Final

Removal Action Report
Installation Restoration Program Site 1, Adjacent Property

FORMER MARINE CORPS AIR STATION
EL TORO, CALIFORNIA

August 2011

Prepared for:
Base Realignment and Closure
Program Management Office West
San Diego, California

Prepared under:
Naval Facilities Engineering Command
Contract Number N62742-03-D-1837
Contract Task Order 0032
DCN: ET-1837-0032-0015

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Honolulu, HI 96813

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APPROVAL PAGE

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EXECUTIVE SUMMARY

This Report documents the completion of the Time-Critical Removal Action (TCRA) to address potential explosive safety hazards on property located immediately to the west of and adjacent to Installation Restoration Program (IRP) Site 1, the former Explosive Ordnance Disposal (EOD) Training Range, at former Marine Corps Air Station (MCAS) El Toro, California, hereinafter referenced as the Adjacent Property.

The potential munitions and explosives of concern (MEC) items on the Adjacent Property are a result of historical past EOD training activities that were conducted within the boundaries of IRP Site 1. The Adjacent Property is owned by The Irvine Company (TIC) and Orange County Flood Control District (OCFCD).

The Department of Defense (DoD) has the authority to undertake response actions under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), including removal actions, under 42 United States Code (U.S.C.) Section (§) 9604, 10 U.S.C. § 2705, and federal Executive Order 12580 as amended.

The TCRA comprehensively evaluated the presence, types, and distribution of munitions, and based on this evaluation, munitions that were identified and presented an explosive hazard were removed. Other items identified that were deemed not to present an explosive hazard were also removed from the site. The TCRA reduced the potential hazard associated with identified exposure pathways to munitions The property owners were provided notice of the potential exposure pathways after the completion of the TCRA activities.

Background

IRP Site 1, Adjacent Property is located in the foothills of the Santa Ana Mountains. The Adjacent Property consists of open space immediately west of IRP Site 1, which is in the northeast portion of former MCAS El Toro. IRP Site 1 was used for EOD training from 1952 until closure of former MCAS El Toro on 2 July 1999.

The conceptual site model (CSM) is based on the premise that the presence of munitions found on the Adjacent Property is due to kick-outs from EOD training activities conducted within the boundaries of the former EOD Training Range, and therefore any munitions on the Adjacent Property will be found at or near the ground surface. The surficial geology/topography of the general area is hard, sandstone bedrock which is exposed on the steep hillsides, with areas having little to no soil. The hillside directly adjacent to the former EOD Training Range slopes steeply away from the property boundary; this geometry and hard nature of the bedrock in this area is expected to have resulted in the gravitational transport of munitions downhill, toward the base of the slope along the gullies.

MEC and material potentially presenting an explosive hazard (MPPEH) items were recovered on IRP Site 1 Adjacent Property, during investigations conducted in 2002 and 2008. For the TCRA, the Adjacent Property was subdivided into three areas based on results from the 2008 munitions characterization conducted on the property and on the relative probability of encountering MEC. The three areas are provided below:

- Area A, property owned by TIC, was designated as an area with a relatively high probability of encountering MPPEH based primarily on the close proximity to IRP Site 1, and includes the hillside west of, and immediately adjacent to IRP Site 1.

- Area B, property owned by the OCFCD, was designated as an area with a relatively lower probability of encountering MPPEH, and includes the area east of the Agua Chinon Retarding Basin to the western boundary of Area A, and areas northeast of the Agua Chinon Retarding Basin. No munitions items were reported during the construction or maintenance activities within the Basin.
- Area C, property owned by TIC, was designated as an area with a relatively lower probability of encountering MPPEH, and includes the area west of Agua Chinon Basin. This Area was included in the TCRA because, during 2008 munitions characterization activities, one 2- by 4-inch metal fragment was identified and removed from this Area.

Project Coordination

Prior to initiating field activities, the Department of the Navy (DON) coordinated with all stakeholders. Entry permits were obtained from both landowners (TIC and OCFCD). The DON also coordinated with the United States Fish and Wildlife Service (USFWS) regarding natural resources protection for the project. The United States Environmental Protection Agency (U.S. EPA), the California Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board, Santa Ana Region (RWQCB) reviewed and concurred with the Final TCRA Work Plan (AECOM Technical services, Inc. [AECOM] 2010a) and Action Memorandum (DON 2010a). A public notice summarizing the project was distributed in the local newspapers. Approximately 1 week prior to commencing field activities, a kickoff meeting was held to finalize coordination protocols during field activities. Meeting attendees included the DON, the Orange County Sheriff's Department, the Irvine Police Department, and the Orange County Fire Authority.

Project activities were planned and executed under the supervision and in accordance with guidance and policies of the Department of Defense Explosives Safety Board (DDESB) and Marine Corps Systems Command (MARCORSYSCOM). MARCORSYSCOM was responsible for reviewing and coordinating approval of the Explosives Safety Submission (ESS) (DON 2009) by the DDESB. The ESS documented the explosives safety procedures to be followed during the TCRA activities.

Removal Action Activities

The TCRA activities were conducted in accordance with the approved project Work Plan (AECOM 2010a) and the Non-Conformance Report. The following activities were performed during implementation of the TCRA:

- Pre-mobilization coordination with stakeholders
- Biological reconnaissance, including coordination with USFWS
- Mobilization and kick-off meeting
- Clearance of surface metallic objects by unexploded ordnance (UXO) technicians
- Vegetation trimming
- Establishment of removal action boundary and grid system
- Digital geophysical mapping (DGM) survey using cart-mounted detectors, digital recorders, and global positioning system (GPS) location (Area A and a small portion of Area B)
- Analog geophysical survey using hand-held metal detectors (called mag-and-flag)
- Intrusive investigation (digging) of all identified anomalies and the removal of any subsurface MPPEH

- Destruction of Material Documented as an Explosive Hazard (MDEH) with the vast majority of these items consisting of 20-millimeter (mm) projectiles
- Recycling all Material Documented as Safe (MDAS), which is any MPPEH item not presenting an explosive hazard
- Demobilization

The TCRA Work Plan (AECOM 2010a) anticipated, and fieldwork confirmed, that some areas would not be accessible using geophysical equipment due to steep terrain and/or dense vegetation. Consistent with the CSM, items initially deposited on the steep slopes and within the gullies eventually move to the bottom of the slopes/gullies due to gravitational transport mechanisms. Surveys were conducted at the bottoms of the slopes/gullies below all areas that were not accessible. Areas with steep terrain and/or dense vegetation were visually inspected to the maximum extent practicable.

The TCRA was conducted in two phases. Phase I was conducted from 1 February 2010 through 26 March 2010, and Phase II was conducted from 18 May 2010 through 11 June 2010.

Removal Action Results

Area A (East of the Agua Chinon Retarding Basin)

Within Area A, which is owned by TIC, approximately 11.8 acres were surveyed using DGM techniques and an additional 15.4 acres were surveyed using analog geophysical equipment, followed by the removal of all identified anomalies. A total of 156 MDEH items (including 150, 20-mm projectiles) and 346 MDAS items were collected between 0 and 18 inches below the ground surface in this area.

Area B (East and North of the Agua Chinon Retarding Basin)

Within Area B, which is owned by OCFCD, approximately 5.0 acres were surveyed using analog geophysical equipment, and an additional 0.3 acres were surveyed using DGM equipment. A total of 3 MDEH items (including two 20-mm projectiles) and 3 MDAS items were collected between 0 and 6 inches below the ground surface in this area.

Area C (West of the Agua Chinon Retarding Basin)

Within Area C, which is owned by TIC, approximately 3.5 acres were surveyed within Area C using analog geophysical equipment. A total of two MDEH items were collected at Area C (including one 20-mm projectile) and three MDAS items were collected and removed. The 3.5 acres included approximately 1.4 acres that consisted of a step-out area that was surveyed because MPPEH items were found within 100 feet of the western boundary of the initial investigation are. No additional MPPEH items were found in this step-out area. All items were collected between 0 and 12 inches below the ground surface in this area.

MEC Hazard Assessment

The MEC Hazard Assessment (MEC HA) methodology for assessing potential explosive hazards to human receptors at munitions response sites (MRSs) (U.S. EPA 2008) was used to compare pre-removal-action explosive hazards under future land use conditions with post-removal-action explosive hazards under future land use conditions.

Results of the MEC HA for Areas A and B combined indicated a baseline (pre-TCRA) hazard of 525 (hazard category 4), and a post-TCRA hazard of 255 (hazard category 4). Results of the MEC HA for Area C indicated a baseline hazard of 675 (hazard category 3), and a post-TCRA hazard of 435 (hazard category 4). Hazard categories are ranked from 1 to 4, based on decreasing potential hazard (hazard category 1 represents a greater hazard than category 4). The post-TCRA MEC hazard for all three areas is classified as having the lowest of the four hazard categories.

Conclusions

The objective of the TCRA was to lower the potential explosive hazards associated with the Adjacent Property by evaluating the presence, types, and distribution of munitions and removing them. The following are findings and conclusions regarding the activities conducted during the TCRA:

- The presence and distribution of munitions were evaluated over all portions of Areas A, B, and C.
- All MPPEH items that were identified were removed and subsequently destroyed and recycled.
- A total of 161 MDEH items were recovered at depths ranging from the ground surface to 18 inches below the ground surface. The predominant MDEH item recovered was a 20-mm projectile (95 percent). No large subsurface anomalies, suggesting the use of subsurface detonation or burial pits, were identified.
- In accordance with the Non-Conformance Report (NCR), the 12-acre area that was initially surveyed with DGM equipment was re-surveyed using analog geophysical equipment to increase the confidence level that the objectives of the TCRA had been met.
- All identified MDEH items were classified as safe-to-move, and did not require blow-in-place operations.
- The findings of the TCRA are consistent with the CSM, which indicates that the presence of munitions on the Adjacent Property is due to kick-outs from training activities conducted within the boundaries of the former EOD Training Range.
- The potential explosive safety hazards associated with the Adjacent Property were reduced as a result of this TCRA.

MARCORSYCOM has concurred that the investigation and MDEH recovery techniques used during this TCRA were appropriate and consistent with the current state of practice. This Removal Action Report has been prepared to describe the field activities conducted during the TCRA and to document that the objectives of the TCRA have been met. The results of this removal action will be evaluated and incorporated into the appropriate IRP Site 1 CERCLA documentation.

CONTENTS

Approval Page i
Executive Summary iii
Acronyms and Abbreviations xi

1. Introduction 1-1

1.1 Site Description and Background 1-1
1.2 Land Use 1-2
1.2.1 IRP Site 1, Adjacent Property 1-2
1.2.2 IRP Site 1 1-2
1.3 Biological Resources 1-2
1.4 Site History 1-2
1.4.1 Explosive Ordnance Disposal Training Activities at IRP Site 1 1-2
1.4.2 Federal Bureau of Investigation Training Activities at IRP Site 1 1-3
1.5 Previous Investigations Pertaining to Munitions 1-3
1.5.1 Range Identification and Preliminary Range Assessment 1-3
1.5.2 Range Evaluation for Munitions and Explosives of Concern 1-4
1.5.3 2008 Munitions Characterization 1-4
1.5.3.1 Results of 2008 Munitions Characterization 1-4
1.6 Removal Action Objective 1-5
1.6.1 Removal Action Objective and Authorization 1-5
1.6.2 Conceptual Site Model 1-5
1.7 Roles and Responsibilities 1-6

2. Removal Action Activities 2-1

2.1 Pre-Mobilization Coordination and Biological Reconnaissance 2-1
2.2 Mobilization and Kick-Off Meeting, Phase I TCRA 2-2
2.3 Vegetation Trimming 2-2
2.4 Survey of Removal Action Boundaries and Grid System 2-3
2.5 Digital Geophysical Mapping Survey Using EM-61 MK2 2-3
2.5.1 Test Bed Installation 2-3
2.5.2 Data Acquisition 2-4
2.5.3 Data Processing 2-4
2.5.4 Anomaly Dig List 2-5
2.6 Analog Geophysical Surveys Using Hand-Held Metal Detectors 2-5
2.7 Intrusive Investigation of Anomalies 2-6
2.8 Land Survey of Investigated Areas 2-6
2.9 MDEH Render Safe Operations 2-6
2.10 MDAS and Cultural Debris Disposition 2-7
2.11 Demobilization 2-7
2.12 Health and Safety 2-8
2.13 Quality Control 2-8
2.13.1 Three Phases of Control 2-8
2.13.2 DGM Survey Quality Control 2-9
2.13.3 QC Blind Seeds 2-9
2.13.4 Grid Close-Out 2-10

2.13.5 Non-Conformances 2-10
2.13.5.1 Incomplete Anomaly Dig Lists 2-10
2.13.5.2 Management of Work Flow and Close-Out in the DGM Grids. 2-10
2.13.5.3 Non-Recovery of Blind Seeds in DGM Grids and Undocumented Blind Seeds Recovery. 2-11
2.14 Quality Assurance 2-11
2.15 TCRA Phase II 2-11
2.15.1 Remobilization Purpose and Scope 2-11
2.15.2 Pre-Mobilization Coordination and Biological Reconnaissance 2-12
2.15.3 Mobilization and Kick-Off Meeting 2-12
2.15.4 Reestablishment of Investigation Area Boundary and Grid System 2-12
2.15.5 Vegetation Trimming 2-12
2.15.6 Intrusive Investigation and Removal of 95 DGM Anomalies 2-13
2.15.7 Analog Geophysical Survey Using Hand-Held Metal Detectors on 12 Acres of Previous DGM Surveyed Areas Followed by Intrusive Investigation of Identified Anomalies 2-13
2.15.8 MDEH Render Safe Operations 2-13
2.15.9 MDAS and Cultural Debris Disposition 2-14
2.15.10 Demobilization 2-14
2.15.11 Health and Safety 2-14
2.15.12 Quality Control 2-14
2.15.12.1 Three Phases of Control 2-14
2.15.12.2 QC Blind Seeds 2-14
2.15.12.3 Grid Close-Out 2-15
2.15.12.4 Non-Conformances 2-15

3. Removal Action Results 3-1

3.1 Area A (East of the Agua Chinon Retarding Basin) 3-1
3.2 Area B (East and North of the Agua Chinon Retarding Basin) 3-1
3.3 Area C (West of the Agua Chinon Retarding Basin) 3-1
3.4 MDEH, MDAS, and CD Disposition 3-1
3.5 Quality Control 3-2
3.6 MEC Hazard Assessment 3-2

4. Conclusions and Recommendations 4-1

5. References 5-1

TABLES

2-1 Definable Features of Work and Dates of Quality Control Meetings
3-1 DGM Anomaly Investigation Results
3-2 Team 1 Mag-and-Flag Investigation Results for TCRA Phase I
3-3 Team 2 Mag-and-Flag Investigation Results for TCRA Phase I
3-4 Team 1 Mag-and-Flag Investigation Results for TCRA Phase II
3-5 Team 2 Mag-and-Flag Investigation Results for TCRA Phase II

FIGURES

1-1 Project Location Map
1-2 Site Plan
1-3 MEC Investigation Areas – 2002
1-4 MEC Investigation Results – 2002
1-5 Areas of 2008 Additional Characterization
1-6 Time-Critical Removal Action Areas and Future Land Use
2-1 TCRA Work Flow, Phase 1
2-2 Digital Geophysical Mapping Survey Anomaly Locations
2-3 TCRA Work Flow, Phase 2
3-1 IRP Site 1 Adjacent Property MDEH and MDAS Locations

APPENDICES

Appendix A Explosives Safety Submission Concurrence and Approval Letters
Appendix B Natural Resources Coordination and Biological Reconnaissance Email Reports
Appendix C Public Notices for Availability of Action Memorandum
Appendix D Geophysical Survey Report
Appendix E Demolition Notification Forms and Certificates of Destruction
Appendix F Quality Control Documentation
Appendix G Non-Conformance Report
Appendix H Quality Assurance Report
Appendix I Blind Seed Standard Operating Procedure, Blind Seed tracking List, and Project Work Flow
Appendix J MEC Hazard Assessment

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ACRONYMS AND ABBREVIATIONS

§	Section
AECOM	AECOM Technical Services, Inc.
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
BEM	Buried Explosion Module
bgs	below ground surface
BNI	Bechtel National, Inc.
BRAC	Base Realignment and Closure
CD	Cultural debris
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action Navy
CSM	conceptual site model
CSS	coastal sage scrub
DDESB	Department of Defense Explosives Safety Board
DFW	Definable Features of Work
DGM	Digital Geophysical Mapping
DoD	Department of Defense
DON	Department of the Navy
DTSC	California Department of Toxic Substances Control
Earth Tech	Earth Tech, Inc.
EOD	explosive ordnance disposal
ERRG	Engineering/Remediation Resources Group, Inc.
ESS	Explosives Safety Submission
FBI	Federal Bureau of Investigation
FEAD	Facility Engineering & Acquisition Division
GPS	global positioning system
GSV	Geophysical System Verification
ID	inside diameter
IRP	Installation Restoration Program
IVS	instrument verification strip
JEG	Jacobs Engineering Group
LRPM	Lead Remedial Project Manager
MARCORSYSCOM	Marine Corps Systems Command
MBTA	Migratory Bird Treaty Act
MCAS	Marine Corps Air Station
MD	munitions debris
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MEC	munitions and explosives of concern
MEC HA	MEC Hazard Assessment
MGFD	munition with the greatest fragmentation distance
mm	millimeter
MPPEH	material potentially presenting an explosive hazard
MRS	munitions response site
MSD	minimum separation distance
NAVFAC Pacific	Naval Facilities Engineering Command, Pacific
NAVFAC SW	Naval Facilities Engineering Command Southwest
NAVSEA	Naval Sea Systems Command

NCCP	Natural Community Conservation Plan
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCR	Non-Conformance Report
OCFCD	Orange County Flood Control District
OSHA	Occupational Safety and Health Administration
PM	Project Manager
PMO	Program Management Office
PPE	personal protective equipment
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RI	Remedial Investigation
RPM	Remedial Project Manager
RTK	real-time kinematic
RWQCB	California Regional Water Quality Control Board, Santa Ana Region
SOP	Standard Operating Procedure
SSO	Site Safety Officer
SUXOS	Senior UXO Supervisor
TCRA	Time-Critical Removal Action
TIC	The Irvine Company
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UXO	unexploded ordnance
UXOQCS	UXO Quality Control Specialist
UXOSO	UXO Safety Officer

1. Introduction

This report documents the completion of the time-critical removal action (TCRA) to address potential explosive safety hazards due to munitions and explosives of concern (MEC) on property located immediately to the west of and adjacent to Installation Restoration Program (IRP) Site 1, the former Explosive Ordnance Disposal (EOD) Training Range, at former Marine Corps Air Station (MCAS) El Toro, California, hereinafter referred to as the Adjacent Property.

This TCRA was conducted pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) under the delegated authority of the Office of the President of the United States (U.S.) by Executive Order 12580. This Order provides the U.S. Department of the Navy (DON) with the authority to conduct and finance removal actions. The removal action implementation was conducted in accordance with the following documents:

- Final Time-Critical Removal Action Work Plan, IRP Site 1, Adjacent Property, Former MCAS El Toro (AECOM Technical Services, Inc. [AECOM, formerly Earth Tech, Inc.] 2010a).
- Final Action Memorandum, Time-Critical Removal Action, IRP Site 1, Adjacent Property, Former MCAS El Toro (DON 2010a).
- Final Explosives Safety Submission, Time-Critical Removal Action, IRP Site 1, Adjacent Property, EOD Training Range, Former MCAS El Toro (DON 2009).

Prior to initiating field activities, the DON coordinated with all stakeholders. Entry permits were obtained from both landowners (The Irvine Company [TIC] and the Orange County Flood Control District [OCFCD]). The DON also coordinated with the United States Fish and Wildlife Service (USFWS) regarding natural resources protection for the project. The United States Environmental Protection Agency (U.S. EPA), the California Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board, Santa Ana Region (RWQCB) reviewed and concurred with the Final TCRA Work Plan (AECOM 2010a) and Action Memorandum (DON 2010a). Marine Corps Systems Command (MARCORSYSCOM) was responsible for reviewing and coordinating approval of the ESS prepared for the TCRA (DON 2009) by the Department of Defense Explosives Safety Board (DDESB).

The Report was prepared by AECOM on behalf of the DON Base Realignment and Closure (BRAC), Program Management Office (PMO) West and the Naval Facilities Engineering Command Southwest (NAVFAC SW). This work was authorized by the United States Navy, Naval Facilities Engineering Command, Pacific (NAVFAC Pacific) under contract task order No. 0032 of the Comprehensive Long-Term Environmental Action Navy (CLEAN) III Program, Contract No. N62742-03-D-1837.

1.1 SITE DESCRIPTION AND BACKGROUND

The Adjacent Property is located in the foothills of the Santa Ana Mountains (Figures 1-1 and 1-2). The Adjacent Property currently consists of open space and is immediately west of IRP Site 1, which is in the northeast portion of former MCAS El Toro. IRP Site 1 was used for training for EOD from 1952 until closure of former MCAS El Toro on 2 July 1999 (Bechtel National, Inc. [BNI] 1995). IRP Site 1 includes the 16.9-acre Northern EOD Training Range, the 16.6-acre Southern EOD Training Range, and a 40.2-acre buffer zone, for a total of approximately 73.7 acres in size (BNI 1995) (Figure 1-2). The majority of military EOD training took place at the Northern EOD Training Range.

1.2 LAND USE

1.2.1 IRP Site 1, Adjacent Property

The eastern-most portion of the Adjacent Property, adjacent to IRP Site 1, is owned by TIC. This property is currently undeveloped and is planned to remain undeveloped open space in perpetuity since this area is to be included as part of the Central and Coastal Natural Community Conservation Plan (NCCP) area (Figure 1-2). An ephemeral streambed (Agua Chinon Wash) is located in the middle portion of the Adjacent Property. This open space is owned by the OCFCD and is used as a sediment retarding and flood control basin. The western-most portion of the Adjacent Property is located west of Agua Chinon Wash and is currently open space owned by TIC, but is zoned for future development of medium-density residential housing.

1.2.2 IRP Site 1

Currently, IRP Site 1 is fenced and unused. The DON intends to transfer IRP Site 1 and anticipates that the likely future use of IRP Site 1 will be “like use”.

1.3 BIOLOGICAL RESOURCES

No detailed biological surveys are available for the Adjacent Property. However, surveys conducted within IRP Site 1 are relevant and provide data regarding what biological resources may be expected on the Adjacent Property. During the generalized biological survey conducted within IRP Site 1 in December 2000, four coastal California gnatcatchers (*Polioptila californica*), which are a Federally listed threatened species, were documented. Three individual cactus wren (*Campylorhynchus brunneicapillus*) were also documented in a cactus patch within the coastal sage scrub (CSS) in the northwestern quadrant of IRP Site 1. The cactus wren is a Federal regionally sensitive species. One non-vocalizing grasshopper sparrow (*Ammodramus savannarum*) was documented in non-native grassland in the north-central portion of IRP Site 1. Two southern California rufous-crowned sparrows (*Aimophila ruficeps canescens*) were documented in the CSS located in the north-central portion of IRP Site 1 (Federal species of concern). The dominant vegetation types at IRP Site 1 consist of non-native grassland, CSS, and toyon-sumac chaparral. CSS is considered a sensitive vegetation type by several resource agencies because it supports a number of State- and Federally-listed endangered, threatened, and rare vascular plants as well as several bird and reptile species that are Federally-listed or are candidate species for Federal listing. The October 2007 Santiago Canyon wildfire burned a significant portion of the vegetation at the Adjacent Property, including CSS. Reconnaissance-level surveys were conducted during the implementation of the TCRA. Findings from these surveys were consistent with historical observations. Details on these surveys are presented in subsequent sections of this report.

1.4 SITE HISTORY

No EOD training has been conducted on the Adjacent Property, which is still undeveloped. However, EOD training was conducted within the boundaries of IRP Site 1, and kick-outs from these training exercises are the source of munitions items that have a potential to pose explosive safety hazards at the Adjacent Property. The following subsections summarize munitions-related activities that have been conducted within IRP Site 1.

1.4.1 Explosive Ordnance Disposal Training Activities at IRP Site 1

The majority of military EOD training took place at the Northern EOD Training Range. The Southern EOD Training Range was used for EOD training by the Orange County Sheriff’s Department and Federal agencies (BNI 1995). Several demolition pits, and a range building (Building 795) are present at IRP Site 1. A former observation bunker constructed from metal ammunition cans existed at IRP Site 1 prior to October 2008. Many of these ammunition cans were

reported to be filled with the burned residue of disposed munitions, such as cartridge-actuated devices and 20-millimeter (mm) ammunition (United States Army Corps of Engineers [USACE] 1998). The soil in the ammunition cans was characterized during 2008 munitions investigations and disposed in accordance with applicable regulations, along with the empty cans.

