_Reac_1	JEL	07-Aug-06	7.21	8	.5	1.5	No Comments.
GPO	0627GPO2096	FTM_73	105 HEP	Geo_Reac_2	RDB	15-Aug-06	6.84	20	-1.5	0	No Comments.
GPO	0627GPO2097	-	-	Geo_Reac_2	RDB	15-Aug-06	5.95	13	2.5	0	Same as Anomaly 86.
GPO	0627GPO2098	-	-	Geo_Reac_1	JEL	07-Aug-06	5.94	21	.5	1	Broad Response Area. Influence Outside of the
GPO	0627GPO2099	-	-	Geo_Reac_2	RDB	15-Aug-06	5.89	9	0	-1.5	No Comments.
GPO	0627GPO2100	-	-	Geo_Reac_1	JEL	07-Aug-06	5.73	4	0	0	DO NOT DIG! Terrain Induced Response.
GPO	0627GPO2101	-	-	Geo_Reac_1	JEL	07-Aug-06	5.58	0	0	0	DO NOT DIG! Terrain Induced Response.
GPO	0627GPO2102	-	-	Geo_Reac_1	JEL	07-Aug-06	5.53	10	2	-2	No Comments.
GPO	0627GPO2103	-	-	Geo_Reac_2	RDB	15-Aug-06	5.2	12	0	0	No Comments.

Notes:

Data were taken from the 2006 GPO target reacquisition demonstration testing.

Baseline DGM data were the Geo_Team_2 6/27/2006 GPO dataset which was targetd at 5 mV on Channel 2.

Geo_Reac_1 reacquired the north halh of the GPO grid targets and Geo_Reac_2 reacquired the south half of the GPO grid targets.

73 or 75 GPO seeds were detected and targeted (97.3%). Seed items FTM_32 and FTM_41 were not detected /targeted.

All seed items which were detected were reacquited at >= 10 mV. Using a reacuisition threshold or 10 mV (also) gives a detection rate or 73 or 75 seeds (97.3%).

DGM target reacquired at less than 10 mV on Ch 2. None were associated with seed item locations.

ONIS "TREY" GLENN, III
DIRECTOR

BOB RILEY
GOVERNOR

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November 5, 2009

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

RE: ADEM Review and Concurrence: Field Change Requests #8 and #9 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 Requests (FCR) #8 and #9. FCR #8 is a request to use X-ray imaging to determine whether or not certain munitions and explosives of concern (MEC) are inert or explosively loaded. This will reduce the number of unneeded explosive operations. FCR#9 is a request to add the White's DFX 300 geophysical sensor to the list of sensors approved for surface, near surface, and 1-ft. MEC clearance. The equipment has been tested on the geophysical prove-out area (GPO) and it successfully detected all of the seeded items buried to a depth of 1-ft.

ADEM concurs with the requests 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,

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 #8

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

FCR #: 8	**Date: 8/26/09**
LOCATION: McClellan	**Matrix Representative: Richard Satkin**

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

Appendix E paragraph 7.5 Located MEC Procedures: Modification to existing procedures to allow for the use of a portable x-ray to assist with demolition operations in determining whether an item is live or practice.

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."

For some MPPEH, the 2.36-inch rocket in particular, it is difficult /impossible to determine the explosive hazard from the exterior characteristics of the items in the field. This results in numerous blow-in-place operations on non-explosively hazardous practice rounds. The utilization of the X-Ray will help identify munitions as live or practice. This will allow for a more efficient and cost effective manner in which demolition operations are conducted by allowing the Demo team to only spend time and materiel on live items. Down time for contractors will also be reduced by not having to move out of the area for would be demolition operations.

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

A new section will be added to the Programmatic Work Plan – Section 2.5.9 X-Ray Operations. MES may periodically subcontract or otherwise make available an X-Ray munitions inspection device with a qualified operator to field inspect 2.36-in rockets and other MPPEH which are difficult to positively identify from exterior characteristics. The X-Ray operator will be a qualified UXO technician who will be designated as essential personnel for the purposes of the inspection. If an X-Ray munitions inspection device with a qualified operator is available, a Team Leader may request X-Ray inspection of any MPPEH which cannot be positively identified. Standard operating procedures for X-Ray operations and for team procedures for items to be X-Rayed are described in SOP – X-Ray Operations (attached).