Military ordnance items used at the site for training purposes included hand grenades, land mines, cluster bombs, general-purpose bombs, smoke bombs, various projectiles ranging from 20 mm through 105 mm, and rocket warheads. Civilian and commercial explosives, such as dynamite, and plastic and gelatinous explosives also have been used at the EOD Training Range. Munitions were detonated in trenches and pits, which were repeatedly excavated and backfilled with soil.

1.4.2 Federal Bureau of Investigation Training Activities at IRP Site 1

The Federal Bureau of Investigation (FBI) used IRP Site 1 for training purposes for many years (FBI 2000). The following paragraphs summarize the FBI's training and emergency response operations.

Bomb Technician Training. Bomb technician training consisted of "hands-on" explosive training one day per month. Bomb technicians demonstrated proficiency in firing both an electrical and nonelectrical charge. This training also included testing of new explosive products to determine their applicability to EOD operations. Generally, this involved only a few ounces of the material, and demolition was initiated off the ground on a hard target surface.

Post-Blast Investigation Training. Post-blast investigation training was held about four times per year and emphasized the identification, location, access, and recovery of explosive devices and any products surviving demolition. Various devices were detonated, and students secured and located, collected, and identified the fragments and components from the devices to reconstruct them.

Emergency Response Operations. The former EOD Training Range at IRP Site 1 served as a technical training area for the use and study of emergency explosive device responses. However, during emergency response operations, the FBI periodically transported improvised explosive devices to IRP Site 1 and rendered them safe either by disassembly or by the use of counter-charges. These types of operations occurred intermittently when devices were located by the FBI or by local law enforcement.

1.5 PREVIOUS INVESTIGATIONS PERTAINING TO MUNITIONS

Various environmental investigations have been performed as a part of the CERCLA process to characterize the physical attributes of IRP Site 1, including the geology and hydrogeology, the nature and extent of contamination, risks to human-health and the environment, and the feasibility of potential remediation technologies. The detailed procedures and results of these investigations are presented in the Final Phase II Remedial Investigation (RI) Report (Earth Tech 2006). The investigations pertaining to munitions at IRP Site 1 and the Adjacent Property are briefly summarized in the following sections. Figure 1-2 shows the location of the Adjacent Property in relation to its proximity to IRP Site 1.

1.5.1 Range Identification and Preliminary Range Assessment

The Range Identification and Preliminary Range Assessment was conducted to provide a historical baseline for former MCAS El Toro's active and inactive Ranges (USACE 1998). The study compiled information from existing sources and did not include sampling of the Ranges. A list of the types of munitions and their estimated quantities employed to destroy unserviceable items was presented; these items included various types of bulk explosives and blasting caps, and incendiary

hand grenades. Unexploded ordnance (UXO) was estimated at fewer than 1 per acre, and was assumed to be confined to the boundaries of IRP Site 1. The maximum depth of munitions was estimated at approximately 18 inches or less, which is the approximate depth of tilling at the site.

1.5.2 Range Evaluation for Munitions and Explosives of Concern

The 2002 MEC Range Evaluation (Earth Tech 2006) was conducted to evaluate the explosives safety risk at IRP Site 1 by characterizing the types, locations, and depths of MEC at the site, primarily within the IRP Site 1 property (see Figure 1-3 for investigation areas). The investigation identified the following four MEC items in the Northern EOD Training Range: one 2-inch section of flex-linear shaped charge at one location; and two 40-mm cartridge primers, and 1/4-pound of smokeless powder at a second location (see Figure 1-4). No MEC items were encountered in the Southern EOD Training Range, the Buffer Zone, or in the vicinity of the Range Perimeter (which includes a portion of the Adjacent Property) during the evaluation. The range evaluation resulted in the incidental recovery of 776 munitions debris (MD) items (totaling approximately 5,000 lbs) (Earth Tech 2006). The predominant MD item recovered was the 20-mm projectile. Results indicated that only MD items were found on the Adjacent Property.

1.5.3 2008 Munitions Characterization

In October 2007, the Santiago Canyon wildfire burned a significant portion of the vegetation within IRP Site 1 and on the Adjacent Property. The reduction in vegetation allowed the Navy to conduct additional investigation to confirm the distribution of MD on the Adjacent Property that was not accessible during the RI activities in 2002. In September and October 2008, the following activities were conducted in support of additional munitions characterization within IRP Site 1 and on the Adjacent Property. These characterization activities were conducted in accordance with an approved Explosives Safety Submission (ESS) (DON 2008) and approved project Work Plan (Earth Tech 2008). Activities included the following:

1. Characterization of munitions on-site – The purpose of this task was to further verify previous conclusions that the area investigated contains predominantly MD from kick-outs. The investigation included the Northern and Southern EOD Training Ranges, the Buffer Zone surrounding the training ranges, and the EOD Training Range Perimeter.
2. Characterization of munitions on the Adjacent Property – This task included verification of the extent of potential MEC and/or MD in the area.
3. Characterization of items contained within soil-filled ammunition cans located in the eastern portion of IRP Site 1 to assess if MEC or munitions constituents were present.
4. Evaluation and subsequent disposal of potential MEC items recovered during the 2002 MEC Range Evaluation, contained within a 55-gallon drum at IRP Site 1.

1.5.3.1 Results of 2008 Munitions Characterization

Characterization activities on the Adjacent Property were initially limited to an area approximately 550 feet by 115 feet (500 feet by 90 feet, plus 25-foot swaths on each of three outer sides). Visual surface sweeps were conducted on-site by a crew of seven UXO Technicians positioned abreast in a line, separated by approximately 5 feet. The visual surface sweeps were followed by near-surface clearance (detection to a depth of approximately 1 foot) using White's Pulse Induction Surfmaster all-metals detectors. These analog detectors were used to identify a total of 106 metallic anomalies, all of which were further investigated by digging to a maximum depth of approximately 1 foot below ground surface (bgs).

No MEC items were identified within the 25-foot swaths on the outer three sides. However, material potentially presenting an explosive hazard (MPPEH) items were observed immediately outside the area. Therefore, the visual surface sweep areas were expanded based on these observations until either no additional MPPEH items were observed or access was restricted by steep terrain and/or dense vegetation. The visual surface sweep areas were eventually expanded to include a total of approximately 43 acres (see Figure 1-5). MEC items were handled in a manner similar to on-site activities. A total of 25 MEC items (now referred to as MPPEH or Material Documented as an Explosive Hazard [MDEH]) were collected from the Adjacent Property and subsequently rendered safe by explosive detonation.

1.6 REMOVAL ACTION OBJECTIVE

Based on the 2008 munitions characterization findings and in particular, the presence of MPPEH/MEC on the Adjacent Property, a comprehensive evaluation of the presence of MPPEH/MEC and removal of identified munitions was recommended to address potential explosive hazards.

1.6.1 Removal Action Objective and Authorization

The overall objective of the TCRA was to reduce the potential explosive hazards associated with the Adjacent Property by evaluating the presence, types, and distribution of munitions, followed by the removal of identified munitions. This TCRA was conducted by the DON pursuant to CERCLA Section 120 and NCP (Title 40 of the Code of Federal Regulations [CFR] Part 300), under the delegated authority of the Office of the President of the U.S. by Executive Order 12580. The TCRA activities were conducted in accordance with the approved project Work Plan (AECOM 2010a) and the Non-Conformance Report (NCR).

1.6.2 Conceptual Site Model

The Conceptual Site Model (CSM) is based on the premise that the presence of munitions found on the Adjacent Property is due to kick-outs from EOD training activities conducted within the boundaries of the former EOD Training Range, and therefore any munitions on the Adjacent Property will be found at or near the ground surface. The surficial geology/topography of the general area is hard, sandstone bedrock which is exposed on the steep hillsides, with areas having little to no soil. The hillside directly adjacent to the former EOD Training Range slopes steeply away from the property boundary; this geometry and hard nature of the bedrock in this area is expected to have resulted in the gravitational transport of munitions downhill, toward the base of the slope along the gullies.

MEC and MPPEH items were recovered on IRP Site 1 Adjacent Property during investigations conducted in 2002 and 2008. For this TCRA, the Adjacent Property was subdivided into three areas as shown on Figure 1-6, based in part on results of the 2008 munitions characterization conducted on the property and on the relative probability of encountering MEC as follows:

- Area A, property owned by TIC, was designated as an area with a relatively high probability of encountering MPPEH based primarily on the close proximity to IRP Site 1, and includes the hillside west of, and immediately adjacent to, IRP Site 1.
- Area B, property owned by the OCFCD, was designated as an area with a relatively lower probability of encountering MPPEH, and includes the area east of the Agua Chinon Retarding Basin to the western boundary of Area A, and areas northeast of the Agua Chinon Retarding Basin. No munitions items were reportedly found during the construction or maintenance activities within the Basin.

- Area C, property owned by TIC, was also designated as an area with a relatively lower probability of encountering MPPEH, and includes the area west of Agua Chinon Wash. This area was included in the TCRA because, during the 2008 munitions characterization activities, one 2- by 4-inch metal fragment was identified and removed from this area.

1.7 ROLES AND RESPONSIBILITIES

- **Navy Remedial Managers.** The Lead Remedial Project Manager (LRPM) was responsible for coordinating the CERCLA-related activities during this TCRA. The Remedial Project Manager (RPM) supported the LRPM in reviewing recommendations made by AECOM, reviewing proposed changes to the TCRA design and implementation, and overseeing the overall implementation of the TCRA. The Facility Engineering and Acquisition Division (FEAD) Representative is responsible for coordination and oversight of all field work that takes place at former MCAS El Toro. The Natural Resources Specialist was responsible for coordination and oversight of all natural resources-related field work.
- **BRAC Cleanup Team (BCT).** The BRAC Environmental Coordinator (BEC) co-chairs the BCT and is responsible for coordinating environmental restoration and compliance programs at former MCAS El Toro. The U.S. EPA RPM, the DTSC RPM, and the RWQCB RPM were responsible for overseeing and monitoring the progress of the TCRA design and implementation.
- **AECOM.** AECOM was authorized by NAVFAC SW to prepare the TCRA Work Plan (AECOM 2010a) and implement the field activities.
- **Marine Corps Systems Command (MARCORSYSCOM).** MARCORSYSCOM was responsible for reviewing and coordinating approval of the ESS prepared for the TCRA (DON 2009) by the Department of Defense Explosives Safety Board (DDESB). The ESS summarized the explosives safety aspects of the TCRA activities. All field activities were conducted in accordance with the ESS, the site-specific Accident Prevention Plan (AECOM 2010b), and the project Work Plan (AECOM 2010a). Copies of the MARCORSYSCOM concurrence and the DDESB approval of the ESS are provided in Appendix A.
- **Engineering/Remediation Resources Group, Inc. (ERRG).** ERRG was contracted by the Navy and provided third-party quality assurance (QA) to evaluate compliance with the approved Work Plan, verify compliance with the approved ESS, and confirm that all work was conducted in a safe manner.
- **TIC and OCFCD.** TIC and OCFCD own the Adjacent Property and provided the Navy with access permits for their property during TCRA implementation.
- **Orange County Sheriff's Department and Orange County Fire Authority.** The Orange County Sheriff's Department and Orange County Fire Authority provided standby assistance during explosive detonation activities to render collected MDEH items safe.

2. Removal Action Activities

The following activities were performed during implementation of the TCRA:

- Pre-mobilization coordination with stakeholders
- Biological reconnaissance, including coordination with USFWS
- Mobilization and kick-off meeting
- Clearance of surface metallic objects by UXO Technicians
- Vegetation trimming
- Establishment of removal action boundary and grid system
- DGM survey using cart-mounted detectors, digital recorders, and global positioning system (GPS) location (Area A and a small portion of Area B)
- Analog geophysical survey using hand-held metal detectors (called mag-and-flag)
- Intrusive Investigation (digging) of all identified anomalies and the removal of any Subsurface MPPEH
- Destruction of Material Documented as an Explosive Hazard (MDEH) with the vast majority of these items consisting of 20-mm projectiles
- Recycling Material Documented as Safe (MDAS), which is any MPPEH items not presenting an explosive hazard
- Demobilization

The TCRA Work Plan (AECOM 2010a) anticipated, and field work confirmed, that some areas would not be accessible using geophysical equipment due to steep terrain and/or dense vegetation. Consistent with the CSM, items initially deposited on the steep slopes within the gullies eventually move to the bottom of the slopes/gullies due to gravitation transport mechanisms. Surveys were conducted at the bottoms of the slopes/gullies below all areas that were not accessible. Areas with steep terrain and/or dense vegetation were visually inspected to the maximum extent practicable.

The TCRA was conducted in two phases. Phase I was conducted from 1 February 2010 through 26 March 2010 and is discussed in Section 2.1 through 2.11. Figure 2-1 presents an overview of the TCRA work flow process for Phase I. Phase II was conducted from 18 May 2010 through 11 June 2010, and is described in Section 2.13 through 2.15. Health and safety and quality control aspects of the project are discussed in Sections 2.12 and 2.13, respectively.

2.1 Pre-Mobilization Coordination and Biological Reconnaissance

In preparation for the TCRA field activities, the following activities were conducted

- **Coordination with Stakeholders.** Prior to field activities, all stakeholders were informed of the project. Entry permits were granted by both landowners (TIC and OCFCD), and the Final Work Plan (AECOM 2010) and Action Memorandum (DON 2010a) were approved by the USEPA, the DTSC, and the RWQCB. A pre-kickoff meeting was held between DON, the Orange County Sheriff's Department, the Irvine Police Department, and the Orange County Fire Authority approximately 1 week prior to commencing field activities in order to ensure smooth coordination during demolition activities.
- **Site Security and Establishment of Explosive Storage Magazines.** On 28 January 2010, the Project Engineer verified that the security fence at the former EOD Range was intact for

its entire perimeter and placed combination locks, with a unique combination only known to essential personnel, on all gates. Three explosive storage magazines were mobilized to the site on 9 February 2010 and placed near the center of IRP Site 1, in accordance with the project Work Plan (AECOM 2010a) and the ESS (DON 2009). One magazine was to be used for storage of the explosives, a second magazine was to be used to store the detonators, and the third was to be used to store all MDEH items collected prior to final disposition (explosive detonation of all MDEH items). The three magazines were properly grounded and the grounding was tested by a certified electrician on 11 February 2010. All grass was mowed for a distance of 50 feet around the magazines for fire safety. "Explosives" signs were placed at a distance of 50 feet from the magazines. Commercial explosives and detonators were mobilized to the site and placed in their respective storage magazines on 23 February 2010.

- **Coordination with USFWS and Biological Reconnaissance.** The Navy coordinated with USFWS to ensure that the biological reconnaissance planned for the site would satisfy the substantive requirements of the Migratory Bird Treaty Act (MBTA) and other requirements. Prior to mobilization of TCRA crews, biological reconnaissance was conducted by a qualified biologist to search for active bird nests. This reconnaissance was conducted on 25 January 2010 and on 28 January 2010. A final reconnaissance was conducted after conclusion of the kick-off meeting on 1 February 2010. No active bird nests were identified during any of the reconnaissance visits. The biologist also conducted site-specific training with TCRA crews and vegetation trimming crews on bird nest identification and impact minimization, and on 12 February 2010 conducted an evaluation of the suitability of the Adjacent Property to support nesting birds after vegetation trimming had been conducted. An email summary of the biological surveys, as well as email correspondence with USFWS regarding natural resources protection at IRP Site 1, Adjacent Property, is included in Appendix B.
- **Evaluation of Biological Hazards.** An evaluation of biological hazards, including poison oak, ticks, and rattlesnakes, was conducted during biological reconnaissance visits. Poison oak was identified during the reconnaissance visits, and although rattlesnakes and ticks were not identified during the visits, they had been identified during previous field work at the site and thus were assumed to be present during TCRA activities.
- **Public Notice for Final Action Memorandum.** A public notice publicizing the completion and availability of the Final Action Memorandum for the TCRA (DON 2010a) was published in the Orange County Register and the Los Angeles Times on March 24, 2010. The public notices are included in Appendix C.

2.2 MOBILIZATION AND KICK-OFF MEETING, PHASE I TCRA

All equipment and personnel were mobilized to the site for Phase I of the TCRA on 1 February 2010. A kick-off meeting was held between all stakeholders, including representatives from the Navy, AECOM, the Navy's third-party QA contractor ERRG, DTSC, and the County of Orange to ensure effective communication between the various entities in the project. Site-specific training was also conducted to ensure that all on-site personnel fully understood the operation procedures and methods to be used on-site.

2.3 VEGETATION TRIMMING

Vegetation trimming was required in Area A and portions of Area B to ensure effective operation of digital and analog geophysical equipment. The vegetation trimming was conducted from 2 February 2010 through 17 February 2010, and was broken up into two activities: manual trimming conducted by two subcontractor personnel with chainsaws and weed-eater type equipment, and mechanized

trimming conducted by an equipment operator using a Bobcat (mechanized equipment) with a connected mower attachment. As required by the ESS (DON 2009), all exposed window surfaces on the Bobcat were properly shielded with a minimum of 1.13-inch Plexiglas to prevent penetration by the munition with the greatest fragmentation distance (MGFD).

UXO Technicians provided escort and anomaly avoidance for each activity. The UXO Technicians conducted a detector-aided visual sweep of the area in front of the trimming crew, and identified, characterized, documented, and collected any surface metallic debris for later disposition. The manual trimming crew generated vegetation piles that were mulched with a grinding attachment and left in-place. Vegetation was trimmed to an approximate height of 8 inches above ground surface in preparation for DGM and analog geophysical surveys in Areas A and B. As anticipated in the TCRA Work Plan, several areas were not accessible by mechanized equipment or manual trimming crews due to terrain and thus were not trimmed (see Figure 2-2).

2.4 Survey of Removal Action Boundaries and Grid System

Between 2 February 2010 and 8 February 2010, a California-licensed land surveyor installed boundary stakes and a 200 by 200-foot grid system throughout the 43-acre TCRA area. Wood lath with unique numbering marked the investigation boundaries and grid corners, and a drawing of the lath locations was generated and printed for field and office use. The survey crew was accompanied by a UXO Technician who conducted anomaly avoidance during survey activities, and utilized a analog hand-held metal detector to ensure the safety of the survey crew during installation of the wood lath.

2.5 Digital Geophysical Mapping Survey Using EM-61 MK2

Digital geophysical surveys were conducted from 5 February 2010 through 18 March 2010. Due to steep terrain within portions of Area A, DGM was not possible in some areas initially planned for cart-mounted digital geophysical survey. In those areas, analog geophysical survey was conducted to the maximum extent practicable.

During the TCRA activities, several deficiencies related to the geophysical survey activities were noted. An NCR was initiated to determine the root causes of the deficiencies and potential corrective actions. Sections 2.13.2 through 2.13.5 provide details of the non-conformances. Details of the DGM activities are presented in Appendix D.

2.5.1 Test Bed Installation

An instrument verification strip (IVS) was installed in accordance with the Naval Research Laboratory's Geophysical System Verification (GSV) to test and demonstrate the operational performance of the EM-61 MK2 system. A baseline survey was conducted to characterize the background of the chosen IVS location. An area approximately 150 by 50 feet was mapped. Prior to the baseline survey, TCRA crews conducted an analog detector-aided visual sweep and flagged any identified anomalies. A total of eight unknown anomalies were found along the IVS Lines.

After the background had been mapped and the data downloaded and inspected in the field, two each of 2-inch inside diameter (ID) x 12 inch long, 1-inch ID x 6-inch long, and five ½-inch ID x 4-inch long welded steel pipe nipples were buried at depths between 0 and 24 inches bgs. Each pipe nipple was placed horizontally with the long axis parallel to the direction of the DGM survey transects.

Multiple transects were laid out for the IVS. Line 1 passed directly over the targets. Line 2 was offset 0.5 meters; Line 3 was offset 0.5 meter from Line 2, and Line 4 was offset four meters from

Line 3. This arrangement provides for testing the optimal horizontal orientation of the cylindrical targets, followed by the least favorable (Line 2 where the long axis of the pipe nipples is perpendicular to the energizing signal from the EM-61 MK2). Line 3 demonstrates further fall off of signal with distance and Line 4 provides a noise/background characterization transect.

The responses to the targets demonstrated the ability of the EM-61 MK2 to resolve locations that might contain munitions-related items. The data also show that each of the buried target cylinders was detected at each burial depth.

2.5.2 Data Acquisition

Prior to geophysical data collection, a real-time kinematic (RTK) survey GPS base station was established on the site.

The EM-61 MK2 had a number of quality control tests conducted before any data acquisition occurred. These quality control tests consisted of:

- A Cable Shake Test
- A Personnel Test
- A Standardization Test
- A Latency Test
- A Precision Point Test

One personnel test was completed during each day. The Standardization, Cable Shake, and Latency tests were completed at every location.

After all quality control tests were completed, the Allegro data collection unit was checked to ensure GPS data was being transmitted to the unit. The collection of RTK GPS data were checked periodically throughout the geophysical survey to ensure all data were properly georeferenced.

2.5.3 Data Processing

Data processing consisted of four main components: field editing, preprocessing, post-processing, and data presentation.

Field editing of raw digital geophysical data included an initial review to check for proper file identification, line number, and transect direction.

The standard preprocessing consisted of navigational determination of comprehensive coverage to identify any data gaps that would result in recollection of transects. The standard preprocessing also checked noise levels to ensure they were within acceptable limits, and an identification of anomalous data spikes or dropouts that may have been associated with cultural features. For cultural feature anomalies, the field notes were used to help discriminate these anomaly locations.

Data processing was limited to the least manipulation of the data needed to identify those anomalies which were targets of interest for intrusive investigation. Processing steps were identical for all datasets obtained during the DGM transect surveys. As the geophysical voltage response and GPS positioning data were recorded concurrently in one binary data file (*filename.R61*), only one file per dataset was required. Data were downloaded from the Allegro data collection unit by transferring the compact flash card upon which the field data were recorded during the survey from the logger to a laptop computer.

A working copy of each binary file was opened using the Geonics, Ltd., EM-61 MK2 software and converted to an ASCII format (*filename.M61*). These data were reviewed in profile using the EM-61 MK2 software to ensure data capture and conversion coherence. The *filename.M61* files collected for the DGM survey were then converted and processed using the Oasis *montaj* software platform to perform lag correction and demedian filtering. The data were then uploaded into ArcGIS to convert coordinates to the California State Plane coordinate system.

The data were then exported to Microsoft Excel where potential anomalies were identified, and duplicate anomaly locations and those with poor signal-to-noise ratio or decay progression were culled. The data were then gridded using Golden Software SURFER for visual presentation and inspection.

2.5.4 Anomaly Dig List

A Microsoft Excel format tabulation of the anomalies identified in the geophysical data (the dig list) was generated and provided to the TCRA teams for relocation using GPS and subsequent intrusive investigation. The dig list included anomaly number, easting and northing (in State Plane coordinates), and anomaly amplitude. Figure 2-2 presents DGM-identified anomaly locations. During the TCRA activities, a complete list of anomalies identified for intrusive investigation was not provided to the UXO dig teams. As a result, an NCR was initiated to determine the root cause of the deficiency and potential corrective action. Sections 2.13.2 through 2.13.5 provide details of the non-conformance.

2.6 ANALOG GEOPHYSICAL SURVEYS USING HAND-HELD METAL DETECTORS

In order to identify and subsequently remove anomalies on steeper portions of Area A, as well as Areas B and C, an analog geophysical survey using hand-held metal detectors (also known as mag-and-flag) was conducted between 9 February 2010 and 18 March 2010. The primary analog hand-held metal detector that was employed was the White's Pulse Induction SurfMaster all-metals detector. This detector is capable of detecting all metals and is particularly useful in aiding surface clearance and locating large masses of mixed metals at moderate depths (up to several feet). It has been previously utilized to identify 20-mm projectiles at depths of up to 12 inches bgs at IRP Site 1. The other analog hand-held metal detector that was used is the Schonstedt GA-52cx, which can only identify ferrous (iron-bearing) anomalies. This detector was used to verify complete coverage by the all-metals detector, and was used as the primary detector in areas where vegetation was too dense to safely and effectively use the all-metals detector, in accordance with the project Work Plan. Areas that were deemed too steep to safely or effectively utilize any analog hand-held detectors were visually inspected to the maximum extent practicable and any metallic items observed were subsequently identified and removed, in accordance with Section 2.7 below.

The instruments were operated in accordance with the manufacturer's operating instructions and the AECOM Standard Operating Procedure (SOP) for real-time geophysical mapping. Each day, prior to investigation, a geophysical equipment verification test was conducted to verify the functionality, performance capabilities, and limitations of the equipment. This equipment test consisted of holding each analog detector over a known seeded location to verify the response. The seeds were ½-inch diameter by 3-inch-long steel pipe nipples, which were used to simulate the 20-mm projectile. All instruments used passed the equipment verification tests each day.

Site personnel were divided into two 5-person teams (one UXO Technician III as team leader and four UXO Technician IIs) to conduct the analog geophysical survey. Within each grid, 5-foot-wide sweep lanes were established using roping. The UXO Technicians traversed the length of the lanes using the White's Surfmaster all-metals detector, identifying, classifying, documenting, and collecting any surface metallic anomalies. Subsurface anomaly locations were flagged with

polyvinyl chloride (PVC) pin flags for subsequent intrusive investigation. A second traverse of the lanes was then made with the Schonstedt instrument to verify complete coverage by the all-metals detector and any metallic anomalies not identified in the first pass were flagged for intrusive investigation using PVC pin flags for subsequent intrusive investigation.

2.7 INTRUSIVE INVESTIGATION OF ANOMALIES

Intrusive investigation and removal of subsurface MEC/MPPEH was conducted by the two 5-person teams from 9 February 2010 through 19 March 2010. For DGM anomalies, a GPS was used to reacquire the interpreted position of the anomaly and then a PVC pin flag was placed at the interpreted anomaly location. The actual location of the anomaly was then located using a White's Surfmaster hand-held all-metals detector. For anomalies that were not able to be located with the metal detector, the EM-61 MK2 was used in real-time mode to attempt to locate the anomaly. Those anomalies that could not be located either by using the hand-held detectors or by the EM-61 MK2 in real-time mode were characterized as "No Finds."

All flagged anomaly locations (DGM-identified and analog hand-held metal detector-identified) were investigated on the day the anomaly was flagged until the source was identified and removed. The analog hand-held metal detector was then used to verify that no additional anomalies were present at the location, and each excavation was then backfilled. All anomaly investigations were conducted by hand with shovels, with investigations proceeding from the side of the anomaly location until the source was visually observed, identified, classified, and collected. After each anomaly was investigated, a description of the anomaly (MDEH/MDAS/Cultural Debris [CD]) was properly documented by the team leader. Locations of items classified as MDEH and MDAS were recorded using GPS. Collected items were transported to IRP Site 1 where they were processed by the Senior UXO Supervisor (SUXOS) and team leaders to confirm their classification, and then properly stored in the Type II explosives storage magazine until final disposition. Any revisions to the MPPEH characterization after the SUXOS and team leader's confirmation were noted on the dig sheet. MDEH items were photographed and placed in an explosives storage magazine. MDAS items were photographed and placed in a lockable storage container. CD items were placed in a second lockable storage container.

2.8 LAND SURVEY OF INVESTIGATED AREAS

Prior to the conclusion of investigation activities, a land survey was performed to document the limits of areas addressed by the TCRA. This survey included the limits of areas not evaluated due to either steep terrain (portions of Areas A and B) or dense vegetation (portions of Area C), as well as an additional step-out area adjacent to Area C. This step-out area was not originally planned for investigation, but, consistent with the Work Plan (AECOM 2010a), was added to ensure a 100-foot buffer free of MPPEH (see Figure 2-2) were surveyed. No MPPEH items were identified within the additional area surveyed.

2.9 MDEH RENDER SAFE OPERATIONS

A total of 114 safe-to-move MDEH items were collected during Phase I (see Figure 3-1 for locations). Two of those items were collected from Area C, three were collected from Area B, and 109 were collected from Area A. No unsafe-to-move MDEH items were identified during TCRA activities.

Two consolidation detonation shots, under the direction of a California-licensed blaster, and using commercial donor explosives, were conducted to render safe the 114 MDEH items on 23 March 2010. Each shot was conducted in a Buried Explosion Module (BEM) located in the central area of IRP Site 1, in the former Northern EOD Training Range (Figure 1-6). The use of a BEM was

requested through an ESS Amendment (DON 2010b) and approved by the MARCORSYSCOM on behalf of the DDESB on 10 March 2010 (DDESB 2010, found in Appendix A). Prior to initiation of demolition operations, notifications were made to the Navy RPM and the FEAD representative. AECOM then coordinated with the Orange County Sheriff's Department and the Irvine Police Department. The Orange County Sheriff's Department notified the Orange County Fire Authority. The signed notification form is provided in Appendix E. For the demolition shots, all nonessential field personnel were evacuated outside the IRP Site 1 fence line, which was greater than the required minimum separation distance (MSD) of 200 feet.

A total of 114 MDEH items were placed in 3 demolition shot holes excavated with a backhoe to a depth of 4 feet bgs. After preparation of the demolition shot, approximately 150 sandbags were placed on top, as well as soil overburden. Detonation of the first shot was conducted at 10 am on 23 March 2010. After the UXO Safety Officer (UXOSO) called the shot all clear, the demolition team reexcavated the detonation locations and used Schonstedt analog hand-held metal detectors to locate and collect any fragments for recycling and to verify that all 114 items were properly destroyed such that all internal cavities could be inspected and the items no longer resembled munitions. All donor explosives were expended, but three fuze pieces were identified as requiring additional detonation to ensure proper demilitarization. All properly demilitarized fragments were placed in the lockable MDAS storage container for subsequent recycling.

The second detonation shot hole was excavated with a backhoe to a depth of 4 feet bgs and the 3 fuze pieces requiring additional detonation were placed, along with the donor explosives, followed by soil overburden. The second explosive shot was detonated at 3 pm on 23 March 2010. After the UXOSO called the shot all clear, the demolition team reexcavated the detonation location and used Schonstedt analog hand-held metal detectors to locate and collect any fragments for recycling. All donor explosives were expended and no fragments were found. The demolition team then used a backhoe to evaluate the detonation shot locations and returned the site to the pre-excavation state.

2.10 MDAS AND CULTURAL DEBRIS DISPOSITION

A total of 211 MDAS items and numerous CD items were collected during Phase I. All MDAS items were 100 percent inspected in accordance with Naval Sea Systems Command (NAVSEA) OP5, Section 13-15.7, prior to final certification and verification as MDAS. The SUXOS certified, and the UXO Quality Control (QC) Specialist (UXOQCS) verified that the MDAS items were free of explosive hazards (MDAS); DDESB form 1348-1A was used to document this. A chain-of-custody form was completed and the lockable bin containing certified and verified MDAS items was transferred to the recycling company for transport to their facility for final shredding and recycling; all CD items were also transferred to the recycling company. A Certificate of Destruction (found in Appendix E) was provided by the recycling company on 1 April 2010, which states that 368 pounds of scrap metal were demilitarized in accordance with guidelines in Department of Defense (DoD) 4160.21-M-1.

2.11 DEMOBILIZATION

Demobilization of all personnel and equipment for Phase I was conducted on 26 March 2010. All equipment and trash were removed and the site was returned to the pre-TCRA state with the exception of the explosives storage magazines, which were kept on-site because two MDEH items (20-mm projectiles) had been collected on 25 March 2010 from investigation of 14 DGM anomalies which were provided to the dig teams after most of the personnel had demobilized (see Section 2.11). Those two MDEH items were stored within the MDEH magazine. The property owners (TIC and OCFCD) were notified that all planned activities were completed; however, additional work would likely be conducted in the near future.

2.12 HEALTH AND SAFETY

The Site Safety Officer (SSO) conducted daily tailgate safety briefings in conjunction with the UXOSO and the SUXOS. Topics discussed included the scope of work for each day, activity hazard analyses for the work to be conducted, SOPs, and other topics as required.

During the first week of vegetation trimming, the vegetation trimming crew encountered a moderate amount of poison oak. At subsequent tailgate safety briefings, poison oak identification and avoidance measures were discussed. However, three UXO Technicians contracted dermatitis as a result of contact with poison oak. Two personnel reported the dermatitis to the SSO on 26 February 2010, and the third reported the dermatitis on 1 March 2010. All three cases were properly documented and monitored by the SSO and AECOM's designated corporate medical services provider, Work Care. One case required prescription medication and thus became an Occupational Safety and Health Administration (OSHA) Recordable incident. No lost time was incurred, although the employee was placed on a modified work routine.

A safety stand-down was conducted on 1 March and 2 March 2010 until additional personal protective equipment (PPE) could be procured and additional procedures, including decontamination, could be put in place. All three dermatitis cases eventually cleared up and the three employees were cleared for full duty. No other safety incidents occurred during Phase I.

2.13 QUALITY CONTROL

Inspection and surveillance of all work areas was performed during implementation of the TCRA to monitor field activities identified as Definable Features of Work (DFW).

2.13.1 Three Phases of Control

Consistent with the project Work Plan (AECOM 2010a), a three-phase control process was implemented for specific DFW's to ensure that work was compliant with contract requirements. The three phases of control include the preparatory phase, initial phase, and follow-up phase. A preparatory phase inspection was performed prior to beginning each DFW. The purpose of this inspection was to review applicable specifications and verify that the necessary resources, conditions, and controls were in place and compliant before the start of work activities.

An initial phase inspection was performed at the start of each DFW. The initial phase inspection verified that the applicable sections of the Work Plan and project procedures were being implemented and the task objectives were achieved. Follow-up phase inspections were performed as needed for definable features that were conducted over multiple work days. The purpose of each follow-up inspection was to ensure a level of continuous compliance and workmanship. The UXOQCS was responsible for on-site monitoring of the practices and operations taking place and verifying continued compliance with the specifications and requirements of the approved Work Plan procedures.

The DFWs for this TCRA included:

- Mobilization (Preparatory Phase and Initial Phase only)
- Site Preparation (Preparatory Phase and Initial Phase only)
- Vegetation Trimming
- Land Survey
- Surface Clearance (Preparatory Phase and Initial Phase only)

- Digital and Analog Geophysical Survey
- Intrusive Investigation
- MPPEH Processing
- MDAS and CD Disposition
- MDEH Disposition
- Demobilization (Preparatory Phase and Initial Phase only)

All preparatory phase, initial phase, and follow-up phase inspection forms are presented in Appendix F. A discussion of significant QC findings is presented in the following sections.

2.13.2 DGM Survey Quality Control

DGM field data was reviewed by the DGM Manager to ensure complete coverage, measurement precision, representativeness, and geophysical reasonableness of the survey results. Field logbooks noted date and time of survey, area covered, and the location and description of noise sources that may affect interpretations. These were reviewed daily by the DGM Manager.

The QC results of the geophysical survey were tracked on a master spreadsheet that tabulated survey area identification, coordinates, and date surveyed. At the conclusion of the project, it was determined that the Project Geophysicist did not complete a thorough review of the final processing spreadsheets in comparison to the dig lists, nor was a peer review of this effort completed. After demobilization, an independent geophysicist reviewed the geophysical survey data collection and processing, and anomaly delivery processes, and concluded that there were additional anomalies that should have been included in the dig lists. It was subsequently determined that 95 additional anomalies should have been delivered to the investigation teams. The incomplete generation of DGM-identified dig lists was considered a non-conformance and thus an NCR was initiated to determine the root cause and potential corrective action (see Section 2.13.5).

2.13.3 QC Blind Seeds

To assess the effectiveness of assessment techniques and completeness of aerial coverage by DGM and analog hand-held metal detector survey teams, QC blind seeds were placed throughout the site. Placement was independent of investigation teams and was conducted under the supervision of the UXOQCS. The QC blind seeds selected were ½-inch diameter by 3-inch-long steel pipe nipples simulating the 20-mm projectile. A total of 24 QC blind seeds were placed in Area A on 11 February, 2010. Five QC blind seeds were placed in Area B on February 19, 2010, and five QC blind seeds were placed in Area C on 11 February 2010. Recovery of the blind seeds was to confirm that these items were appropriately reacquired and that the team cleared the anomaly and properly documented their findings. Work Plan Section 4.2.3 (AECOM 2010a) required recovery of 100 percent of the blind seeds.

Upon completion of field investigation activities, the UXOQCS determined that four QC blind seeds had not been collected. The UXOQCS mobilized to the grids in question to determine whether the four QC blind seeds had been missed by the investigation teams. Two QC blind seeds, one in the DGM-surveyed area and the other in the mag-and-flag surveyed area, were not located and deemed to have been collected by the investigation teams but not documented. Two QC blind seeds were collected by UXOQCS in the DGM-surveyed area on 19 March 2010. This was considered a non-conformance from the approved Work Plan and thus included in the NCR (see Section 2.13.5) where the root cause and potential corrective actions were determined.

2.13.4 Grid Close-Out

Upon completion of intrusive investigation activities within individual grids, including completion of subsurface investigation and collection of any QC blind seeds placed in the grid, the UXOQCS conducted a QC check of 25 percent of the area within each grid and if no metallic anomalies were identified during the QC check, the UXOQCS documented in his logbook that the grid was closed out. This process was conducted both for grids surveyed using DGM and for grids surveyed using analog hand-held metal detectors.

The first grids were closed out on 23 February 2010 and the last grids were closed out on 24 March 2010. Due to steep terrain within portions of Area A, DGM was not possible in some areas initially planned; additionally, DGM was conducted in some flatter portions of Area B (along the interface with Area A) that were initially planned for mag-and-flag survey. Because the DGM and mag-and-flag survey area boundaries changed over the course of the investigation, an evaluation of the completed QC logbooks revealed that several grids investigated by mag-and-flag and closed out by the UXOQCS subsequently underwent DGM survey and investigation of DGM anomalies. Three grids containing unrecovered QC blind seeds were incorrectly closed-out. This was considered a non-conformance from the approved work plan and thus included in the NCR (see Section 2.13.5) where the root cause and potential corrective actions were determined.

2.13.5 Non-Conformances

Preparation of an NCR was initiated on 22 March 2010 and a copy of the NCR was provided to the BCT on 17 April 2010 (see Appendix G). Concurrence was provided by the BCT on the NCR on 27 April 2010, and is provided in Appendix G. The NCR summarized three non-conformances with the approved Work Plan (AECOM 2010a) as follows:

2.13.5.1 Incomplete Anomaly Dig Lists

A complete list of anomalies identified for intrusive investigation was not provided to the UXO dig teams. Incomplete anomaly dig lists resulted from systematic processing errors on the part of the Project Geophysicist. Specifically, the Project Geophysicist did not complete a thorough review of the final processing spreadsheets in comparison to the dig lists, nor was a peer review of this effort completed. After demobilization, 95 additional anomalies were identified and added to the dig list following an independent review of the DGM anomaly selection.

The corrective action included the following:

- Require/assign a QC Geophysicist to conduct an independent review of the anomaly picking and dig list preparation process.

2.13.5.2 Management of Work Flow and Close-Out in the DGM Grids.

An evaluation of the field QC logbooks and the grid close-out records revealed that there was a lack of detailed procedures for blind seed tracking, anomaly reacquisition and investigation, and grid close-out in the DGM grids. Following the vegetation clearance, it was determined that the areas originally planned for DGM mapping had to be reduced due to rugged terrain and operation safety issues. Changing the DGM area boundaries as the work progressed caused confusion, and in some instances, resulted in overlapping of DGM and mag-and-flag investigation areas.

The corrective action included the following:

- Prepare detailed field operation procedures that lay out step-by-step processes for grid clearance and QC clearance.

- Prepare a Grid Close-Out Checklist/Log for field use.
- Provide a specific geophysical QC process and a separate individual to verify the DGM data evaluation and anomaly selection process.

2.13.5.3 NON-RECOVERY OF BLIND SEEDS IN DGM GRIDS AND UNDOCUMENTED BLIND SEEDS RECOVERY.

Two of 10 blind seeds, A-5 and A-10, placed in the DGM area, were not recovered following DGM mapping. A-5 was identified as an anomaly but erroneously left off the dig list. A-10 was detected with an anomalous signal and thus was not identified on the dig list. The UXOQCS recovered these blind seeds at the end of field work. Two blind seeds (A-6 in the DGM area and A-8 in the mag-and-flag area) were removed by the dig teams but were not documented in dig result sheets.

- Prepare a Blind Seed SOP including a Tracking Log/Form to document seed placement location, depth, orientation, time, outcome of the investigation, and any other relevant information.
- The UXOQCS and geophysical team shall closely coordinate and identify responsibilities.
- The UXOQCS shall follow-up on real-time performance analysis of seed recovery as the investigation is completed in DGM and mag-and-flag areas.

2.14 QUALITY ASSURANCE

QA was conducted by ERRG personnel. Results of QA activities are presented in Appendix H

2.15 TCRA PHASE II

A remobilization (Phase II) was required to implement the corrective actions stipulated in the NCR. The regulatory agencies involved with the project (the U.S. EPA, the DTSC, and the RWQCB), as well as MARCORSYSCOM, were provided and concurred with the Final NCR. Figure 2-3 presents an overview of the TCRA work flow process for Phase II. The following subsections summarize the Phase II field activities, which began on 18 May 2010 and were completed on 11 June 2010.

2.15.1 Remobilization Purpose and Scope

Phase II was conducted to improve the confidence in the overall performance, provide additional safety margins, and meet the objective of the TCRA. Field personnel were remobilized to the site on 18 May 2010 to resurvey the 12-acre area that was surveyed using DGM during Phase I. The scope of the TCRA Phase II activities included two main tasks:

- Conduct intrusive investigation of the 95 DGM anomalies that were identified during the Phase I DGM surveys, but not previously included in the dig lists for anomaly investigation.
- Resurvey all DGM-surveyed grids (approximately 12 acres) using analog hand-held metal detectors (i.e., mag-and-flag).

The following activities were performed during Phase II:

- Pre-mobilization coordination and biological reconnaissance
- Mobilization and kick-off meeting
- Reestablishment of investigation area boundary and grid system
- Vegetation trimming

- Intrusive investigation (digging) and removal of 95 DGM anomalies
- Analog geophysical survey using analog hand-held metal detectors on 12 acres of previous DGM surveyed areas within Area A followed by intrusive investigation of identified anomalies
- Destruction of MDEH items with the vast majority of these items consisting of 20-mm projectiles
- Recycling MDAS and CD items
- Demobilization

2.15.2 Pre-Mobilization Coordination and Biological Reconnaissance

Pre-mobilization coordination and biological reconnaissance activities were conducted consistent with Phase I. The biological reconnaissance was conducted on 11 May 2010. Potential nesting activity by a male and a female Common Yellowthroat was observed in one of the drainages that broadens out towards the bottom of the Adjacent Property slope. The area was flagged so that vegetation in the immediate vicinity of the potential nesting activity would not be disturbed. No other nesting activity was identified on the Adjacent Property during the reconnaissance visit. An email report summarizing the findings is included in Appendix B.

A nest was identified on the IRP Site 1 property inside the security lock mechanism for one of the explosives storage magazines, which would likely have prevented placing any explosives within the magazine if the nest were not relocated. A house finch was seen in the nest, incubating several eggs. With the concurrence of the USFWS (see Appendix B), a small box with one open side was constructed approximately the same size as the space the nest occupied in the magazine. On 18 May 2010, the box was placed on top of the locking mechanism and the nest was relocated into the box, allowing the use of the magazine door. The next day (19 May 2010), the nest was found on the ground near the explosives storage magazine, with egg shell pieces strewn about. No birds were identified nearby.

2.15.3 Mobilization and Kick-Off Meeting

All equipment and personnel were re-mobilized to the site on 18 May 2010. A kick-off meeting was held between AECOM, Navy, and the Navy's third-party QA contractor, ERRG, to ensure effective communication between the various entities in the project. Site-specific training was also conducted to ensure that all on-site personnel fully understood the methods and procedures to be used on-site. The newly-developed Blind Seed Placement SOP, Grid Close-Out Form, and project Work Flow (Appendix I) were reviewed by the SUXOS, the UXOQCS, the QA Manager, the Project Manager (PM), and the Project Engineer.

2.15.4 Reestablishment of Investigation Area Boundary and Grid System

During Phase II, the field geophysicist used a GPS unit to mark the investigation area boundary and grid system using location coordinates obtained from the land surveyor and the project GIS. The field geophysicist was accompanied by a UXO Technician who used an analog White's Surfmaster hand-held all-metals detector to conduct anomaly avoidance and ensure the safety of the field geophysicist during installation of wood lath marking the investigation boundary.

2.15.5 Vegetation Trimming

Between Phase I and Phase II, vegetation growth occurred on approximately 2 acres that may have hindered the analog geophysical surveys and subsequent intrusive investigations. As a result, and

upon approval from USFWS (see Appendix B) , vegetation trimming was conducted using a Bobcat (mechanized equipment) with a connected mower attachment on 27 and 28 May 2010.

2.15.6 Intrusive Investigation and Removal of 95 DGM Anomalies

The 95 anomalies noted in the NCR were intrusively investigated during Phase II after the selection of these anomalies had been reviewed and concurred on by an independent California-Registered Geophysicist. Consistent with Phase I activities, a GPS unit was used to relocate the interpreted position of the anomaly and then a PVC pin flag was placed at the interpreted anomaly location. The anomaly was then located using an analog White's Surfmaster hand-held all-metals detector. For anomalies that could not be located with the metal detector, the EM-61 MK2 was used in real-time mode to attempt to locate the anomaly. Those anomalies that could not be located using the EM-61 MK2 in real-time mode were characterized as "No Finds."

All flagged anomaly locations were investigated until the source was identified and removed. The analog hand-held metal detector was then used to verify that no additional anomalies were present at the location, and each excavation was then backfilled. After each anomaly was investigated, a description of the anomaly (MDEH/MDAS/CD) was properly documented. Consistent with the project Work Plan, objects classified as CD were collected for subsequent recycling. Collected items were transported to IRP Site 1 where they were properly stored in the Type II explosives storage magazine until final disposition. MDEH items were photographed and placed in an explosives storage magazine. MDAS items were photographed and placed in a lockable storage container. CD items were placed in a second lockable storage container. A total of 16 MDEH items (all 20-mm projectiles) were collected within Area A during this activity.

2.15.7 Analog Geophysical Survey Using Hand-Held Metal Detectors on 12 Acres of Previous DGM Surveyed Areas Followed by Intrusive Investigation of Identified Anomalies

An analog geophysical survey using hand-held metal detectors (mag-and-flag) was conducted on approximately 12 acres of the previous DGM-surveyed area. The analog geophysical survey and intrusive investigation were conducted consistent with Phase I (see Sections 2.5 and 2.6) with one exception, a 3-foot-wide versus a 5-foot-wide sweep/evaluation lane width was used. This 3-foot wide lane width was used to ensure additional overlap and give more confidence that munitions items were not missed. A total of 31 MDEH items (all 20-mm projectiles) were collected within Area A during this activity.

2.15.8 MDEH Render Safe Operations

A total of 47 safe-to-move MDEH items and no unsafe-to-move MDEH items were collected during Phase II (see Figure 3-1 for locations). Two consolidation detonation shots, using commercial donor explosives, were conducted for the MDEH items on 9 June 2010. Consistent with Phase I detonation activities, each shot was conducted in a BEM located in the central area of IRP Site 1, in the former Northern EOD Training Range. Notification and coordination with involved agencies was conducted consistent with Phase I activities. For the demolition shots, all nonessential field personnel were evacuated outside the IRP Site 1 fenceline, which was greater than the MSD of 200 feet.

The 47 MDEH items (all 20-mm projectiles) were placed in one shot hole excavated with the use of a backhoe to a depth of 4 feet bgs. After preparing the demolition shot, soil overburden was placed on top. Detonation of the first shot was conducted at 10 am on 9 June 2010. After the UXOSO called the shot all clear, the demolition team reexcavated the detonation location and used Schonstedt analog hand-held metal detectors to locate and collect any fragments for recycling and verify that all 47 items were properly destroyed such that all internal cavities could be inspected and the items no

longer resembled munitions. The Schonstedt detector was used because all 47 MDEH items were made of ferrous metal. All donor explosives were expended, and no fragments were located.

The second detonation shot was conducted only to expend the remaining donor explosives that had been retained in the event that any items were not fully demilitarized in the first detonation shot. The detonation shot hole was excavated with a backhoe to a depth of 4 feet bgs and the donor explosives were placed in the shot hole, followed by soil overburden. The second explosive shot was detonated at 11 am on 9 June 2010. After the UXOSO called the shot all clear, the demolition team used a backhoe to evaluate the detonation shot locations and return the site to the pre-excavation state.