Three additional entries will be available in the "Anomaly Disposition Selection" menu in the PDA to the DEMO Supervisor. The new selections are: "X-Rayed Inert, "X-Rayed BIP" and "X-Rayed Consolidation". At the end of each day the X-Ray technician will remit his accountability paperwork to the Demo Supervisor. The Demo Supervisor will reconcile the Anomaly Disposition Status of each X-Rayed item in the Demo PDA to reflect its status post X-Ray. As the X-Ray technician determines an item to be inert, he will remove the nose cone from the item, or otherwise make it readily identifiable as inert, keep possession of it and bring all the inert items he/she X-Rayed for the day into the scrap processing area for turn in.

Preparer of FCR (Print name and sign) Jason Soth	Preparer's Title UXOQCS	Date – 9/29/09
UXOQCS - Reviewed (Print name and sign) Jason Soth	Accepted (Y/N) Yes UXOQCS	Date – 9/29/09
Operations Manager- Reviewed (Print name and sign) Cecil Taylor	Accepted (Y/N) Yes Site Operations Manager	Date - 10/5/09
Matrix PM - Reviewed (Print name and sign) Richard Satkin	Accepted (Y/N) Yes Project Manager	Date – 10/9/09
ADEM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date 11/5/09

FCR #9

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

FCR #: 9	**Date: 9/21/09**
LOCATION: McClellan	**Matrix Representative: Kent Boler**

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

The White's DFX 300 electromagnetic metal detector is approved for use as a handheld detector for clearance to one foot, aggressive surface/near surface clearance, and surface sweep operations.

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 new White's DFX 300 electromagnetic metal detector was evaluated in the GPO during the week of 31 August 2009 where it was demonstrated detection and location at least 95% of all GPO items buried one foot or less. The DFX 300 was utilized using the McClellan UXO program settings previously developed for the Whites XLT with the hot rock rejection function enabled. The DFX 300 detected 36 of 36 GPO seed items buried one foot or less (and 16 of the 30 buried deeper than one foot) with 141 false positives.

This change will allow for greater operational efficiencies in the field as the White's DFX 300 more reliable for items buried 0.5-1.0 feet than the Whites XLT (which has not been approved for one foot clearance) is lighter and easier to swing than the Vallon metal detector and is less sensitive to hot rock than the Schonstedt gradiometer.

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

The Whites DFX 300 is approved for use as a handheld detector for clearance to one foot, aggressive surface/near surface clearance, and surface sweep operations using the McClellan UXO program settings and the hot rock rejection function enabled.

Updated list of approved **handheld** detectors based on GPO evaluation:
- Surface Sweep: Vallon VMH (large & small head), Schonstedt GA-92XT/52CX, **Whites DFX 300**/XLT
- Aggressive Surface/Near Surface Clearance (6-in Sweep): Vallon VMH (large & small head), Schonstedt GA-92XT/52CX, **Whites DFX 300**/XLT
- One Foot Clearance: Vallon VMH (large & small head), Schonstedt GA-92XT/52CX, **Whites DFX 300**
- Clearance to Depth: Vallon VMH (large & small head), Schonstedt GA-92XT/52CX

No text changes are required for the Programmatic Work Plan, Revision 1 however, the list of approved handheld detectors will be included in subsequent site-specific work plans.

Preparer of FCR (Print name and sign)	Preparer's Title	Date
Kent Boler [signature]	QA Geophysicist	9/21/09
UXOQCS - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Jason Soth [signature]	UXOQCS	9/22/09
Operations Manager- Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Cecil Taylor [signature]	Site Operations Manager	9/22/09
Matrix PM - Reviewed (Print name and sign)	Accepted (Y/N) Yes	Date
Richard Satkin [signature]	Project Manager	9/23/09
ADEM - Reviewed (Print name and sign)	Accepted (Y/N)	Date
Julie Ange [signature]	Yes	11/5/09