2.15.9 MDAS and Cultural Debris Disposition

A total of 141 MDAS items and numerous CD items were collected during Phase II. MDAS disposition was handled consistent with activities conducted during Phase I. All MDAS was 100 percent inspected in accordance with NAVSEA OP5, Section 13-15.7, prior to final certification and verification as MDAS. The SUXOS certified, and the UXOQCS verified that all MDAS items were free of explosive hazards; DDESB form 1348-1A was used to document this. A chain-of-custody form was completed and the lockable bin containing certified and verified MDAS items were transferred to the recycling company for transport to their facility for final shredding and recycling; all CD items were also transferred to the recycling company. A Certificate of Destruction (found in Appendix E) was provided by the recycling company on 18 June 2010, which states that 26 pounds of scrap metal were demilitarized in accordance with guidelines in DoD 4160.21-M-1.

2.15.10 Demobilization

Demobilization of all personnel and equipment was conducted on 11 June 2010. All equipment and trash were removed and the site was returned to the pre-construction state.

2.15.11 Health and Safety

No safety incidents occurred during Phase II.

2.15.12 Quality Control

Inspection and surveillance of all work areas were performed during the TCRA to monitor field activities identified as DFWs.

2.15.12.1 Three Phases of Control

A three-phase control process was implemented for specific DFW's to ensure that work was compliant with contract requirements. The DFWs for Phase I and II activities were the same with two exceptions (Quality Control Blind Seed Deployment and Management, and Grid Close-Out). Results of all preparatory phase, initial phase, and follow-up phase inspections are presented in Appendix F.

2.15.12.2 QC Blind Seeds

A total of 30 QC blind seeds were placed throughout the 12-acre mag-and-flag area in accordance with the newly-developed Blind Seed Placement SOP and project Work Flow (see Appendix I). A modification from Phase I was the completion of a Blind Seed Tracking Log (Appendix F) which documented seed placement location, depth, orientation, time, and outcome of the investigation. All QC blind seeds were collected and properly documented during Phase II (May-June 2010).

A total of 7 QA blind seeds were also placed by the Navy's third-party QA contactor, ERRG, throughout the 12-acre investigation area. All QA blind seeds were collected and properly documented during Phase II (May-June 2010). See Appendix H for details of QA activities.

2.15.12.3 GRID CLOSE-OUT

Upon completing activities within individual grids, including completion of subsurface investigation and collection of any QC blind seeds placed in the grid, and in accordance with the project Work Flow (see Appendix I), the UXOQCS conducted a 25 percent QC check within each grid and if no metallic anomalies were identified, the UXOQCS documented that the grid was closed out. A modification from Phase I was the addition of a Grid Close-Out Form (completed forms are provided in Appendix F). After the 25 percent QC check for each grid, the Form was completed and signed by the UXOQCS as well as a representative for the Navy's third-party QA contractor, ERRG. The first grid was closed out on 25 May 2010 and the last grids were closed out on 8 June 2010.

2.15.12.4 NON-CONFORMANCES

There were no NCRs or Quality Deficiency Reports issued during Phase II (May-June 2010). However, the UXOQCS did collect one metallic item, a 20-mm armor-piercing projectile (classified as MDAS), during the 25 percent QC check of Grid 7. As a result, the TCRA team that conducted work in that grid was stopped from continuing on subsequent grids, a root cause analysis was conducted, and the team was sent back to Grid 7 to conduct rework. During the subsequent 25 percent QC check, the UXOQCS did not identify any metallic objects and the Grid Close-Out form for that grid was completed appropriately.

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3. Removal Action Results

This section describes the results and conclusions for the TCRA conducted at IRP Site 1, Adjacent Property. Figure 3-1 presents the locations of all MDEH and MDAS items collected during the TCRA.

3.1 AREA A (EAST OF THE AGUA CHINON RETARDING BASIN)

Within Area A, which is owned by TIC, approximately 11.8 acres were surveyed using DGM techniques and an additional 15.4 acres were surveyed using analog geophysical equipment, followed by the removal of all identified anomalies. During Phase I and Phase II TCRA activities, a total of 156 MDEH items (including 150 20-mm projectiles) and 346 MDAS items were collected between 0 and 18 inches below the ground surface in this area. The DGM anomaly investigation results from Phase I are presented in Table 3-1.

3.2 AREA B (EAST AND NORTH OF THE AGUA CHINON RETARDING BASIN)

Within Area B, which is owned by OCFCD, approximately 5.0 acres were surveyed during Phase I using analog geophysical equipment, and an additional 0.3 acres were surveyed using DGM equipment. A total of 3 MDEH items (including two 20-mm projectiles) and 3 MDAS items were collected between 0 and 6 inches below the ground surface in this area. The DGM anomaly investigation results from Phase I are presented in Table 3-1. The analog geophysical survey results from Phase I are presented on in Tables 3-2 and 3-3, and the analog geophysical survey results from Phase II are presented in Tables 3-4 and 3-5.

3.3 AREA C (WEST OF THE AGUA CHINON RETARDING BASIN)

Within Area C, which is owned by TIC, approximately 3.5 acres were surveyed within Area C during Phase I using analog geophysical equipment. A total of two MDEH items were collected at Area C (including one 20-mm projectile) and three MDAS items were collected and removed. The 3.5 acres included approximately 1.4 acres that consisted of a step-out area that was surveyed because MPPEH items were found within 100 feet of the western boundary of the initial investigation. No additional MPPEH items were found in this step-out area. All items were collected between 0 and 12 inches bgs in this area. The analog geophysical survey results from Phase I are presented in Tables 3-2 and 3-3.

3.4 MDEH, MDAS, AND CD DISPOSITION

Four consolidated detonation shots, using commercial donor explosives, were conducted for the MDEH items on 23 March 2010 and 9 June 2010. Each shot was conducted in a BEM located in the central area of IRP Site 1. A total of 161 MDEH items were placed in shot holes excavated with a backhoe to depths of 4 feet bgs. After the UXOSO gave the “all clear”, the demolition team reexcavated the detonation locations and used Schonstedt analog hand-held metal detectors to locate and collect any fragments for recycling and to verify that all items were properly destroyed such that all internal cavities could be inspected and the items no longer resembled munitions. All properly demilitarized fragments were placed in the lockable MDAS storage container for subsequent recycling.

All MDAS items were 100 percent inspected in accordance with NAVSEA OP5, Section 13-15.7, prior to final certification and verification as MDAS. The SUXOS certified, and the UXOQCS verified that all MDAS items were free of explosive hazards; DDESB form 1348-1A was used to document that the items were free of explosive hazards. A chain-of-custody form was completed and the lockable bin containing certified and verified MDAS items was transferred to the recycling company for transport to their facility for final shredding and recycling. All CD items were also

transferred to the recycling company. Two separate Certificates of Destruction (found in Appendix E) were provided by the recycling company for a total of 394 pounds of MDAS.

3.5 QUALITY CONTROL

During Phase I, three non-conformances were identified and documented in an NCR. During Phase II, all proposed corrective actions for the three non-conformances were conducted in accordance with the NCR.

There were no Non-Conformance Reports or Quality Deficiency Reports issued during Phase II. During the 25 percent QC check of one grid, the UXOQCS removed one metallic item (a 20-mm projectile). The TCRA team conducted a rework of the grid and a subsequent 25 percent QC check of the grid did not identify any metallic objects.

3.6 MEC HAZARD ASSESSMENT

The MEC hazard assessment (MEC HA) methodology for assessing potential explosive hazards to human receptors at munitions response sites (MRSs) (USEPA 2008) was used to evaluate MEC hazards at IRP Site 1, Adjacent Property. The MEC HA was developed to assist project teams in evaluating the potential explosive hazard associated with project sites, given current or reasonably anticipated future conditions, and under various cleanup, land use activities, and land use control alternatives (USEPA 2008). For this project, the MEC HA was conducted to compare pre-removal-action explosive hazards under future land use conditions with post-removal action explosive hazards under future land use conditions. Resulting hazard categories are on a scale of 1 to 4, with 4 correlating to the lowest hazard. Because the future land use of Areas A and B are consistent (open space), Areas A and B have been evaluated together as one MRS. Area C has a different future land use (medium-density residential housing) and thus has been evaluated as a separate MRS.

Results of the MEC HA for the combined Areas A and B indicated a baseline hazard of 525 (hazard category 4) prior to TCRA activities, and a post-TCRA final hazard of 255 (hazard category 4). Results of the MEC HA for Area C indicated a baseline hazard of 675 (hazard category 3) under future land use conditions and prior to TCRA activities, and a post-TCRA final hazard of 435 (hazard category 4). The post-TCRA MEC hazard for all three areas is classified as having the lowest of the four hazard categories. Details of the MEC HA are presented in Appendix J.

4. Conclusions and Recommendations

The objective of the TCRA was to lower the potential explosive hazards associated with the Adjacent Property by evaluating the presence, types, and distribution of munitions and removing them. Figure 3-1 presents all locations of all MDEH and MDAS removed from the site during the TCRA. The following are findings and conclusions regarding the activities conducted during the TCRA:

- The presence and distribution of munitions were evaluated over all portions of Areas A, B, and C.
- All MPPEH items that were identified were removed and subsequently destroyed and recycled.
- A total of 161 MDEH items were recovered at depths ranging from the ground surface to 18 inches below the ground surface. The predominant MDEH item recovered was a 20-mm projectile (95 percent). No large subsurface anomalies, suggesting the use of subsurface detonation or burial pits, were identified.
- In accordance with the Non-Conformance Report (NCR), the 12-acre area that was initially surveyed with DGM equipment was re-surveyed using analog geophysical equipment to increase the confidence level that the objectives of the TCRA had been met.
- All identified MDEH items were classified as safe-to-move, and did not require blow-in-place operations.
- The findings of the TCRA are consistent with the CSM, which indicates that the presence of munitions on the Adjacent Property is due to kick-outs from training activities conducted within the boundaries of the former EOD Training Range.
- The potential explosive safety hazards associated with the Adjacent Property were reduced as a result of this TCRA.

MARCORSYCOM has concurred that the investigation and MDEH recovery techniques used during this TCRA were appropriate and consistent with the current state of practice. This RAR provides a summary of field work activities (including QC and third-party QA) and documents that the work was conducted in accordance with the final TCRA Work Plan (AECOM 2010a) and that the TCRA objectives have been met. The results of this removal action will be evaluated and incorporated into the appropriate IRP Site 1 CERCLA documentation.

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5. References

AECOM Technical Services, Inc. (AECOM). 2010a. *Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station El Toro, California.* February.

_____. 2010b. *Accident Prevention Plan Update, CERCLA Field Activities, Former Marine Corps Air Station El Toro, California.* January.

Bechtel National, Inc. (BNI). 1995. *Final Work Plan Phase II Remedial Investigation/Feasibility Study*, San Diego, CA.

Department of Defense Explosives Safety Board (DDESB). 2010. *Memorandum, Amendment for Time Critical Removal Action Installation Restoration Program Site 1 Explosive Ordnance Training Range, Former Marine Corps Air Station El Toro, California.* March 10.

Department of the Navy (DON). 2007. *NAVSEA OP5, Ammunition and Explosives Safety Ashore, Sixth Change to Seventh Revision.*. Naval Sea Systems Command. July 1.

_____. 2008. *Explosive Safety Submission, Munitions Characterization, Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station El Toro, California.* September.

_____. 2009. *Explosive Safety Submission, Munitions Time-Critical Removal Action, Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station El Toro, California.* November.

_____. 2010a. *Final Action Memorandum, Time-Critical Removal Action, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station El Toro, California.* February.

_____. 2010b. *Memorandum, Request for Amendment to Final Explosive Safety Submission (ESS) to Allow for Use of Engineering Controls at Former Marien Corps Air Station (MCAS) El Toro.* March 3.

Earth Tech, Inc. (Earth Tech). 2001. *Final Site-Specific Environmental Baseline Survey Report, IRP Site 1, Explosive Ordnance Disposal Range, Marine Corps Air Station El Toro, California.* Honolulu. August.

_____. 2006. *Final Phase II Remedial Investigation Report, Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station El Toro, California.* December.

Federal Bureau of Investigation (FBI). 2000. *Letter Report Stating the FBI's Use of the MCAS El Toro EOD Range. Los Angeles, CA.* March.

Jacobs Engineering Group, Inc. (JEG) 1993. *Draft Phase I Remedial Investigation Technical Memorandum.* Irvine, CA.

United States Army Corps of Engineers (USACE). 1998. *Range Identification and Preliminary Range Assessment. Draft. MCAS El Toro.* March.

United States Environmental Protection Agency (EPA). 2008. *Munitions and Explosives of Concern Hazard Assessment Methodology*. EPA 505B08001. Interim. October.

Tables

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Table 2-1. Definable Features of Work and Dates of Quality Control Meetings

Definable Feature of Work	Date of Preparatory Phase QC Meeting	Date of Initial Phase QC Meeting	Date of Follow-up Phase QC Meeting
First Phase of TCRA			
Mobilization	31-Jan-2010	1-Feb-2010	None
Site Preparation	1-Feb-2010	1-Feb-2010	None
Vegetation Trimming	2-Feb-2010	2-Feb-2010	3-Feb-2010 and others
Land Survey	4-Feb-2010	4-Feb-2010	5-Feb-2010 & 8 Feb 2010
Surface Clearance	9-Feb-2010	9-Feb-2010	None
Digital and Analog Geophysical Survey	4-Feb-2010	4-Feb-2010	10-Mar-2010
Intrusive Investigation	5-Feb-2010 & 17-Feb-2010	9-Feb-2010 & 17-Feb-2010	10-Feb-2010 and others
MPPEH Processing	10-Feb-2010	2/110/2010	11-Feb-2010 & 12-Feb-2010
MDAS and CD Disposition	15-Mar-2010	24-Mar-2010	24-Mar-2010
MDEH Disposition	23-Mar-2010	23-Mar-2010	23-Mar-2010
Demobilization	23-Mar-2010	24-Mar-2010	None
Second Phase of TCRA			
Mobilization	17-May-2010	18-May-2010	None
Site Preparation	18-May-2010	19-May-2010	None
Vegetation Trimming	25-May-2010	25-May-2010	2-Jun-2010
Land Survey	19-May-2010	19-May-2010	25-May-2010
Quality Control Blind Seed Deployment and Management	21-May-2010	21-May-2010	26-May-2010
Intrusive Investigation	19-May-2010	19-May-2010	24-May-2010 and others
Grid Close-Out	21-May-2010	25-May-2010	26-May-2010
MPPEH Processing	19-May-2010	19-May-2010	27-May-2010
MDAS and CD Disposition	9-Jun-2010	9-Jun-2010	9-Jun-2010
MDEH Disposition	9-Jun-2010	9-Jun-2010	9-Jun-2010
Demobilization	9-Jun-2010	10-Jun-2010	None

Notes:

CD = Cultural Debris
MDAS = Material Documented as Safe
MDEH = Material Documented as Explosive Hazard
MPPEH = Material Potentially Presenting an Explosive Hazard
QC = Quality Control
TCRA = Time-Critical Removal Action

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-1	2/17/2010	6123454.76	2197508.27	1	Cultural Debris (wrench)	CD
DGM-2	2/17/2010	6123897.23	2197965.83	3	20mm Fuze Piece	MDAS
DGM-3	2/17/2010	6123928.04	2197917.29	2	Cartridge Base	MDAS
DGM-4	2/17/2010	6123931.22	2197924.61	N/A	No Find	NF
DGM-5	2/17/2010	6123958.79	2197996.58	0	Cultural Debris	CD
DGM-6	2/17/2010	6123966.14	2197987.22	N/A	No Find	NF
DGM-7	2/17/2010	6124029.26	2197987.14	0	Cultural Debris (pin flag)	CD
DGM-8	2/17/2010	6123886.84	2197876.19	0	Cultural Debris (wire)	CD
DGM-9	2/17/2010	6123892.86	2197935.56	0	20mm Cartridge Base	MDAS
DGM-10	2/17/2010	6123214.00	2197246.05	3	20mm Fuze	MDAS
DGM-11	2/17/2010	6123283.37	2197393.78	3	Cartridge Base	MDAS
DGM-12	2/17/2010	6123286.09	2197340.29	3	Cultural Debris (wire)	CD
DGM-13	2/17/2010	6123328.26	2197443.65	0	Frag	MDAS
DGM-14	2/17/2010	6123187.86	2197234.25	2	Frag	MDAS
DGM-15	2/19/2010	6123096.94	2197418.19	N/A	No Find	NF
DGM-16	2/19/2010	6123074.05	2197379.91	N/A	No Find	NF
DGM-17	2/19/2010	6123078.09	2197499.14	3	Cultural Debris	CD
DGM-18	2/19/2010	6122974.20	2197514.65	3	Cultural Debris (pliers)	CD
DGM-19	2/19/2010	6123047.13	2197524.15	3	Frag	MDAS
DGM-20	2/19/2010	6123017.52	2197532.25	3	Cultural Debris	CD
DGM-21	2/19/2010	6123072.40	2197374.09	1	Aluminum 40mm Practice	MDAS
DGM-22	2/19/2010	6123042.76	2197545.19	N/A	No Find	NF
DGM-23	2/19/2010	6123076.81	2197375.33	1	Cultural Debris	CD
DGM-24	2/19/2010	6123100.15	2197425.77	N/A	No Find	NF
DGM-25	2/19/2010	6123159.15	2197460.23	0.5	Small Arms (Casings)	CD
DGM-26	2/19/2010	6123093.93	2197490.82	N/A	No Find	NF
DGM-27	2/19/2010	6123132.68	2197538.61	0	Cultural Debris	CD
DGM-30	2/19/2010	6123162.92	2197468.44	1	20mm Projectile & 20 mm Cartridge Case	MDEH & MDAS
DGM-33	2/19/2010	6123084.50	2197372.64	N/A	No Find	NF
DGM-34	2/19/2010	6123028.56	2197496.08	3	Cultural Debris	CD
DGM-35	2/19/2010	6123055.38	2197450.76	4	No Find/Cultural Debris	CD
DGM-47	2/24/2010	6123061.41	2197342.13	3	Frag	MDAS
DGM-48	2/24/2010	6123109.24	2197305.64	2	Cultural Debris	CD
DGM-49	2/24/2010	6123090.66	2197299.73	2	Cultural Debris	CD
DGM-50	2/24/2010	6123104.63	2197297.15	1	Cultural Debris	CD
DGM-51	2/24/2010	6123076.60	2197288.14	12	Cultural Debris & Frag	MDAS
DGM-52	2/24/2010	6123095.76	2197269.92	1	40mm Practice	MDAS
DGM-53	2/24/2010	6123032.29	2197265.38	3	Cultural Debris	CD
DGM-54	2/24/2010	6123183.79	2197238.16	1	20 mm Projectile	MDEH
DGM-55	2/24/2010	6123166.81	2197230.14	3	Cultural Debris	CD
DGM-56	2/24/2010	6123083.15	2197224.26	2	Partial Base Fuze	MDAS
DGM-57	2/24/2010	6123008.62	2197222.26	1	40mm Practice	MDAS
DGM-58	2/24/2010	6123086.49	2197192.12	1	M118 Practice Round	MDAS
DGM-59	2/24/2010	6123089.82	2197166.99	3	Partial Base Fuze & Cultural Debris	MDAS & CD
DGM-60	2/24/2010	6123071.77	2197161.62	0	Cultural Debris	CD
DGM-61	3/17/2010	6123092.69	2197159.33	N/A	No Find	NF
DGM-62	2/24/2010	6123025.39	2197157.90	0	M118 Practice Round	MDAS
DGM-63	2/24/2010	6123024.93	2197146.57	8	Cultural Debris (wrench)	CD
DGM-64	2/24/2010	6123098.43	2197136.72	1	Frag & Cultural Debris	MDAS & CD
DGM-65	2/24/2010	6123069.49	2197101.11	0.5	M118 Practice Round	MDAS
DGM-66	2/25/2010	6122791.85	2197412.18	N/A	No Find	NF
DGM-67	2/25/2010	6123372.24	2197590.03	3	338 Base Fuze	MDAS
DGM-68	2/25/2010	6123262.84	2197573.37	N/A	No Find	NF
DGM-69	2/25/2010	6123258.90	2197552.60	3	Cultural Debris	CD
DGM-70	2/25/2010	6123248.60	2197498.39	2	M118 Practice Round	MDAS
DGM-71	2/25/2010	6123217.87	2197477.49	2	Frag	MDAS
DGM-72	2/25/2010	6123106.33	2197307.02	3	40mm Practice Round	MDAS
DGM-73	2/25/2010	6122933.55	2196907.45	0	Cultural Debris (survey marker)	CD
DGM-74	2/25/2010	6122966.46	2196794.10	2	Frag	MDAS
DGM-75	2/25/2010	6122868.83	2196788.79	3	40 mm Practice Round	MDAS
DGM-76	2/25/2010	6123034.91	2196781.72	4	Cultural Debris (pipe)	CD
DGM-77	2/25/2010	6122821.54	2197030.09	1	Frag	MDAS
DGM-78	2/25/2010	6123213.17	2197831.95	N/A	No Find	NF
DGM-79	2/25/2010	6122851.21	2196985.05	N/A	No Find	NF

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-80	2/23/2010	6123301.16	2197648.63	N/A	No Find	NF
DGM-81	2/23/2010	6123262.09	2197745.51	N/A	No Find	NF
DGM-82	2/25/2010	6122887.73	2196939.57	N/A	No Find	NF
DGM-83	2/25/2010	6122852.93	2196972.32	3	Frag & Cultural Debris	MDAS & CD
DGM-84	2/25/2010	6122826.03	2196914.93	N/A	No Find	NF
DGM-85	2/25/2010	6122773.92	2196924.37	N/A	No Find	NF
DGM-86	2/25/2010	6122849.75	2196827.87	N/A	No Find	NF
DGM-87	2/25/2010	6122771.99	2196991.08	3	Cultural Debris	CD
DGM-88	2/25/2010	6122751.04	2196924.34	2	Base Fuze	MDAS
DGM-89	2/23/2010	6122750.17	2196928.35	N/A	No Find	NF
DGM-90	2/23/2010	6122745.11	2196929.05	N/A	No Find	NF
DGM-91	2/26/2010	6122932.04	2197393.59	2	M118 Practice Round	MDAS
DGM-92	2/26/2010	6122922.51	2197452.15	2	M118 Practice Round	MDAS
DGM-93	2/26/2010	6122918.20	2197594.91	0	Cultural Debris	CD
DGM-94	2/26/2010	6122897.50	2197409.26	2	M118 Practice Round	MDAS
DGM-95	2/26/2010	6122892.12	2197552.29	N/A	No Find	NF
DGM-96	2/26/2010	6122854.70	2197507.00	N/A	No Find	NF
DGM-97	2/26/2010	6122835.45	2197479.30	8	Base Fuze	MDAS
DGM-98	2/26/2010	6122828.74	2197407.97	2	Frag	MDAS
DGM-99	2/26/2010	6122803.66	2197380.16	2	Frag (aluminum)	MDAS
DGM-100	2/26/2010	6122776.15	2197481.05	2	Cultural Debris	CD
DGM-101	2/26/2010	6122764.18	2197422.09	2	Cultural Debris	CD
DGM-102	2/26/2010	6122784.75	2197473.08	6	Cultural Debris	CD
DGM-103	2/26/2010	6122885.04	2197454.29	N/A	No Find	NF
DGM-104	2/26/2010	6122875.32	2197452.88	N/A	No Find	NF
DGM-105	2/26/2010	6122858.63	2197356.28	8	40 mm Practice Round	MDAS
DGM-106	2/26/2010	6122931.25	2197635.31	N/A	No Find	NF
DGM-107	2/26/2010	6122928.84	2197630.69	N/A	No Find	NF
DGM-108	2/26/2010	6124168.01	2198200.15	0	20 mm Projectile	MDEH
DGM-109	2/26/2010	6124157.68	2198208.58	N/A	No Find	NF
DGM-110	2/26/2010	6124204.67	2198275.04	N/A	No Find	NF
DGM-111	2/26/2010	6124192.15	2198264.24	N/A	No Find	NF
DGM-112	2/26/2010	6124157.24	2198226.49	2	20 mm Projectile	MDEH
DGM-113	2/26/2010	6124195.39	2198272.78	N/A	No Find	NF
DGM-114	2/26/2010	6124154.61	2198235.94	2	20 mm Projectile	MDEH
DGM-115	2/26/2010	6124194.57	2198281.74	N/A	No Find	NF
DGM-116	2/26/2010	6124154.02	2198240.98	N/A	No Find	NF
DGM-117	2/26/2010	6124233.68	2198313.27	N/A	No Find	NF
DGM-118	2/26/2010	6124219.16	2198310.95	N/A	No Find	NF
DGM-119	2/26/2010	6124226.86	2198318.87	N/A	No Find	NF
DGM-120	2/26/2010	6124155.90	2198268.28	0	Cultural Debris (wire)	CD
DGM-121	2/26/2010	6124185.66	2198300.63	N/A	No Find	NF
DGM-122	2/26/2010	6124103.44	2198233.61	0	Cultural Debris	CD
DGM-123	2/26/2010	6124185.60	2198337.16	N/A	No Find	NF
DGM-124	2/26/2010	6124145.96	2198312.80	N/A	No Find	NF
DGM-125	2/26/2010	6124165.60	2198333.19	N/A	No Find	NF
DGM-126	2/26/2010	6124205.25	2198354.81	N/A	No Find	NF
DGM-127	2/26/2010	6124165.60	2198356.25	N/A	No Find	NF
DGM-128	2/26/2010	6124152.34	2198350.78	N/A	No Find	NF
DGM-129	2/26/2010	6124167.00	2198357.67	0	Cultural Debris	CD
DGM-130	2/26/2010	6124095.22	2198306.86	1	20 mm Projectile	MDEH
DGM-131	2/26/2010	6124081.34	2198294.97	0	Cultural Debris	CD
DGM-132	2/26/2010	6124115.55	2198345.44	2	Cultural Debris	CD
DGM-133	2/26/2010	6124088.63	2198326.28	0	Frag	MDAS
DGM-134	2/26/2010	6124123.89	2198363.28	N/A	No Find	NF
DGM-135	2/26/2010	6124140.49	2198382.10	N/A	No Find	NF
DGM-136	2/26/2010	6124029.06	2198315.47	N/A	No Find	NF
DGM-137	2/26/2010	6124148.89	2198415.33	0.5	QC Seed	QC
DGM-138	2/26/2010	6124133.50	2198414.42	N/A	No Find	NF
DGM-139	2/26/2010	6124137.94	2198416.71	N/A	No Find	NF
DGM-140	2/26/2010	6124027.89	2198338.17	N/A	No Find	NF
DGM-141	2/26/2010	6124017.91	2198353.73	N/A	No Find	NF
DGM-142	2/26/2010	6124087.21	2198413.42	2	Cultural Debris	CD
DGM-143	2/26/2010	6124007.36	2198350.03	3	20 mm Projectile	MDEH

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-144	3/3/2010	6123164.77	2197542.46	2	20 mm Projectile	MDEH
DGM-145	3/3/2010	6123181.79	2197564.67	0.5	20 mm Projectile x 2	MDEH
DGM-146	3/3/2010	6123147.88	2197586.16	N/A	No Find	NF
DGM-147	3/3/2010	6123140.84	2197582.12	2	20 mm Projectile	MDEH
DGM-148	3/3/2010	6123138.56	2197608.85	2	Frag	MDAS
DGM-149	3/3/2010	6123141.69	2197634.18	1	Frag	MDAS
DGM-150	3/3/2010	6123142.15	2197638.32	N/A	No Find	NF
DGM-151	3/3/2010	6123113.37	2197617.92	6	40 mm Projectile	MDAS
DGM-152	3/3/2010	6123115.28	2197623.65	N/A	No Find	NF
DGM-153	3/3/2010	6123108.55	2197620.00	6	same source as 151	MDAS
DGM-154	3/3/2010	6123138.23	2197659.62	N/A	No Find	NF
DGM-155	3/3/2010	6123087.28	2196912.41	3	Cultural Debris (aluminum can)	CD
DGM-156	3/3/2010	6123115.90	2196985.25	0.5	20 mm Projectile	MDEH
DGM-157	3/3/2010	6123068.35	2196924.94	N/A	No Find	NF
DGM-158	3/3/2010	6123090.08	2197000.04	4	Cultural Debris	CD
DGM-159	3/3/2010	6123089.88	2197004.87	1	Cultural Debris	CD
DGM-160	3/3/2010	6123032.87	2196900.96	0.5	QC Seed	QC
DGM-161	3/3/2010	6123075.12	2197003.81	0.5	Cultural Debris	CD
DGM-162	3/3/2010	6123088.10	2197069.12	2	Cultural Debris	CD
DGM-163	3/3/2010	6123053.44	2197016.30	0.5	Cultural Debris	CD
DGM-164	3/3/2010	6123055.92	2197057.09	N/A	No Find	NF
DGM-165	3/3/2010	6123007.06	2196983.50	N/A	No Find	NF
DGM-166	3/3/2010	6123022.34	2197016.48	0.5	20 mm Projectile	MDEH
DGM-167	3/3/2010	6123041.62	2197062.01	0	Cultural Debris	CD
DGM-168	3/3/2010	6123009.42	2197013.71	1	40 mm Projectile	MDEH
DGM-169	3/3/2010	6122999.26	2197000.33	1	Same source as 168 and 170	MDEH
DGM-170	3/3/2010	6122996.50	2197016.00	1	Same source as 168 and 169	MDEH
DGM-171	3/3/2010	6123993.95	2198349.00	N/A	No Find	NF
DGM-172	3/3/2010	6124070.91	2198417.50	2	Frag	MDAS
DGM-173	3/3/2010	6123988.40	2198353.29	0.05	20 mm Projectile	MDEH
DGM-174	3/3/2010	6123968.70	2198344.08	N/A	No Find	NF
DGM-175	3/3/2010	6123996.16	2198381.32	0	Frag	MDAS
DGM-176	3/3/2010	6123994.61	2198383.46	N/A	No Find	NF
DGM-177	3/3/2010	6123990.99	2198419.11	3	20 mm Projectile	MDEH
DGM-178	3/3/2010	6123770.63	2198385.67	N/A	No Find	NF
DGM-179	3/3/2010	6123745.05	2198393.84	N/A	No Find	NF
DGM-180	3/3/2010	6123756.55	2198385.98	N/A	No Find	NF
DGM-181	3/3/2010	6123770.89	2198381.28	N/A	No Find	NF
DGM-182	3/3/2010	6123802.36	2198374.42	N/A	No Find	NF
DGM-183	3/3/2010	6123594.35	2198189.07	N/A	No Find	NF
DGM-184	3/3/2010	6123675.62	2198153.36	N/A	No Find	NF
DGM-185	3/3/2010	6123599.60	2198191.00	N/A	No Find	NF
DGM-186	3/3/2010	6123636.87	2198177.62	N/A	No Find	NF
DGM-187	3/3/2010	6123555.95	2198223.83	0.5	Cultural Debris	CD
DGM-188	3/3/2010	6123501.07	2198252.22	N/A	No Find	NF
DGM-189	3/3/2010	6123587.99	2198213.70	0.5	Cultural Debris (survey marker)	CD
DGM-190	3/3/2010	6123573.86	2198220.78	N/A	No Find	NF
DGM-191	3/3/2010	6123526.30	2198245.00	N/A	No Find	NF
DGM-192	3/3/2010	6123692.67	2198331.84	N/A	No Find	NF
DGM-193	3/3/2010	6123670.75	2198319.37	3	Cultural Debris	CD
DGM-194	3/3/2010	6123626.88	2198337.98	0.5	Cultural Debris	CD
DGM-195	3/3/2010	6123945.59	2198376.19	N/A	No Find	NF
DGM-196	3/3/2010	6123942.59	2198382.66	0	Cultural Debris	CD
DGM-197	3/3/2010	6123901.19	2198365.25	N/A	No Find	NF
DGM-198	3/3/2010	6123860.36	2198360.00	N/A	No Find	NF
DGM-199	3/3/2010	6123594.92	2198204.49	N/A	No Find	NF
DGM-200	3/3/2010	6123660.14	2198310.59	N/A	No Find	NF
DGM-201	3/3/2010	6123644.03	2198311.98	N/A	No Find	NF
DGM-202	3/9/2010	6123187.05	2197920.60	0	Cultural Debris	CD
DGM-203	3/4/2010	6124260.01	2198168.39	0	Cultural Debris (survey marker)	CD
DGM-204	3/9/2010	6123163.72	2197483.91	3	Base Fuze	MDAS
DGM-205	3/4/2010	6124221.18	2198204.36	0	Cultural Debris	CD
DGM-206	3/4/2010	6124232.01	2198189.23	0.5	QC Seed	QC
DGM-207	3/9/2010	6123125.01	2197450.86	8	Base Fuze	MDAS

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-208	3/9/2010	6123307.35	2197851.84	4	Frag (nose plug)	MDAS
DGM-209	3/4/2010	6124227.42	2198131.11	0	Cultural Debris	CD
DGM-210	3/4/2010	6124227.41	2198120.54	1	Cultural Debris	CD
DGM-211	3/9/2010	6123225.64	2197910.98	4	Cultural Debris	CD
DGM-212	3/9/2010	6123255.40	2197894.87	N/A	No Find	NF
DGM-213	3/9/2010	6123243.17	2197912.13	N/A	No Find	NF
DGM-214	3/9/2010	6122957.56	2197474.12	8	Cultural Debris	CD
DGM-215	3/9/2010	6122998.01	2197465.66	4	20 mm Projectile	MDEH
DGM-216	3/9/2010	6123075.75	2197405.36	N/A	No Find	NF
DGM-217	3/9/2010	6123066.10	2197496.75	1	Cultural Debris	CD
DGM-218	3/9/2010	6123102.26	2197470.07	N/A	No Find	NF
DGM-219	3/9/2010	6122970.63	2197468.56	N/A	No Find	NF
DGM-220	3/9/2010	6123027.29	2197444.82	1	Cultural Debris	CD
DGM-221	3/9/2010	6123027.28	2197580.42	12	Cultural Debris	CD
DGM-222	3/9/2010	6123007.97	2197543.86	2	Cultural Debris	CD
DGM-223	3/9/2010	6122960.64	2197548.70	N/A	No Find	NF
DGM-224	3/9/2010	6122980.68	2197568.84	N/A	No Find	NF
DGM-225	3/9/2010	6122998.30	2197657.83	N/A	No Find	NF
DGM-226	3/9/2010	6123028.60	2197705.95	2	Cultural Debris	CD
DGM-227	3/9/2010	6122961.74	2197527.10	2	Frag	MDAS
DGM-228	3/9/2010	6123057.27	2197585.45	N/A	No Find	NF
DGM-229	3/9/2010	6123678.13	2197756.41	2	Cultural Debris	CD
DGM-230	3/9/2010	6123665.44	2197751.79	1	Cultural Debris	CD
DGM-231	3/9/2010	6123581.53	2197890.98	0.5	Frag	MDAS
DGM-232	3/4/2010	6123700.56	2197755.12	1	20 mm Projectile	MDEH
DGM-233	3/9/2010	6123594.26	2197882.48	1	Frag & CD	MDAS & CD
DGM-234	3/9/2010	6123596.90	2197837.88	0.5	Cultural Debris	CD
DGM-235	3/4/2010	6123693.86	2197753.41	1	Cultural Debris	CD
DGM-236	3/4/2010	6123718.95	2197752.44	1	20 mm Projectile	MDEH
DGM-237	3/9/2010	6123628.98	2197809.67	0.5	Cultural Debris	CD
DGM-238	3/9/2010	6123633.40	2197800.28	0.5	Cultural Debris	CD
DGM-239	3/9/2010	6123567.33	2197878.20	0.5	Cultural Debris	CD
DGM-240	3/9/2010	6123686.84	2197740.67	2	Frag & CD	MDAS & CD
DGM-241	3/9/2010	6123588.19	2197853.19	1	Cultural Debris	CD
DGM-242	3/9/2010	6123613.51	2197833.15	0.5	Cultural Debris	CD
DGM-243	3/9/2010	6123586.53	2197873.00	3	20 mm Projectile	MDEH
DGM-252	3/12/2010	6123571.26	2198245.81	N/A	No Find	NF
DGM-253	3/12/2010	6123565.69	2198250.97	N/A	No Find	NF
DGM-254	3/12/2010	6123573.41	2198290.13	1	Cultural Debris	CD
DGM-255	3/12/2010	6123563.55	2198266.55	N/A	No Find	NF
DGM-256	3/12/2010	6123602.97	2198296.85	3	Cultural Debris	CD
DGM-257	3/12/2010	6123565.71	2198255.56	N/A	No Find	NF
DGM-258	3/12/2010	6123529.80	2198290.38	N/A	No Find	NF
DGM-259	3/12/2010	6123595.74	2198218.83	0	Cultural Debris (survey marker)	CD
DGM-260	3/12/2010	6123640.31	2198301.20	1	Cultural Debris	CD
DGM-261	3/12/2010	6123596.83	2198332.29	0.5	Cultural Debris	CD
DGM-262	3/12/2010	6123574.36	2198238.81	1	Cultural Debris	CD
DGM-263	3/12/2010	6123588.00	2198251.38	N/A	No Find	NF
DGM-264	3/12/2010	6123523.98	2198292.38	N/A	No Find	NF
DGM-265	3/12/2010	6123629.40	2198295.34	N/A	No Find	NF
DGM-266	3/12/2010	6123548.86	2198267.37	N/A	No Find	NF
DGM-267	3/12/2010	6123444.13	2198003.35	0.5	Frag	MDAS
DGM-268	3/12/2010	6123454.89	2198015.83	0.5	20 mm Projectile	MDEH
DGM-269	3/12/2010	6123453.60	2197991.10	N/A	No Find	NF
DGM-270	3/12/2010	6123420.03	2197953.86	N/A	No Find	NF
DGM-271	3/12/2010	6123418.07	2197977.46	0.5	Cultural Debris	CD
DGM-272	3/12/2010	6123469.34	2198007.59	N/A	No Find	NF
DGM-273	3/12/2010	6123379.29	2198003.21	0	Frag and Cultural Debris	MDAS
DGM-274	3/12/2010	6123408.55	2198075.40	N/A	No Find	NF
DGM-275	3/12/2010	6123456.93	2198037.34	N/A	No Find	NF
DGM-276	3/12/2010	6123433.66	2198051.10	0	Cultural Debris	CD
DGM-277	3/12/2010	6123435.92	2198032.92	N/A	No Find	NF
DGM-278	3/12/2010	6123288.52	2198086.45	1	Cultural Debris	CD
DGM-279	3/12/2010	6123365.96	2198009.34	0.9	Cultural Debris	CD

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-280	3/12/2010	6123378.00	2198070.57	N/A	No Find	NF
DGM-281	3/12/2010	6123383.49	2198005.78	N/A	No Find	NF
DGM-282	3/12/2010	6123385.21	2198021.54	0.5	Frag	MDAS
DGM-283	3/12/2010	6123384.13	2198041.32	N/A	No Find	NF
DGM-284	3/12/2010	6123349.73	2197503.97	N/A	No Find	NF
DGM-285	3/12/2010	6123342.07	2198018.64	0.5	Cultural Debris	CD
DGM-286	3/12/2010	6123388.07	2198019.35	0.5	shared hit with 282	MDAS
DGM-287	3/12/2010	6123328.14	2198096.12	N/A	No Find	NF
DGM-288	3/17/2010	6123328.44	2198024.40	1	Cultural Debris	CD
DGM-289	3/17/2010	6123092.91	2197298.62	N/A	No Find	NF
DGM-290	3/17/2010	6123169.14	2197211.26	0.5	Cultural Debris	CD
DGM-291	3/17/2010	6123022.62	2197151.28	N/A	No Find	NF
DGM-292	3/17/2010	6123115.81	2197281.00	3	20 mm Projectile	MDEH
DGM-293	3/17/2010	6123103.48	2197313.51	4	Cultural Debris	CD
DGM-294	3/17/2010	6123101.90	2197297.73	N/A	No Find	NF
DGM-295	3/17/2010	6123096.68	2197309.71	6	Cultural Debris	CD
DGM-296	3/17/2010	6123717.41	2198363.49	N/A	No Find	NF
DGM-297	3/17/2010	6123510.77	2197557.05	0.5	20 mm Projectile	MDEH
DGM-298	3/17/2010	6123819.82	2198374.05	N/A	No Find	NF
DGM-299	3/17/2010	6123434.11	2197485.44	0	Cultural Debris	CD
DGM-300	3/17/2010	6123799.20	2198374.25	N/A	No Find	NF
DGM-301	3/17/2010	6123939.04	2197955.64	N/A	No Find	NF
DGM-302	3/17/2010	6123896.60	2197874.97	1	Cultural Debris	CD
DGM-303	3/17/2010	6123153.58	2197166.39	2	Cultural Debris	CD
DGM-304	3/17/2010	6123118.28	2197127.61	N/A	No Find	NF
DGM-305	3/17/2010	6123020.06	2196918.65	12	Cultural Debris	CD
DGM-306	3/17/2010	6123160.58	2197690.82	0.5	Cultural Debris & QC Seed	CD & QC
DGM-307	3/17/2010	6123149.77	2197751.65	N/A	No Find	NF
DGM-308	3/17/2010	6123146.04	2197762.87	N/A	No Find	NF
DGM-309	3/17/2010	6124279.02	2198187.08	N/A	No Find	NF
DGM-310	3/17/2010	6124194.22	2198201.19	N/A	No Find	NF
DGM-311	3/17/2010	6123218.92	2197905.30	0.5	Cultural Debris	CD
DGM-312	3/17/2010	6124233.77	2198148.49	2	20 mm Projectile	MDEH
DGM-313	3/17/2010	6123137.93	2197460.73	6	20 mm Projectile	MDEH
DGM-314	3/17/2010	6124217.98	2198143.50	2	Cultural Debris	CD
DGM-315	3/17/2010	6124266.65	2198187.50	1	Cultural Debris	CD
DGM-316	3/17/2010	6123255.40	2197894.87	N/A	No Find	NF
DGM-317	3/17/2010	6123175.37	2197941.28	N/A	No Find	NF
DGM-318	3/17/2010	6124225.99	2198235.09	0.5	Cultural Debris	CD
DGM-319	3/17/2010	6123209.20	2197919.52	6	Cultural Debris & 20 mm Projectile	CD & MDEH
DGM-320	3/17/2010	6123213.52	2197906.68	N/A	No Find	NF
DGM-321	3/18/2010	6123173.02	2197257.40	2	Cultural Debris	CD
DGM-322	3/18/2010	6123177.32	2197344.52	4	Frag	MDAS
DGM-323	3/18/2010	6123181.71	2197326.76	2	20 mm Projectile	MDEH
DGM-324	3/18/2010	6123184.48	2197338.16	2	Frag & 20 mm Projectile	MDAS & MDEH
DGM-325	3/18/2010	6123186.78	2197347.83	0	Cultural Debris	CD
DGM-326	3/18/2010	6123186.84	2197289.67	3	Cultural Debris (pliers)	CD
DGM-327	3/18/2010	6123207.45	2197365.32	4	20 mm Projectile	MDEH
DGM-328	3/18/2010	6123213.39	2197356.07	N/A	No Find	NF
DGM-329	3/18/2010	6123216.81	2197384.29	3	Cultural Debris	CD
DGM-330	3/18/2010	6123226.29	2197390.93	2	20 mm Projectile	MDEH
DGM-331	3/18/2010	6123247.55	2197443.58	6	40 mm Projectile Practice	MDAS
DGM-332	3/18/2010	6123268.14	2197488.67	2	Cultural Debris	CD
DGM-333	3/18/2010	6123300.57	2197481.68	0.5	Cultural Debris	CD
DGM-334	3/18/2010	6123338.03	2197493.73	0	Cultural Debris	CD
DGM-335	3/18/2010	6123374.75	2197541.55	6	Frag	MDAS
DGM-336	3/18/2010	6123426.37	2197575.74	12	Cultural Debris	CD
DGM-340	3/19/2010	6123450.40	2197959.52	0	Cultural Debris	CD
DGM-343	3/19/2010	6123460.01	2197951.88	1	Cultural Debris	CD
DGM-344	3/19/2010	6123462.65	2197981.51	1	Frag	MDAS
DGM-345	3/19/2010	6123465.17	2197922.42	1	Cultural Debris	CD
DGM-347	3/19/2010	6123473.54	2197917.15	0	Cultural Debris	CD
DGM-348	3/19/2010	6123483.36	2197974.32	1	Cultural Debris	CD
DGM-349	3/19/2010	6123492.86	2197933.04	1	Cultural Debris	CD

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-350	3/19/2010	6123495.18	2197992.74	1	Cultural Debris	CD
DGM-351	3/19/2010	6123508.20	2197926.98	1	Cultural Debris	CD
DGM-352	3/19/2010	6123529.07	2197916.37	0	Cultural Debris	CD
DGM-353	3/19/2010	6123531.55	2197956.47	1	Cultural Debris	CD
DGM-354	3/19/2010	6123545.05	2197924.77	1	Cultural Debris	CD
DGM-355	3/19/2010	6123547.74	2197893.35	1	Cultural Debris	CD
DGM-356	3/19/2010	6123561.22	2197882.42	1	Cultural Debris	CD
DGM-357	3/19/2010	6123566.48	2197918.82	1	Cultural Debris	CD
DGM-375	5/20/2010	6123873.63	2198360.11	N/A	No Find	NF
DGM-376	5/20/2010	6123763.82	2198383.49	N/A	No Find	NF
DGM-377	3/25/2010	6123192.60	2197442.56	3	40 mm Practice Round	MDAS
DGM-378	3/25/2010	6123074.53	2196847.63	N/A	No Find	NF
DGM-379	3/25/2010	6123071.14	2196835.15	3	Frag	MDAS
DGM-380	3/25/2010	6123020.95	2196864.14	6	Frag (melted aluminum)	MDAS
DGM-381	3/25/2010	6123113.18	2197354.91	0	Cultural Debris (22 bullet)	CD
DGM-382	3/25/2010	6123168.30	2197408.88	2	20 mm Projectile	MDEH
DGM-383	3/25/2010	6123129.71	2197371.98	N/A	No Find	NF
DGM-384	3/25/2010	6123148.20	2197399.29	N/A	No Find	NF
DGM-385	3/25/2010	6123122.32	2197368.23	0	Cultural Debris (rust)	CD
DGM-386	3/25/2010	6122894.93	2196762.24	0	20 mm Projectile	MDEH
DGM-387	3/25/2010	6123201.38	2197461.85	2	Frag	MDAS
DGM-388	3/25/2010	6123306.27	2197559.03	3	Frag	MDAS
DGM-389	3/25/2010	6122782.50	2197404.71	N/A	No Find	NF
DGM-390	3/25/2010	6123346.92	2197570.98	0	QC Seed (previously removed)	QC
DGM-391	5/19/2010	6123405.94	2197443.43	2	Cultural Debris (9mm slug)	CD
DGM-392	5/20/2010	6123811.53	2197730.34	2	Frag	MDAS
DGM-393	5/20/2010	6124044.22	2197912.96	8	Cultural Debris (hot rock)	CD
DGM-394	5/20/2010	6123840.05	2197799.26	2	Cultural Debris (rust)	CD
DGM-395	5/20/2010	6123811.38	2197744.53	N/A	No Find	NF
DGM-396	5/20/2010	6123932.67	2197987.75	0.5	Frag	MDAS
DGM-397	5/20/2010	6124092.02	2197971.37	0	20 mm projectile (practice)	MDEH
DGM-398	5/20/2010	6123990.57	2197986.02	0	Cultural Debris (hot rock)	CD
DGM-399	5/20/2010	6123948.49	2197967.61	2	20 mm Projectile (HE)	MDEH
DGM-400	5/20/2010	6124024.95	2197975.50	1	Frag	MDAS
DGM-401	5/20/2010	6124035.66	2197986.73	N/A	No Find	NF
DGM-402	5/20/2010	6123939.05	2197934.60	0	Cultural Debris (hot rock)	CD
DGM-403	5/19/2010	6123734.74	2197726.00	N/A	No Find	NF
DGM-404	5/20/2010	6123934.77	2198026.00	1	20 mm Projectile (practice)	MDEH
DGM-405	5/20/2010	6123927.67	2197999.49	0.5	20 mm Projectile (practice)	MDEH
DGM-406	5/20/2010	6123937.27	2197996.13	0.5	Cultural Debris (.50 cal slug)	CD
DGM-407	5/20/2010	6123974.69	2197901.33	N/A	No Find	NF
DGM-408	5/20/2010	6123923.18	2197899.32	N/A	No Find	NF
DGM-409	5/19/2010	6123805.60	2197768.13	1	Cultural Debris	CD
DGM-410	5/20/2010	6123896.56	2197817.90	N/A	No Find	NF
DGM-411	5/19/2010 & 5/20/2010	6123631.91	2197601.30	0	20 mm Projectile	MDEH
DGM-412	5/19/2010	6123413.15	2197455.59	4	Cultural Debris (nail)	CD
DGM-413	5/20/2010	6123815.76	2197721.32	4	Cultural Debris (spring)	CD
DGM-414	5/20/2010	6123906.70	2197871.87	N/A	No Find	NF
DGM-415	5/19/2010	6123706.03	2197643.31	2	Cultural Debris (wire)	CD
DGM-416	5/20/2010	6123889.86	2197917.02	N/A	No Find	NF
DGM-417	5/19/2010	6123411.55	2197501.62	2	Cultural Debris (wire)	CD
DGM-418	5/19/2010	6123434.70	2197530.55	1	Cultural Debris	CD
DGM-419	5/20/2010	6123332.03	2197403.20	4	20 mm Projectile and Frag	MDEH
DGM-420	5/20/2010	6123350.65	2197427.52	2	20 mm Projectile Body (no fuze)	MDEH
DGM-421	5/19/2010	6123338.44	2197493.76	CD	Cultural Debris (nail)	CD
DGM-422	5/19/2010	6123356.93	2197402.32	0	Cultural Debris (nail)	CD
DGM-423	5/19/2010	6123365.62	2197465.72	6	Cultural Debris (pipe)	CD
DGM-424	5/19/2010	6123210.07	2197240.72	N/A	No Find	NF
DGM-425	5/19/2010	6123343.29	2197392.60	1	20 mm Cartridge Base	MDAS
DGM-426	5/19/2010	6123290.25	2197362.32	N/A	No Find	NF
DGM-427	5/19/2010	6123258.53	2197315.16	3	20 mm Projectile (AP)	MDEH
DGM-428	5/19/2010	6123254.43	2197320.43	4	Cultural Debris (nail)	CD
DGM-429	5/19/2010	6123184.59	2197250.47	N/A	No Find	NF
DGM-430	5/20/2010	6123390.90	2197475.11	1	Cultural Debris (brass cartridge)	CD

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
DGM-431	5/19/2010	6123378.61	2197437.58	N/A	No Find	NF
DGM-432	5/19/2010	6123335.99	2197451.29	N/A	No Find	NF
DGM-433	5/19/2010	6123326.63	2197342.76	1	Frag	MDAS
DGM-434	5/19/2010	6123291.16	2197363.69	N/A	No Find	NF
DGM-435	5/19/2010	6122773.26	2197399.11	N/A	No Find	NF
DGM-436	5/19/2010	6122789.72	2197402.21	N/A	No Find	NF
DGM-437	5/19/2010	6122884.51	2197465.94	N/A	No Find	NF
DGM-438	5/19/2010	6122912.91	2197469.29	N/A	No Find	NF
DGM-439	5/19/2010	6122923.71	2196785.78	4	Cultural Debris (nails x 3)	CD
DGM-440	5/19/2010	6122930.19	2196877.04	0	Cultural Debris (pipe nipple)	CD
DGM-441	5/19/2010	6122991.19	2196769.97	0	Cultural Debris (fence post x 2 and wire)	CD
DGM-442	5/19/2010	6123092.76	2197313.38	N/A	No Find	NF
DGM-443	5/19/2010	6123098.36	2197316.17	N/A	No Find	NF
DGM-444	5/19/2010	6123100.87	2197370.63	N/A	No Find	NF
DGM-445	5/19/2010	6123102.12	2197381.29	N/A	No Find	NF
DGM-446	5/19/2010	6123104.00	2197296.42	N/A	No Find	NF
DGM-447	5/19/2010	6123104.00	2197314.93	N/A	No Find	NF
DGM-448	5/19/2010	6123123.04	2197385.97	3	20 mm Projectile (practice)	MDEH
DGM-449	5/19/2010	6123135.88	2197333.12	N/A	No Find	NF
DGM-450	5/19/2010	6123141.97	2197407.45	N/A	No Find	NF
DGM-451	5/19/2010	6123152.98	2197374.13	N/A	No Find	NF
DGM-452	5/19/2010	6123161.30	2197466.47	N/A	No Find	NF
DGM-453	5/19/2010	6123166.22	2197330.62	N/A	No Find	NF
DGM-454	5/19/2010	6123166.80	2197367.34	N/A	No Find	NF
DGM-455	5/19/2010	6123173.68	2197435.56	5	20 mm Projectile	MDEH
DGM-456	5/19/2010	6123175.43	2197383.53	2	Cultural Debris (2.5-inch washer)	CD
DGM-457	5/19/2010	6123184.08	2197417.34	2	20 mm Projectile (AP)	MDEH
DGM-458	5/19/2010	6123186.44	2197369.25	N/A	No Find	NF
DGM-459	5/19/2010	6123195.15	2197518.16	1	Frag	MDAS
DGM-460	5/19/2010	6123230.99	2197122.23	N/A	No Find	NF
DGM-461	5/19/2010	6123274.33	2197507.40	N/A	No Find	NF
DGM-462	5/19/2010	6123297.22	2197618.33	N/A	No Find	NF
DGM-463	5/19/2010	6122828.44	2197004.45	N/A	No Find	NF
DGM-464	5/19/2010	6122960.15	2196943.63	N/A	No Find	NF
DGM-465	5/20/2010	6123278.45	2197796.97	N/A	No Find	NF
DGM-466	5/19/2010	6122815.08	2197029.46	N/A	No Find	NF
DGM-467	5/20/2010	6123286.89	2197770.27	3	20 mm Projectile	MDEH
DGM-468	5/19/2010	6122815.90	2197041.51	N/A	No Find	NF
DGM-469	5/20/2010	6123246.35	2197847.63	N/A	No Find	NF
DGM-470	5/20/2010	6123167.08	2197894.72	N/A	No Find	NF
DGM-471	5/19/2010	6123326.96	2197661.64	2	20 mm Projectile (no fuze)	MDEH
DGM-472	5/19/2010	6122938.65	2196930.12	N/A	No find	NF
DGM-473	5/19/2010	6122874.10	2196966.10	1	20 mm Projectile (practice)	MDEH
DGM-474	5/19/2010	6122795.22	2197058.29	N/A	No Find	NF
DGM-475	5/19/2010	6122783.68	2197057.38	N/A	No Find	NF
DGM-476	5/20/2010	6123282.46	2197747.17	0	20 mm Projectile Base	MDAS
DGM-477	5/19/2010	6122787.65	2197039.04	N/A	No Find	NF
DGM-478	5/19/2010 & 5/21/2010	6122920.22	2197464.42	2	M119 Rockeye Practice	MDAS
DGM-479	5/20/2010	6124231.05	2198125.16	0	Cultural Debris (wire)	CD
DGM-480	5/20/2010	6124244.55	2198220.80	0	Cultural Debris (pin flag)	CD
DGM-481	5/20/2010	6123579.34	2197891.67	2	Cultural Debris (small arms)	CD
DGM-482	5/20/2010	6123401.04	2198016.69	N/A	No Find	NF
DGM-483	5/20/2010	6123427.49	2198050.65	N/A	No Find	NF

Notes:

AP = Armor Piercing
bgs = below ground surface
CD = Cultural Debris
DGM = Digital Geophysical Mapping
Frag = Munitions Fragment
MDAS = Material Documented as Safe
MDEH = Material Documented as Explosive Hazard
mm = millimeter
NA = Not Applicable
NF = No Find

Total MDEH: 47
Total MDAS: 72
Total CD: 145
Total QC: 5
Total NF: 177

Table 3-1. DGM Anomaly Investigation Results

Anomaly Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category

QC = Quality Control

Table 3-2. Team 1 Mag-and-Flag Investigation Results for TCRA Phase I

MDAS/MDEH Item Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
R1_T1-1	2/10/2010	6123278.208	2198839.274	3	QC Seed	QC
R1_T1-2	2/10/2010	6123227.858	2198682.098	12	M103 or M163 Bomb Fuze	MDEH
R1_T1-3	2/17/2010	6122639.858	2198148.047	3	Frag (105 mm)	MDAS
R1_T1-4	2/17/2010	6123048.768	2198420.817	5	20 mm projectile	MDEH
R1_T1-5	2/18/2010	6122964.073	2198510.035	2	QC Seed	QC
R1_T1-6	2/18/2010	6123056.268	2198552.043	2	QC Seed	QC
R1_T1-7	2/18/2010	6123013.604	2198552.347	2	QC Seed	QC
R1_T1-8	2/18/2010	6123023.871	2198611.349	2	QC Seed	QC
R1_T1-9	2/18/2010	6123017.424	2198627.805	2	QC Seed	QC
R1_T1-10	2/19/2010	6122993.586	2198506.542	1	Frag	MDAS
R1_T1-11	2/19/2010	6122966.910	2198447.657	4	Link	MDAS
R1_T1-12	2/19/2010	6122815.573	2198396.224	0	20 mm Cartridge (no Fuze)	MDAS
R1_T1-13	2/24/2010	6123018.214	2197357.675	8	20 mm Projectile	MDEH
R1_T1-14	2/24/2010	6122988.678	2197357.886	9	20 mm Projectile	MDEH
R1_T1-15	2/24/2010	6122895.500	2197178.041	2	40 mm Grenade (practice)	MDAS
R1_T1-16	2/24/2010	6122903.070	2197319.112	2	20 mm Projectile	MDEH
R1_T1-17	2/24/2010	6122840.364	2197270.330	0	Rockeye Nose, M118 (Dummy/Orange)	MDAS
R1_T1-18	2/24/2010	6122820.861	2197296.725	8	Fuze Part	MDAS
R1_T1-19	2/25/2010	6122770.505	2197599.025	3	Frag	MDAS
R1_T1-20	2/25/2010	6122781.076	2197700.691	0	40 mm Grenade (practice)	MDAS
R1_T1-21	2/25/2010	6122813.449	2197638.103	2	20 mm Projectile	MDEH
R1_T1-22	2/25/2010	6122846.642	2197690.378	0	Frag	MDAS
R1_T1-23	2/26/2020	6123054.542	2197849.712	3	Frag	MDAS
R1_T1-24	2/26/2010	6123008.924	2197895.985	3	QC Seed	QC
R1_T1-25	2/26/2010	6123074.865	2197938.181	4	QC Seed	QC
R1_T1-26	2/26/2010	6123085.436	2198039.847	0.5	QC Seed	QC
R1_T1-27	2/26/2020	6123444.633	2197784.573	3	20 mm Projectile	MDEH
R1_T1-28	2/26/2010	6123569.037	2197741.020	3	Detonator Debris	MDAS
R1_T1-29	2/26/2010	6123565.802	2197747.607	3	20 mm Cartridge	MDAS
R1_T1-30	2/26/2010	6123562.544	2197750.913	12	End Plate/Link	MDAS
R1_T1-31	2/26/2010	6123558.864	2197695.145	0	Frag - Fuze Component	MDAS
R1_T1-32	2/26/2010	6123548.832	2197668.961	3	Frag - Small	MDAS
R1_T1-33	2/26/2010	6123552.441	2197714.883	2	Grenade Fuze	MDAS
R1_T1-34	2/26/2010	6123545.878	2197714.930	2	Frag, Small	MDAS
R1_T1-35	2/26/2010	6123552.465	2197718.165	0	20 mm Projectile	MDEH
R1_T1-36	2/26/2010	6123549.183	2197718.188	2	Frag	MDAS
R1_T1-37	2/26/2010	6123552.441	2197714.883	0	Grenade Fuze Part	MDAS
R1_T1-38	2/26/2010	6123549.159	2197714.906	2	Frag	MDAS
R1_T1-39	2/26/2010	6123340.177	2197864.085	2	Frag	MDAS
R1_T1-40	3/1/2010	Not Collected		3	QC Seed	QC
R1_T1-41	3/1/2010	6123193.525	2198009.538	6	20 mm Projectile	MDEH
R1_T1-42	3/1/2010	6123213.379	2198032.370	6	20 mm Projectile	MDEH
R1_T1-43	3/3/2010	6123114.059	2197911.645	2	Frag	MDAS
R1_T1-44	3/3/2010	6123208.132	2197756.722	0	37 mm Projectile (training)	MDAS
R1_T1-45	3/3/2010	6123207.945	2197730.467	2	Frag	MDAS
R1_T1-46	3/4/2010	6123203.300	2197999.622	7	20 mm Projectile	MDEH
R1_T1-47	3/4/2010	6123314.390	2197929.909	2	Frag	MDAS
R1_T1-48	3/4/2010	6123268.726	2197969.618	3	Frag	MDAS
R1_T1-49	3/4/2010	6123242.612	2197989.496	3	Frag	MDAS
R1_T1-50	3/4/2010	6123277.822	2197864.530	6	Frag	MDAS
R1_T1-51	3/4/2010	6123333.449	2197841.160	8	QC Seed	QC
R1_T1-52	3/4/2010	6123533.335	2197797.069	3	Frag (heavy/large)	MDAS
R1_T1-53	3/4/2010	6123510.222	2197777.542	6	Frag	MDAS
R1_T1-54	3/4/2010	6123496.767	2197731.690	6	20 mm Projectile	MDEH
R1_T1-55	3/5/2010	Not Collected		3	QC Seed	QC
R1_T1-56	3/5/2010	Not Collected		3	QC Seed	QC
R1_T1-57	3/5/2010	Not Collected		1	QC Seed	QC
R1_T1-58	3/5/2010	6123623.436	2198465.949	3	20 mm Projectile	MDEH
R1_T1-59	3/9/2010	6123375.545	2198221.569	3	QC Seed (#1)	QC
R1_T1-60	3/9/2010	6123722.452	2198544.011	1	QC Seed	QC
R1_T1-61	3/15/2010	Not Collected		3	Nail Gun Primers (8)	MDEH
R1_T1-62	3/15/2010	6123948.780	2198525.987	5	Frag	MDAS
R1_T1-63	3/15/2010	6123922.596	2198536.020	1	QC Seed	QC
R1_T1-64	3/16/2010	6123417.208	2197620.670	2	Frag	MDAS

Table 3-2. Team 1 Mag-and-Flag Investigation Results for TCRA Phase I

MDAS/MDEH Item Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
R1_T1-65	3/16/2010	6123446.932	2197646.714	2	Frag	MDAS
R1_T1-66	3/16/2010	6123437.110	2197650.066	0	Bomb Fuze, Partial	MDAS
R1_T1-67	3/16/2010	6123407.644	2197660.122	0	Frag	MDAS
R1_T1-68	3/16/2010	6123371.637	2197673.506	2	20 mm Projectile	MDEH
R1_T1-69	3/16/2010	6123345.664	2197713.075	4	Detonator	MDAS
R1_T1-70	3/16/2010	6123329.208	2197706.629	0	Frag	MDAS
R1_T1-71	3/16/2010	6123355.556	2197719.569	0	Frag	MDAS
R1_T1-72	3/16/2010	6123408.042	2197715.913	0	Frag	MDAS
R1_T1-73	3/16/2010	6123352.555	2197758.974	1	Frag	MDAS
R1_T1-74	3/16/2010	6123303.398	2197769.170	3	Frag	MDAS
R1_T1-75	3/16/2010	6123293.576	2197772.522	1	Frag	MDAS
R1_T1-76	3/16/2010	6123287.059	2197779.133	1	Frag	MDAS
R1_T1-77	3/16/2010	6123342.850	2197778.735	2	Frag	MDAS
R1_T1-78	3/17/2010	6123060.287	2197734.802	3	Frag	MDAS
R1_T1-79	3/18/2010	6122883.332	2197312.689	7	40 mm Projectile (practice)	MDAS
R1_T1-80	3/18/2010	6122929.371	2197325.489	7	Frag	MDAS

Notes:

bgs = below ground surface

Frag = Munitions Fragment

MDAS = Material Documented as Safe

MDEH = Material Documented as Explosive Hazard

mm = millimeter

QC = Quality Control

Total MDEH:	15
Total MDAS:	48
Total QC:	17

Table 3-3. Team 2 Mag-and-Flag Investigation Results for TCRA Phase I

MDAS/MDEH Item Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
R1_T2-1	2/10/2010	6124222.674	2198274.604	0	Frag	MDAS
R1_T2-2	2/10/2010	6124111.233	2198295.090	0	Practice M118 (body only)	MDAS
R1_T2-3	2/10/2010	6123033.003	2197590.590	0	20 mm Projectile	MDEH
R1_T2-4	2/10/2010	6123199.579	2197477.815	0	20 mm Projectile	MDEH
R1_T2-5	2/10/2010	6123197.918	2197244.806	0	Practice M118 (body only)	MDAS
R1_T2-6	2/12/2010	6123123.647	2197875.475	0	20 mm Projectile	MDEH
R1_T2-7	2/12/2010	6123068.137	2197915.255	0	40 mm AA Round Projectile	MDEH
R1_T2-8	2/16/2010	6123109.379	2197255.284	0	M118 Practice Round	MDAS
R1_T2-9	2/16/2010	6123098.504	2197110.954	0	20 mm Projectile	MDEH
R1_T2-10	2/16/2010	6123124.197	2197032.004	0	20 mm Base	MDAS
R1_T2-11	2/16/2010	6122829.068	2197066.928	0	20 mm Projectile	MDEH
R1_T2-12	2/16/2010	6122911.769	2197158.233	0	Fuze	MDAS
R1_T2-13	2/16/2010	6123057.157	2196835.563	0	20 mm Projectile	MDEH
R1_T2-14	2/17/2010	6123031.388	2197364.145	0	Frag	MDAS
R1_T2-15	2/17/2010	6123016.201	2197075.439	0	Frag	MDAS
R1_T2-16	2/18/2010	6123578.784	2198187.300	0	20 mm Cartridge Base	MDAS
R1_T2-17	2/18/2010	6123627.636	2198134.440	1	Frag	MDAS
R1_T2-18	2/18/2010	6123663.549	2198107.928	2	Frag	MDAS
R1_T2-19	2/18/2010	6123657.032	2198114.538	1	20 mm Projectile	MDEH
R1_T2-20	2/18/2010	6123716.035	2198104.272	1	20 mm Projectile	MDEH
R1_T2-21	2/18/2010	6123628.292	2198226.330	1	20 mm Projectile	MDEH
R1_T2-22	2/18/2010	6123664.345	2198219.509	0.5	20 mm Projectile	MDEH
R1_T2-23	2/18/2010	6123638.558	2198285.333	1	20 mm Projectile	MDEH
R1_T2-24	2/18/2010	6123769.175	2198192.506	0.5	QC Seed	QC
R1_T2-25	2/19/2010	6123835.163	2198241.265	0.5	Frag	MDAS
R1_T2-26	2/19/2010	6123828.622	2198244.594	0.5	20 mm Projectile	MDEH
R1_T2-27	2/19/2010	6123855.064	2198270.661	0.5	Frag	MDAS
R1_T2-28	2/19/2010	6123727.869	2198383.155	0.5	Frag	MDAS
R1_T2-29	2/19/2010	6123878.809	2198378.797	1	Frag	MDAS
R1_T2-30	2/19/2010	6123868.847	2198362.458	0.5	QC Seed	QC
R1_T2-31	2/22/2010	6124084.533	2198232.923	0	Frag	MDAS
R1_T2-32	2/22/2010	6124022.085	2198220.241	1	Frag	MDAS
R1_T2-33	2/22/2010	6123914.043	2198257.113	1	Frag	MDAS
R1_T2-34	2/22/2010	6123864.839	2198260.746	0.5	20 mm Projectile	MDEH
R1_T2-35	2/22/2010	6123903.893	2198214.519	0.5	Frag	MDAS
R1_T2-36	2/23/2010	6124188.686	2198110.747	0.5	20 mm Cartridge Base	MDAS
R1_T2-37	2/23/2010	6124185.568	2198133.743	1	20 mm Projectile	MDEH
R1_T2-38	2/23/2010	6124166.017	2198153.575	0.5	20 mm Projectile	MDEH
R1_T2-39	2/23/2010	6124182.145	2198114.076	0.5	20 mm Projectile	MDEH
R1_T2-40	2/23/2010	6124153.124	2198186.486	0.5	20 mm Projectile (partial)	MDAS
R1_T2-41	2/23/2010	6124175.207	2198061.614	0.5	20 mm Projectile	MDEH
R1_T2-42	2/23/2010	6124132.754	2198091.454	0.5	20 mm Projectile	MDEH
R1_T2-43	2/23/2010	6124080.001	2194836.110	0.5	20 mm Projectile	MDEH
R1_T2-44	2/23/2010	6124070.540	2198111.590	0.5	20 mm Projectile	MDEH
R1_T2-45	2/23/2010	6124047.497	2198101.908	0.5	20 mm Projectile	MDEH
R1_T2-46	2/23/2010	6124102.961	2198055.565	0.5	Frag	MDAS
R1_T2-47	2/23/2010	6124109.431	2198042.391	0.5	Frag	MDAS
R1_T2-48	2/23/2010	6124050.311	2198036.249	0.5	20 mm Projectile	MDEH
R1_T2-49	2/23/2010	6124020.705	2198026.614	0.5	Frag	MDAS
R1_T2-50	2/23/2010	6123994.591	2198046.492	0.5	Frag	MDAS
R1_T2-51	2/23/2010	6123978.275	2198059.736	0.5	Frag	MDAS
R1_T2-52	2/23/2010	6123958.631	2198066.440	0.5	20 mm Projectile	MDEH
R1_T2-53	2/23/2010	6123942.058	2198043.584	0.5	Frag	MDAS
R1_T2-54	2/23/2010	6123951.880	2198040.232	0.5	Frag	MDAS
R1_T2-55	2/23/2010	6123915.640	2198020.799	0.5	Frag	MDAS
R1_T2-56	2/23/2010	6124072.886	2197980.294	0.5	Frag	MDAS
R1_T2-57	2/23/2010	6123968.102	2198013.861	0.5	20 mm Projectile	MDEH
R1_T2-58	2/23/2010	6123968.266	2198036.834	0.5	20 mm Projectile	MDEH
R1_T2-59	2/24/2010	6123919.507	2198102.821	0.5	20 mm Fuze	MDAS
R1_T2-60	2/24/2010	6123896.792	2198139.085	0	Frag	MDAS
R1_T2-61	2/24/2010	6123864.020	2198145.882	0.5	Frag	MDAS
R1_T2-62	2/24/2010	6123863.576	2198083.528	0.5	Frag	MDAS
R1_T2-63	2/24/2010	6123814.746	2198139.670	0.5	20 mm Projectile	MDEH
R1_T2-64	2/24/2010	6123808.019	2198116.744	0.5	20 mm Projectile	MDEH

Table 3-3. Team 2 Mag-and-Flag Investigation Results for TCRA Phase I

MDAS/MDEH Item Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
R1_T2-65	2/24/2010	6123840.697	2198096.819	0.5	Frag	MDAS
R1_T2-66	2/24/2010	6123886.291	2198047.264	0.5	Frag	MDAS
R1_T2-67	2/24/2010	6123856.918	2198070.447	0.5	20 mm Projectile	MDEH
R1_T2-68	2/24/2010	6123775.154	2198110.414	0.5	20 mm Projectile	MDEH
R1_T2-69	2/24/2010	6123775.411	2198146.514	0.5	QC Seed	QC
R1_T2-70	2/24/2010	6123869.741	2198027.690	1	MT Fuze	MDAS
R1_T2-71	2/24/2010	6123882.564	2197984.933	0.5	20 mm Fuze	MDAS
R1_T2-72	2/24/2010	6123791.142	2198051.224	0.5	20 mm Projectile	MDEH
R1_T2-73	2/24/2010	6123817.279	2198034.628	0.5	20 mm Projectile	MDEH
R1_T2-74	2/24/2010	6123866.202	2197991.614	0.5	20 mm Projectile	MDEH
R1_T2-75	2/24/2010	6123771.264	2198025.110	0.5	20 mm Projectile	MDEH
R1_T2-76	2/24/2010	6123774.709	2198048.060	0.5	Frag	MDAS
R1_T2-77	2/24/2010	6123775.014	2198090.723	0.5	20 mm Projectile	MDEH
R1_T2-78	2/24/2010	6123748.525	2198058.092	0.5	Frag	MDAS
R1_T2-79	2/24/2010	6123738.586	2198045.035	0.5	Frag	MDAS
R1_T2-80	2/24/2010	6123709.026	2198041.964	0.5	20 mm Projectile	MDEH
R1_T2-81	2/24/2010	6123682.631	2198022.460	0.5	Rocket Fuze	MDAS
R1_T2-82	2/24/2010	6123692.524	2198028.954	0	75 mm Base	MDAS
R1_T2-83	2/24/2010	6123679.162	2197996.229	0.5	20 mm Projectile	MDEH
R1_T2-84	2/24/2010	6123636.382	2197980.124	0.5	Frag	MDAS
R1_T2-85	2/24/2010	6123623.044	2197950.682	0.5	Frag	MDAS
R1_T2-86	2/24/2010	6123600.048	2197947.564	0.5	20 mm Projectile	MDEH
R1_T2-87	2/24/2010	6123616.551	2197960.574	0.5	Frag	MDAS
R1_T2-88	2/25/2010	6123702.533	2198051.856	1	20 mm Projectile	MDEH
R1_T2-89	2/25/2010	6123606.424	2197921.263	0.5	Frag	MDAS
R1_T2-90	2/25/2010	6123702.275	2198015.756	0.5	QC Seed	QC
R1_T2-91	2/25/2010	6123668.755	2197917.536	0.5	Frag	MDAS
R1_T2-92	2/25/2010	6123625.905	2197891.586	0.05	20 mm Projectile	MDEH
R1_T2-93	2/25/2010	6123662.145	2197911.019	1	Base Fuze	MDAS
R1_T2-94	2/25/2010	6123734.813	2197976.141	0.5	Frag	MDAS
R1_T2-95	2/25/2010	6123741.376	2197976.094	0	20 mm Projectile	MDEH
R1_T2-96	2/25/2010	6123751.222	2197976.024	0.5	20 mm Projectile	MDEH
R1_T2-97	2/25/2010	6123717.912	2197907.340	0.5	Frag	MDAS
R1_T2-98	2/25/2010	6123727.898	2197926.960	0.5	20 mm Projectile	MDEH
R1_T2-99	2/25/2010	6123727.875	2197923.678	0.5	20 mm Projectile	MDEH
R1_T2-100	2/25/2010	6123727.898	2197926.960	0.5	20 mm Projectile	MDEH
R1_T2-101	2/25/2010	6123721.335	2197927.007	0.5	20 mm Projectile	MDEH
R1_T2-102	2/25/2010	6123694.869	2197897.658	0.5	20 mm Projectile	MDEH
R1_T2-103	2/25/2010	6123797.214	2197982.260	0	Frag	MDAS
R1_T2-104	2/25/2010	6123780.173	2197893.768	0	Frag	MDAS
R1_T2-105	2/25/2010	6123793.488	2197919.929	0	Frag	MDAS
R1_T2-106	2/25/2010	6123796.840	2197929.751	0	Frag	MDAS
R1_T2-107	2/25/2010	6123800.121	2197929.727	0.5	Frag	MDAS
R1_T2-108	2/25/2010	6123813.249	2197929.634	0.5	Frag	MDAS
R1_T2-109	3/1/2010	6123610.642	2198052.512	0.5	Frag	MDAS
R1_T2-110	3/1/2010	6123610.432	2198022.975	0.5	Frag	MDAS
R1_T2-111	3/1/2010	6123636.475	2197993.252	0.5	20 mm Projectile	MDEH
R1_T2-112	3/1/2010	6123636.475	2197993.252	0.5	Frag	MDAS
R1_T2-113	3/1/2010	6123623.208	2197973.654	0.5	Nose Fuze (initially classified as Frag)	MDEH
R1_T2-114	3/1/2010	6123597.211	2198009.942	0.5	Frag	MDAS
R1_T2-115	2/26/2010	6123676.442	2198075.016	0.5	20 mm Projectile	MDEH
R1_T2-116	2/26/2010	6123591.326	2198105.161	0.5	Frag	MDAS
R1_T2-117	3/1/2010	6123499.458	2198109.098	0.5	Nose Fuze (initially classified as Frag)	MDEH
R1_T2-118	3/1/2010	6123613.386	2197977.006	0.5	20 mm Projectile	MDEH
R1_T2-119	3/1/2010	6123515.634	2198076.163	0.5	Frag	MDAS
R1_T2-120	3/1/2010	6123534.810	2198003.823	0.5	Frag	MDAS
R1_T2-121	3/1/2010	6124595.092	2198032.364	0.5	Frag	MDAS
R1_T2-122	3/1/2010	6124595.092	2198032.364	0.5	QC Seed	QC
R1_T2-123	3/1/2010	6124595.092	2198032.364	0.5	20 mm Projectile	MDEH
R1_T2-124	3/1/2010	6124595.092	2198032.364	0.5	Frag	MDAS
R1_T2-125	3/5/2010	6126759.211	2198213.850	4	Frag	MDAS
R1_T2-126	3/5/2010	6126749.295	2198204.075	0.5	Frag	MDAS
R1_T2-127	3/5/2010	6126680.401	2198207.848	0.5	QC Seed	QC
R1_T2-128	3/5/2010	6126594.652	2198149.384	4	QC Seed	QC

Table 3-3. Team 2 Mag-and-Flag Investigation Results for TCRA Phase I

MDAS/MDEH Item Number	Date Investigated	Easting	Northing	Depth (inches bgs)	Investigation Result	Category
R1_T2-129	3/5/2010	6126699.881	2198178.172	2	Frag	MDAS
R1_T2-130	3/5/2010	6126040.392	2196824.135	0.5	20 mm Projectile	MDEH
R1_T2-131	3/5/2010	6126007.808	2196857.187	0.5	Frag	MDAS
R1_T2-132	3/5/2010	6126024.147	2196847.224	0.5	Fuze Nose (initially classified as Frag)	MDEH
R1_T2-133	3/8/2010	6122657.221	2196900.773	0.5	20 mm Projectile	MDEH
R1_T2-134	3/8/2010	6122625.128	2197002.743	0.5	40 mm Aluminum Practice Round	MDAS
R1_T2-135	3/9/2010	6122717.510	2197071.005	0.5	20 mm Projectile	MDEH
R1_T2-136	3/9/2010	6122756.728	2197047.752	0.5	Frag	MDAS
R1_T2-137	3/11/2010	6122737.926	2197172.601	0.5	QC Seed	QC
R1_T2-138	3/11/2010	6122790.248	2197145.972	0.5	Frag	MDAS
R1_T2-139	3/11/2010	6122878.997	2197165.031	0.5	40 mm Aluminum Practice Round	MDAS
R1_T2-140	3/15/2010	6122931.857	2197213.884	0	M118 Practice Round	MDAS
R1_T2-141	3/15/2010	6122951.384	2197190.771	2	M100 Series Fuze, Base	MDAS
R1_T2-142	3/15/2010	6123019.881	2197131.207	1	Frag	MDAS
R1_T2-143	3/15/2010	6123006.660	2197118.173	0.5	20 mm Projectile	MDEH
R1_T2-144	3/16/2010	6122940.837	2197092.387	1	Frag	MDAS
R1_T2-145	3/16/2010	6122999.371	2197016.484	0.5	20 mm Projectile	MDEH
R1_T2-146	3/16/2010	6122920.725	2197033.455	2	40 mm Aluminum Practice	MDAS
R1_T2-147	3/16/2010	6122848.853	2197079.915	1	40 mm Aluminum Practice	MDAS
R1_T2-148	3/17/2010	6122930.032	2196957.903	0.5	Frag	MDAS
R1_T2-149	3/17/2010	6122907.036	2196954.785	0.5	20 mm Projectile	MDEH
R1_T2-150	3/17/2010	6123194.191	2197182.475	1	Frag	MDAS
R1_T2-151	3/18/2010	6123177.712	2197172.747	0.5	Frag	MDAS
R1_T2-152	3/18/2010	6123184.369	2197185.827	0.5	Frag	MDAS
R1_T2-153	3/18/2010	6123104.880	2197084.653	1	Frag	MDAS
R1_T2-154	3/18/2010	6123223.915	2197208.519	0.5	Frag	MDAS
R1_T2-155	3/18/2010	6123230.455	2197205.191	0.5	20 mm Projectile	MDEH
R1_T2-156	3/18/2010	6123157.623	2197117.097	1	Frag	MDAS
R1_T2-157	3/18/2010	6123174.032	2197116.980	0.5	20 mm Projectile	MDEH
R1_T2-158	3/18/2010	6123197.169	2197139.788	0.5	20 mm Projectile	MDEH
R1_T2-159	3/18/2010	6123190.371	2197107.017	0.5	Frag	MDAS
R1_T2-160	3/18/2010	6123236.551	2197139.508	0.5	Frag	MDAS
R1_T2-161	3/18/2010	6123180.362	2197084.115	1	Frag	MDAS
R1_T2-162	3/18/2010	6123266.789	2197237.751	2	20 mm Projectile	MDEH
R1_T2-163	3/18/2010	6123263.624	2197254.184	0.5	20 mm Projectile	MDEH
R1_T2-164	3/18/2010	6123270.235	2197260.701	0.5	20 mm Projectile	MDEH
R1_T2-165	3/18/2010	6123293.488	2197299.918	0.5	20 mm Projectile	MDEH
R1_T2-166	3/18/2010	6123263.835	2197283.720	0.5	20 mm Projectile	MDEH
R1_T2-167	3/18/2010	6123263.765	2197273.875	0.5	Frag	MDAS

Notes:

AA = Antiaircraft
bgs = below ground surface
Frag = Munitions Fragment
MDAS = Material Documented as Safe
MDEH = Material Documented as Explosive Hazard
mm = millimeter
QC = Quality Control

Total MDEH:	68
Total MDAS:	91
Total QC:	8

Table 3-4. Team 1 Mag-and-Flag Investigation Results for TCRA Phase II

MDAS/MDEH Item Number	Date Investigated	Northing	Easting	Depth (inches bgs)	Investigation Result	Category
R2_T1-1	5/24/2010	6122897.577	2196822.585	3	Frag	MDAS
R2_T1-2	5/24/2010	6122883.351	2196821.608	1	QC Seed #3	QC
R2_T1-3	5/24/2010	6122980.810	2196825.260	2	20 mm Projectile	MDEH
R2_T1-4	5/24/2010	6122921.261	2196861.621	5	QA Seed 007	QA
R2_T1-5	5/24/2010	6122943.997	2196808.177	2	20 mm Projectile 1/2	MDAS
R2_T1-6	5/24/2010	6122820.879	2196848.360	4	QC Seed #21	QC
R2_T1-7	5/25/2010	6123133.800	2196956.909	4	20 mm Residue	MDAS
R2_T1-8	5/25/2010	6123120.298	2196924.256	3	20 mm Fuze Expended	MDAS
R2_T1-9	5/25/2010	6123138.240	2196985.650	0	Frag	MDAS
R2_T1-10	5/25/2010	6123045.404	2196926.508	3	QC Seed #19	QC
R2_T1-11	5/25/2010	6123093.595	2197024.145	5	Frag (0.5" x 0.5")	MDAS
R2_T1-12	5/25/2010	6123098.986	2197041.739	6	20 mm Cartridge Base	MDAS
R2_T1-13	5/25/2010	6123068.586	2196921.299	4	40 mm Practice Projectile (horizontal, north)	MDAS
R2_T1-14	5/25/2010	6123041.163	2196921.667	3	20 mm Cartridge Base	MDAS
R2_T1-15	5/25/2010	6123020.305	2196807.806	2	20 mm Projectile (horizontal)	MDEH
R2_T1-16	5/25/2010	6123065.043	2196987.993	4	Fuze	MDAS
R2_T1-17	5/25/2010	6123060.209	2197053.833	0	20 mm Projectile	MDEH
R2_T1-18	5/25/2010	6123009.872	2196976.420	6	20 mm Projectile (horizontal)	MDEH
R2_T1-19	5/25/2010	6123065.043	2196987.993	2	Fuze	MDAS
R2_T1-20	5/26/2010	6124003.293	2197890.383	3	Fuze Remains	MDAS
R2_T1-21	5/26/2010	6123955.569	2197894.673	1	QC Seed #4	QC
R2_T1-22	5/26/2010	6123997.729	2197915.042	4	Fuze, 20 mm (empty)	MDAS
R2_T1-24	5/26/2010	6124056.423	2197977.645	2	20 mm Fuze	MDAS
R2_T1-25	5/26/2010	6124011.862	2197983.468	3	Fuze Piece (0.1" x 0.1")	MDAS
R2_T1-26	5/26/2010	6123994.580	2197956.102	3	QA Seed #3	QA
R2_T1-27	5/26/2010	6124007.324	2197967.774	1	20 mm Projectile (horizontal)	MDEH
R2_T1-28	5/26/2010	6124002.808	2197983.450	4	20 mm Projectile (horizontal)	MDEH
R2_T1-29	5/26/2010	6123942.152	2197949.941	2	20 mm Cartridge Base	MDAS
R2_T1-33	5/26/2010	6123059.925	2197137.610	2	QC Seed #5	QC
R2_T1-34	5/26/2010	6123073.046	2197090.898	4	Frag (0.5" x 0.5")	MDAS
R2_T1-35	5/26/2010	6123149.409	2197182.949	5	20 mm Projectile (horizontal)	MDEH
R2_T1-36	5/26/2010	6123134.760	2197205.007	5	Frag (0.5" x 1")	MDAS
R2_T1-23	5/27/2010	6122771.997	2197002.967	4	Pin and Spring from Grenade Fuze	MDAS
R2_T1-30	5/27/2010	6123901.206	2197968.767	1	20 mm Projectile	MDEH
R2_T1-31	5/27/2010	6123051.46	2197069.649	0.5	QC Seed #7	QC
R2_T1-32	5/27/2010	6123072.207	2197182.491	0	Fuze weight	MDAS
R2_T1-37	5/27/2010	6123079.366	2197193.123	4	QA Seed #06	QA
R2_T1-38	5/28/2010	6122992.303	2197239.479	2	Frag (1" x 0.5")	MDAS
R2_T1-39	5/28/2010	6123113.687	2197275.557	2	Frag	MDAS
R2_T1-40	5/28/2010	6123100.563	2197306.49	4	Frag	MDAS
R2_T1-41	5/28/2010	6123092.894	2197326.298	3	Frag (0.3" x 1")	MDAS
R2_T1-42	5/28/2010	6122954.62	2197385.892	0	Rockey Body - Simulated	MDAS
R2_T1-43	5/28/2010	Not Collected		2	QC Seed #28	QC
R2_T1-44	5/28/2010	6122861.664	2197479.418	2	QC Seed #10	QC
R2_T1-45	5/28/2010	6123082.809	2197333.091	1	Fuze Pieces	MDAS
R2_T1-46	5/26/2010	6122988.17	2197222.703	5	20 mm Projectile (horizontal)	MDEH
R2_T1-47	5/28/2010	6122965.445	2197370.406	2	Frag	MDAS
R2_T1-48	5/28/2010	6123056.519	2197196.424	0	Frag (0.5" x 0.75")	MDAS
R2_T1-49	6/1/2010	6123023.698	2197687.565	1	QC Seed #17	QC
R2_T1-50	6/1/2010	6123044.644	2197631.121	4	Fuze Part	MDAS
R2_T1-51	6/1/2010	6123011.316	2197621.476	2	QC Seed #12	QC
R2_T1-52	6/1/2010	6122863.979	2197475.944	0	20 mm Armor Piercing - QC Located	MDAS
R2_T1-53	6/2/2010	6122982.914	2197544.205	18	Frag (1" x 1.5")	MDAS
R2_T1-54	6/3/2010	6123049.204	2197561.541	6	20 mm Projectile	MDEH
R2_T1-55	6/3/2010	6123051.082	2197556.076	4	Frag (1" x 1")	MDAS
R2_T1-56	6/3/2010	6123070.698	2197571.035	6	Frag (1" x 1")	MDAS
R2_T1-57	6/3/2010	6122962.646	2197433.144	3	Frag (1.5" x 1")	MDAS
R2_T1-58	6/3/2010	6122968.277	2197429.713	2	Fuze Body (3" x 2")	MDAS
R2_T1-59	6/3/2010	6122967.795	2197428.231	1	Frag (0.5" x 0.5")	MDAS
R2_T1-60	6/3/2010	6123069.304	2197490.73	1	QA Seed #05	QA
R2_T1-61	6/3/2010	6123009.808	2197406.025	3	M118 Practice Round	MDAS
R2_T1-62	6/3/2010	6123120.955	2197536.132	2	Fuze Piece (1" x 1")	MDAS
R2_T1-63	6/4/2010	6123148.06	2197515.35	1	Frag (2" x 0.25")	MDAS
R2_T1-64	6/4/2010	6123105.6	2192493.9	0	QC Seed #16	QC

Table 3-4. Team 1 Mag-and-Flag Investigation Results for TCRA Phase II

MDAS/MDEH Item Number	Date Investigated	Northing	Easting	Depth (inches bgs)	Investigation Result	Category
R2_T1-65	6/4/2010	6123126.39	2197438.51	1	20 mm Piece	MDEH
R2_T1-66	6/4/2010	6123109.19	2197483.49	1	20 mm Projectile	MDEH
R2_T1-67	6/4/2010	6123091.83	2197433.03	0	Frag (1.5" x 0.5")	MDAS
R2_T1-68	6/4/2010	Not Collected		1	20 mm Base	MDAS
R2_T1-69	6/4/2010	Not Collected		4	20 mm Base	MDAS
R2_T1-70	6/4/2010	6123143.24	2197362.25	0	Frag (1" x 0.5")	MDAS
R2_T1-71	6/4/2010	6123103.72	2197351.74	4	20 mm Projectile	MDEH
R2_T1-72	6/4/2010	6123204.1	2197378.84	1	Frag (2" x 0.25")	MDAS
R2_T1-73	6/4/2010	6123251.4	2197397.89	5	Frag (2" x 1")	MDAS
R2_T1-74	6/4/2010	6123253.45	2197385.64	3	Frag (3" x 1.5")	MDAS
R2_T1-75	6/4/2010	6123186.06	2197325.74	8	20 mm Projectile	MDEH
R2_T1-76	6/4/2010	6123267.69	2197388.61	3	Fuze	MDAS
R2_T1-77	6/4/2010	Not Collected		1	20 mm Casing	MDAS
R2_T1-78	6/4/2010	6123152.00	2197355.22	3	20 mm Projectile	MDEH
R2_T1-79	6/4/2010	6123179.23	2197478.83	2	20 mm Base - Frag	MDAS
R2_T1-80	6/4/2010	6123218.86	2197445.26	0.5	Frag (2" x 3")	MDAS
R2_T1-81	6/4/2010	6123219.81	2197425.06	0.5	20 mm Projectile	MDEH
R2_T1-82	6/4/2010	6123168.7	2197310.63	3	Frag (3" x 1")	MDAS
R2_T1-83	6/4/2010	6123164.25	2197322.07	4	QC Seed #11	QC
R2_T1-84	6/4/2010	6123152.569	2197435.361	5	20 mm Cartridge Base	MDAS
R2_T1-85	6/4/2010	6123141.57	2197289.37	10	Frag (2" x 1")	MDAS
R2_T1-86	6/4/2010	6123155.59	2197232.55	2	Frag - Fuze	MDAS
R2_T1-87	6/8/2010	6124062.44	2198278.32	0	Grenade Fuze	MDAS
R2_T1-88	6/8/2010	6124060.00	2198287.05	2	Frag (4" x 2")	MDAS
R2_T1-89	6/8/2010	6124095.9	2198314.11	3	Grenade Fuze Piece	MDAS
R2_T1-90	6/8/2010	6124096.33	2198391.38	7	Frag (1" x 5")	MDAS
R2_T1-91	6/8/2010	6124014.77	2198349.14	1	Frag (1" x 1")	MDAS

Notes:

" = inch
x = by
bgs = below ground surface
Frag = Munitions Fragment
MDAS = Material Documented as Safe
MDEH = Material Documented as Explosive Hazard
mm = millimeter
QA = Quality Assurance
QC = Quality Control

Total MDEH:	16
Total MDAS:	59
Total QC:	12
Total QA:	4

Table 3-5. Team 2 Mag-and-Flag Investigation Results for TCRA Phase II

MDAS/MDEH Item Number	Date Investigated	Northing	Easting	Depth (inches bgs)	Investigation Result	Category
R2_T2-1	5/24/2010	6123398.797	2197451.654	1	20 mm Case Base	MDAS
R2_T2-2	5/24/2010	6123366.753	2197462.685	2	Fuze Piece	MDAS
R2_T2-3	5/24/2010	6123340.537	2197438.360	3	Frag (1" x 1")	MDAS
R2_T2-4	5/24/2010	6123310.355	2197453.734	1	Frag (1" x 2")	MDAS
R2_T2-5	5/24/2010	6123292.383	2197456.199	4	Frag (0.5" x 0.5")	MDAS
R2_T2-6	5/24/2010	6123336.961	2197499.288	2	20 mm Cartridge Base	MDAS
R2_T2-7	5/24/2010	6123355.187	2197507.290	2	QA Seed #4	QA
R2_T2-8	5/25/2010	6123306.612	2197567.487	1	20 mm Case Base	MDAS
R2_T2-9	5/25/2010	6123291.173	2197566.972	1	Frag (1" x 1")	MDAS
R2_T2-10	5/25/2010	6123302.189	2197572.489	2	QC Seed #23	QC
R2_T2-11	5/25/2010	6123275.078	2197536.952	0	Fuze Part (1" x 0.5")	MDAS
R2_T2-12	5/25/2010	6123265.698	2197516.564	1	Frag (1" x 1")	MDAS
R2_T2-13	5/25/2010	6123236.012	2197525.266	0	20 mm Projectile (horizontal, north/south)	MDEH
R2_T2-14	5/25/2010	6123227.708	2197509.602	3	20 mm Projectile (horizontal, north/south)	MDEH
R2_T2-15	5/25/2010	6123306.738	2197612.797	2	Fuze Part (0.5" x 0.5")	MDAS
R2_T2-16	5/25/2010	6123291.909	2197524.321	3	20 mm Projectile (horizontal, east/west)	MDEH
R2_T2-17	5/25/2010	6123283.524	2197491.713	0	Fuze Part (1" x 0.5")	MDAS
R2_T2-18	5/25/2010	6123291.708	2197503.332	0	Frag (1.5" x 1")	MDAS
R2_T2-19	5/25/2010	6123303.284	2197510.958	2	Frag (3" x 1.5"	MDAS
R2_T2-20	5/25/2010	6123307.634	2197453.247	2	Frag (1" x 0.25")	MDAS
R2_T2-21	5/25/2010	6123136.770	2197606.564	0	Frag (1" x 1.5")	MDAS
R2_T2-22	5/25/2010	6123153.528	2197628.781	2	QC Seed #24	QC
R2_T2-23	5/25/2010	6123183.358	2197605.002	3	Frag (2" x 3")	MDAS
R2_T2-24	5/25/2010	6123210.159	2197536.198	2	Fuze Piece	MDAS
R2_T2-25	5/26/2010	6123129.522	2197603.027	2	Frag (1" x 0.5")	MDAS
R2_T2-26	5/26/2010	6123347.071	2197627.809	1	QC Seed #29	QC
R2_T2-27	5/26/2010	6123350.358	2197617.580	2	20 mm, 1/2, nose down	MDEH
R2_T2-28	5/26/2010	6123349.360	2197632.470	1	Fuze Piece	MDAS
R2_T2-29	5/26/2010	6123374.811	2197586.007	1	20 mm Cartridge Base	MDAS
R2_T2-30	5/26/2010	6123556.684	2197577.009	1	QC Seed #1	QC
R2_T2-31	5/26/2010	6123612.213	2197607.256	0	Fuze Piece	MDAS
R2_T2-32	5/26/2010	6123625.097	2197602.513	2	Frag (0.5" x 1")	MDAS
R2_T2-33	5/26/2010	6123633.123	2197601.178	4	Fuze Piece	MDAS
R2_T2-34	5/26/2010	6123337.653	2197350.276	1	Frag	MDAS
R2_T2-35	5/26/2010	6123286.568	2197226.114	0	Fuze Piece	MDAS
R2_T2-36	5/26/2010	6123361.561	2197374.524	2	20 mm Projectile (horizontal, north/south)	MDEH
R2_T2-37	5/27/2010	6123285.276	2197769.165	2	QC Seed #6	QC
R2_T2-38	5/27/2010	6123254.638	2197773.219	3	20 mm Cartridge Base	MDAS
R2_T2-39	5/27/2010	6123231.150	2197842.779	1	QC Seed #30	QC
R2_T2-40	5/27/2010	6123314.336	2197642.986	0	20 mm Cartridge Base	MDAS
R2_T2-41	5/27/2010	6123772.979	2197662.775	2	Fuze Piece	MDAS
R2_T2-42	5/27/2010	6123686.691	2197612.892	0	Frag (1" x 0.5")	MDAS
R2_T2-43	5/27/2010	6123664.520	2197597.507	0	20 mm Cartridge Base	MDAS
R2_T2-44	5/27/2010	6123729.926	2197661.285	2	Fuze Piece	MDAS
R2_T2-45	5/27/2010	6123648.484	2197630.677	2	20 mm Cartridge Base	MDAS
R2_T2-46	5/27/2010	6123678.286	2197642.635	1	20 mm Projectile (east/west)	MDEH
R2_T2-47	5/27/2010	6123682.244	2197645.881	2	20 mm Cartridge Base	MDAS
R2_T2-48	5/27/2010	6123701.587	2197677.974	8	20 mm Projectile (east/west)	MDEH
R2_T2-49	5/27/2010	6123774.738	2197702.272	3	20 mm Piece	MDEH
R2_T2-50	5/27/2010	6123801.591	2197714.757	3	Fuze Piece	MDAS
R2_T2-51	5/28/2010	6123686.092	2197682.821	2	Frag	MDAS
R2_T2-52	5/28/2010	6123711.685	2197696.000	2	Frag	MDAS
R2_T2-53	5/28/2010	6123737.650	2197723.466	4	Frag	MDAS
R2_T2-54	5/28/2010	6123728.108	2197716.977	1	QC Seed #2	QC
R2_T2-55	5/28/2010	6123768.055	2197722.218	2	Frag	MDAS
R2_T2-56	5/28/2010	6123793.278	2197728.934	2	Frag	MDAS
R2_T2-57	5/28/2010	6123735.495	2197745.026	2	Frag	MDAS
R2_T2-58	5/28/2010	6123675.953	2197739.085	8	20 mm Projectile (horizontal, north/south)	MDEH
R2_T2-59	5/28/2010	6123705.248	2197747.471	2	20 mm Cartridge Base	MDAS
R2_T2-60	5/28/2010	6123708.894	2197759.090	3	Frag (1" x 2")	MDAS
R2_T2-61	5/28/2010	6123724.158	2197756.956	1	Frag	MDAS
R2_T2-62	5/28/2010	6123728.392	2197763.095	1	20 mm Cartridge Base	MDAS
R2_T2-63	5/28/2010	6123731.937	2197761.274	0	Fuze Piece	MDAS
R2_T2-64	5/28/2010	6123737.876	2197773.412	2	Frag	MDAS

Table 3-5. Team 2 Mag-and-Flag Investigation Results for TCRA Phase II

MDAS/MDEH Item Number	Date Investigated	Northing	Easting	Depth (inches bgs)	Investigation Result	Category
R2_T2-65	5/28/2010	6123710.963	2197766.973	2	Fuze Piece	MDAS
R2_T2-66	5/28/2010	6123705.432	2197767.166	2	Fuze Piece	MDAS
R2_T2-67	5/28/2010	6123706.479	2197771.208	4	Frag	MDAS
R2_T2-68	5/28/2010	6123696.909	2197765.258	1	Fuze Piece	MDAS
R2_T2-69	5/28/2010	6123684.213	2197765.941	2	20 mm (1/2)	MDAS
R2_T2-70	5/28/2010	6123677.688	2197754.519	1	Fuze Piece & Rotating Band	MDAS
R2_T2-71	5/28/2010	6123591.620	2197861.080	1	QC Seed #18	QC
R2_T2-72	5/28/2010	6123595.499	2197872.956	1	20 mm Cartridge Base	MDAS
R2_T2-73	5/28/2010	6123576.113	2197898.882	1	Fuze Piece	MDAS
R2_T2-74	5/28/2010	6123572.287	2197908.306	1	Frag (1" x 0.5")	MDAS
R2_T2-75	5/28/2010	6123602.091	2197823.615	1	Fuze Piece	MDAS
R2_T2-76	5/28/2010	6123669.078	2197777.824	1	20 mm Cartridge Base	MDAS
R2_T2-77	6/1/2010	6123512.595	2197892.248	1	Fuze Piece	MDAS
R2_T2-78	6/1/2010	6123448.786	2197940.183	2	Frag (1" x 1")	MDAS
R2_T2-79	6/1/2010	6123473.409	2198004.674	2	QC Seed #20	QC
R2_T2-80	6/1/2010	6123419.153	2198010.302	2	20 mm Projectile (1/2)	MDEH
R2_T2-81	6/1/2010	6123367.299	2198065.789	2	QC Seed #13	QC
R2_T2-82	6/1/2010	6123403.552	2198045.883	5	20 mm (horizontal, north/south)	MDEH
R2_T2-83	6/2/2010	6123156.874	2197952.147	2	Frag (1" x 1")	MDAS
R2_T2-84	6/2/2010	6123312.437	2197849.662	6	Frag (1" x 1")	MDAS
R2_T2-85	6/2/2010	6123836.872	2197694.092	8	20 mm Cartridge Base	MDAS
R2_T2-86	6/2/2010	6123861.954	2197729.554	3	20 mm Cartridge Base	MDAS
R2_T2-87	6/2/2010	6123912.532	2197764.675	2	Frag	MDAS
R2_T2-88	6/2/2010	6123966.179	2197814.449	2	Frag	MDAS
R2_T2-89	6/2/2010	6123945.105	2197813.066	6	20 mm Cartridge Base (x2)	MDAS
R2_T2-90	6/3/2010	6123901.922	2197811.316	1	QC Seed #15	QC
R2_T2-91	6/3/2010	6123890.360	2197821.774	1	Fuze Piece	MDAS
R2_T2-92	6/3/2010	6123823.057	2197746.733	4	Fuze Piece	MDAS
R2_T2-93	6/3/2010	6123814.506	2197727.520	4	Fuze Piece	MDAS
R2_T2-94	6/3/2010	6123963.105	2198358.887	1	20 mm Armor Piercing	MDAS
R2_T2-95	6/3/2010	6123978.691	2198388.933	1	QC Seed #26	QC
R2_T2-96	6/3/2010	6123880.305	2198361.258	1	QC Seed #14	QC
R2_T2-97	6/3/2010	6123840.261	2198368.013	1	QA Seed #02	QA
R2_T2-98	6/4/2010	6123698.48	2198395.489	4	20 mm Projectile	MDEH
R2_T2-99	6/4/2010	6123709.311	2198376.681	4	QC Seed #09	QC
R2_T2-100	6/4/2010	6123551.704	2198310.963	1	QC Seed #08	QC
R2_T2-101	6/4/2010	6123654.755	2198175.505	1	QC Seed #27	QC
R2_T2-102	6/4/2010	6123683.585	2198153.137	1	Fuze Piece	MDAS
R2_T2-103	6/7/2010	6123302.260	2197367.200	1	20 mm Projectile	MDEH
R2_T2-104	6/7/2010	6123285.440	2197341.600	0	Munitions Debris	MDAS
R2_T2-105	6/7/2010	6123234.050	2197302.320	3	Frag	MDAS
R2_T2-106	6/7/2010	6123222.970	2197328.170	1	20 mm Cartridge Base	MDAS
R2_T2-107	6/7/2010	6124102.530	2197966.287	3	20 mm Projectile	MDEH
R2_T2-108	6/7/2010	6124085.390	2197953.830	3	Fuze Piece	MDAS
R2_T2-109	6/7/2010	6124159.510	2198034.500	3	Frag	MDAS
R2_T2-110	6/7/2010	6124195.400	2198083.460	1	Frag (1" x 1")	MDAS
R2_T2-111	6/7/2010	6124223.760	2198122.890	1	Frag (1" x 1")	MDAS
R2_T2-112	6/7/2010	6124222.570	2198119.430	2	Fuze	MDAS
R2_T2-113	6/7/2010	6124181.080	2198203.100	1	QC Seed #22	QC
R2_T2-114	6/7/2010	6124160.630	2198192.090	1	Fuze Piece	MDAS
R2_T2-115	6/7/2010	6124191.100	2198234.630	8	QA Seed #1	QA
R2_T2-116	6/7/2010	6124202.289	219821.735	3	20 mm Projectile	MDEH
R2_T2-117	6/7/2010	6124203.109	2198330.263	0	Frag (2" X 2")	MDAS
R2_T2-118	6/7/2010	6124076.494	2198314.115	0	QC Seed #25	QC

Notes:

" = inch
x = by
bgs = below ground surface
Frag = Munitions Fragment
MDAS = Material Documented as Safe
MDEH = Material Documented as Explosive Hazard
mm = millimeter
QA = Quality Assurance
QC = Quality Control

Total MDEH:	15
Total MDAS:	82
Total QC:	18
Total QA:	3

Figures

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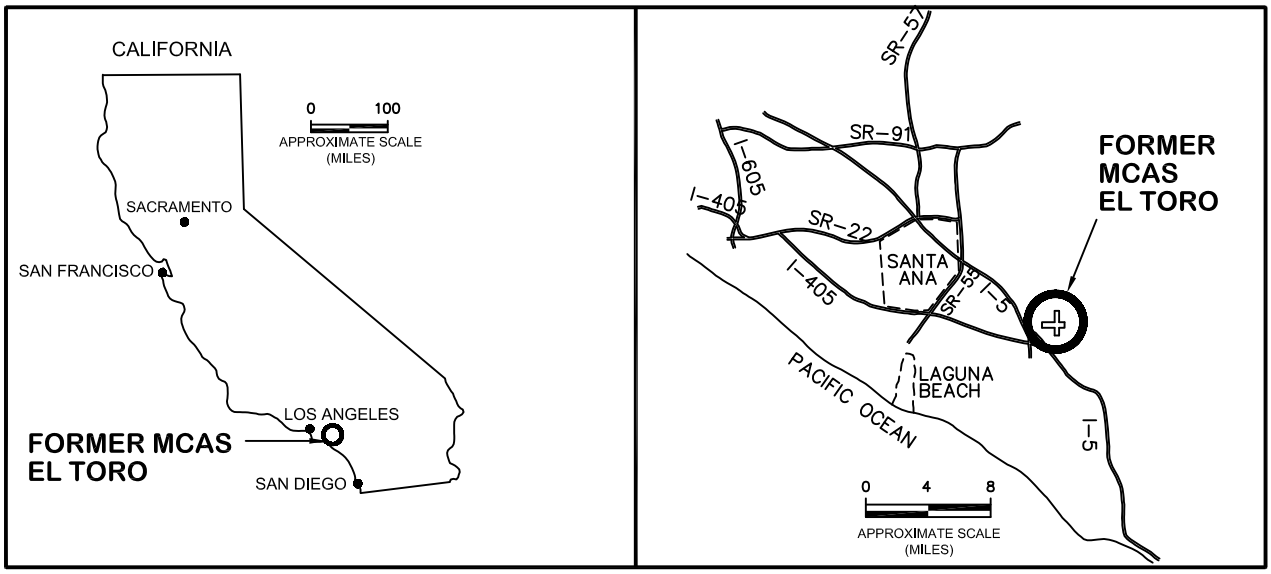
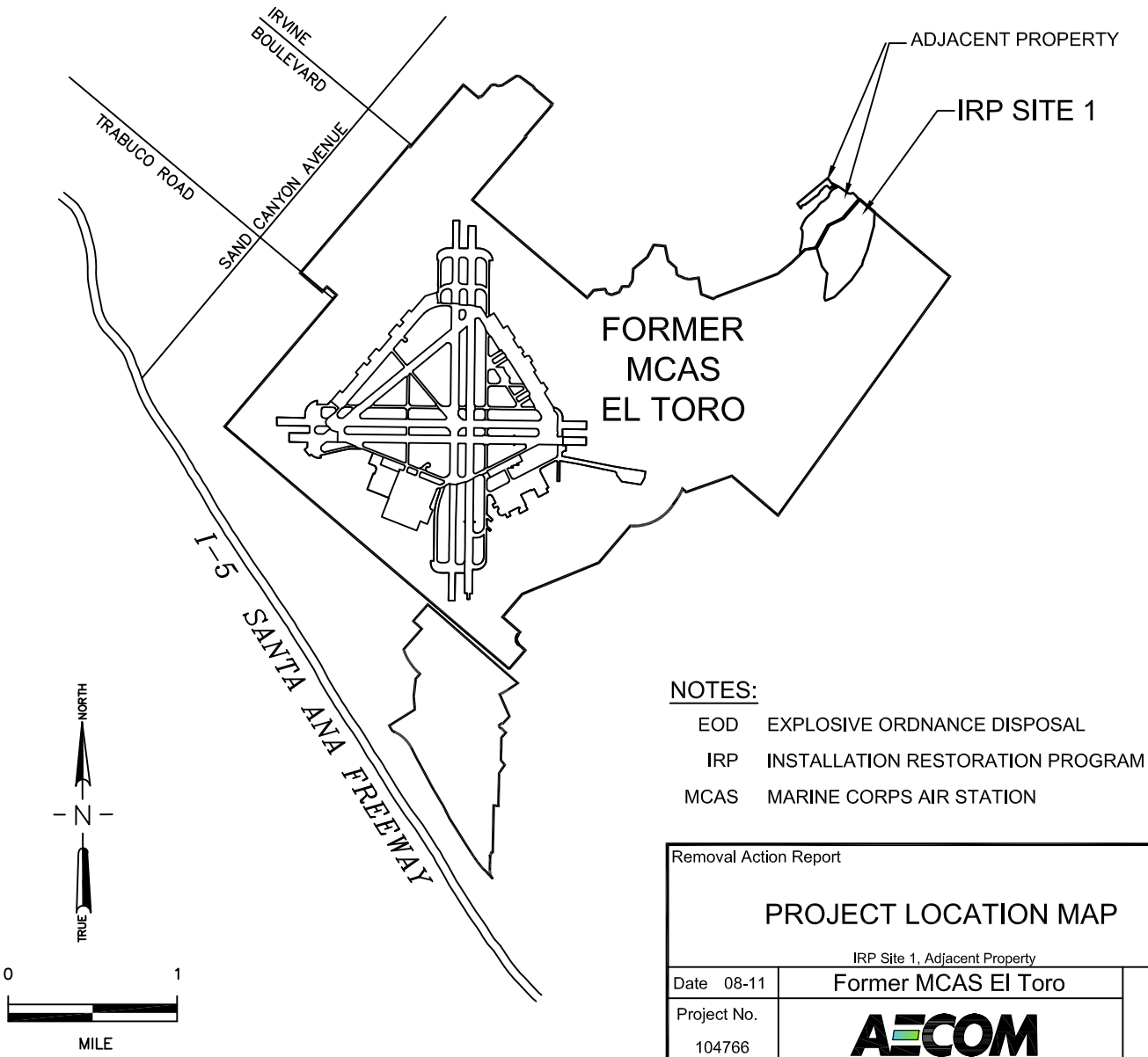




NOTES:

EOD	EXPLOSIVE ORDNANCE DISPOSAL
IRP	INSTALLATION RESTORATION PROGRAM
MCAS	MARINE CORPS AIR STATION

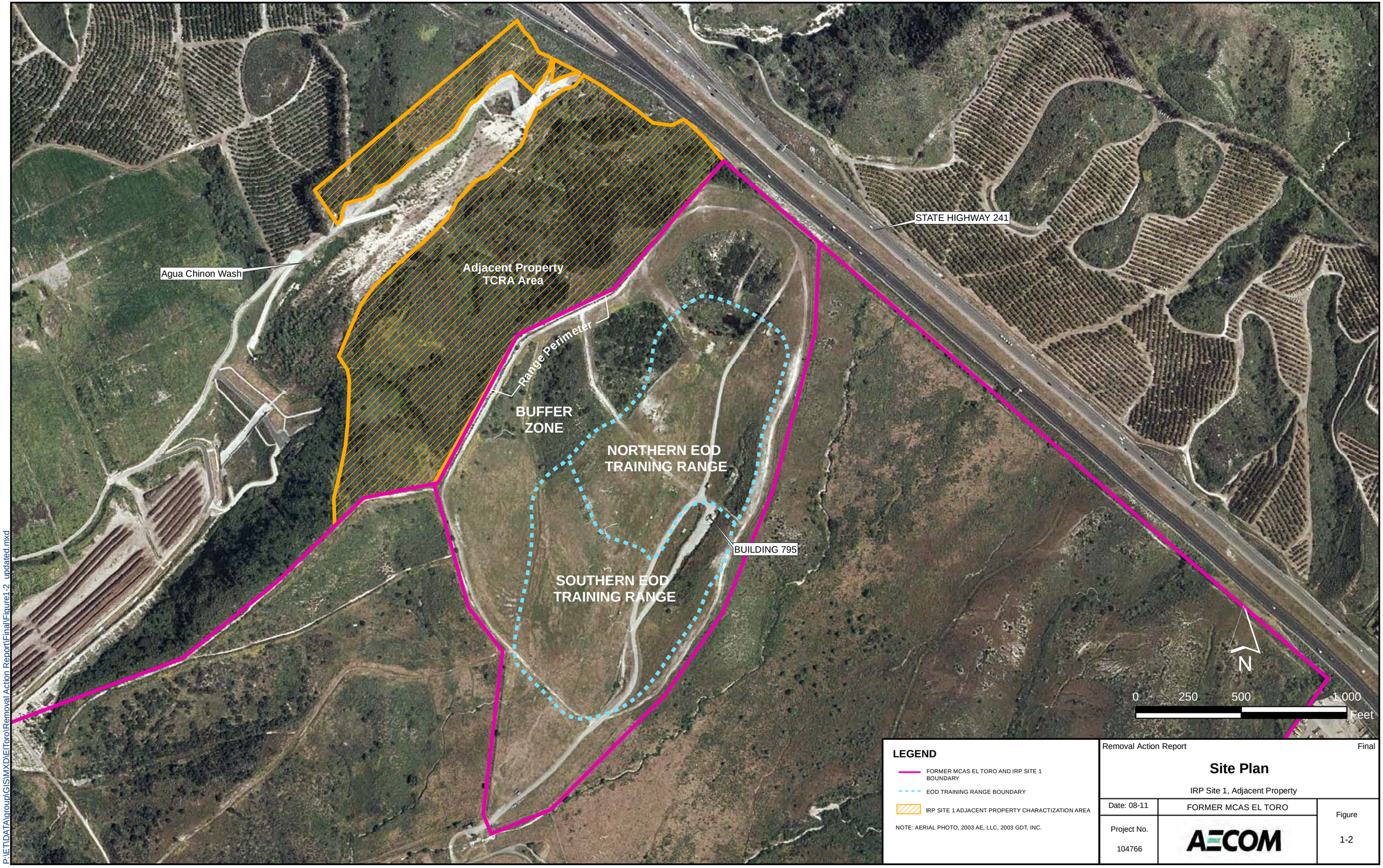
Removal Action Report — Final

PROJECT LOCATION MAP

IRP Site 1, Adjacent Property

Date 08-11	Former MCAS El Toro	Figure
Project No. 104766	AECOM	1-1

File: W:\104766\cad\Site 1 Removal Action Report\Final\FIGURE 1-1.dwg Time: Aug 17, 2011 - 3:04pm



LEGEND

- FORMER MCAS EL TORO AND IRP SITE 1 BOUNDARY
- EOD TRAINING RANGE BOUNDARY
- IRP SITE 1 ADJACENT PROPERTY CHARACTIZATION AREA

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

Removal Action Report — Final

Site Plan

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	1-2

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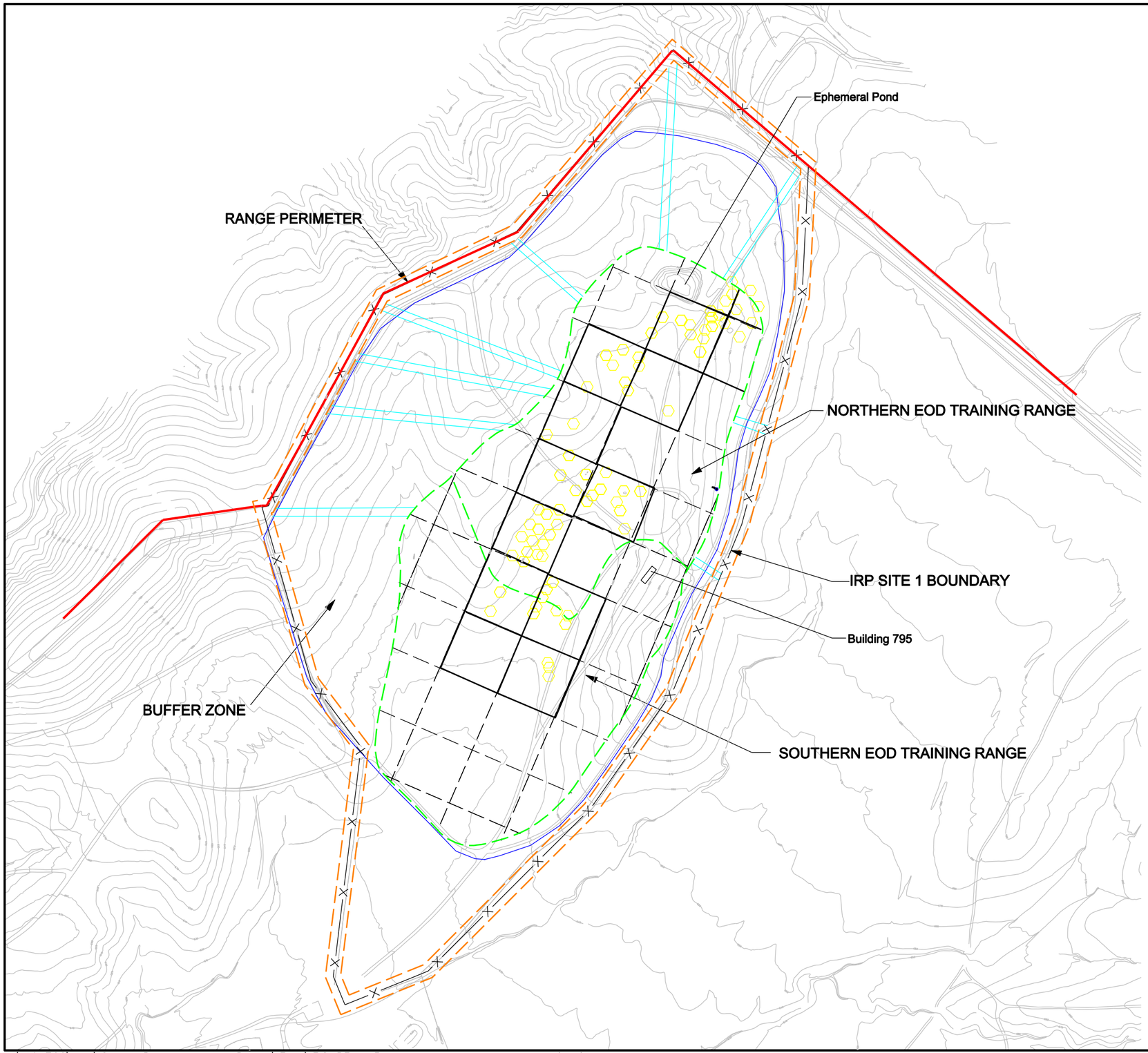


LEGEND

- MCAS EL TORO BOUNDARY
- SECURITY FENCE/IRP SITE 1 BOUNDARY
- EOD TRAINING RANGE BOUNDARY
- SUFACE AND GEOPHYSICAL SURVEY PATHS INSIDE AND OUTSIDE RANGE PERIMETER
- 25 FEET WIDE RADIAL LANES SURFACE CLEARED AND MEANDERING SURFACE SURVEY THROUGH VEGETATION IN RANGE PERIMETER OUTSIDE SITE BOUNDARY
- 1-ACRE GRID SELECTED FOR INTRUSIVE INVESTIGATION OF ALL ANOMALIES WITHIN GRID (ONLY GRIDS SHOWN WITH SOLID LINES WERE INTRUSIVELY SAMPLED FOR MEC)
- POTHOLE LOCATION

EOD	EXPLOSIVE ORDNANCE DISPOSAL
IRP	INSTALLATION RESTORATION PROGRAM
MCAS	MARINE CORPS AIR STATION
MEC	MUNITIONS AND EXPLOSIVES OF CONCERN

NORTH

0 350 FEET

SCALE: 1" = 350'

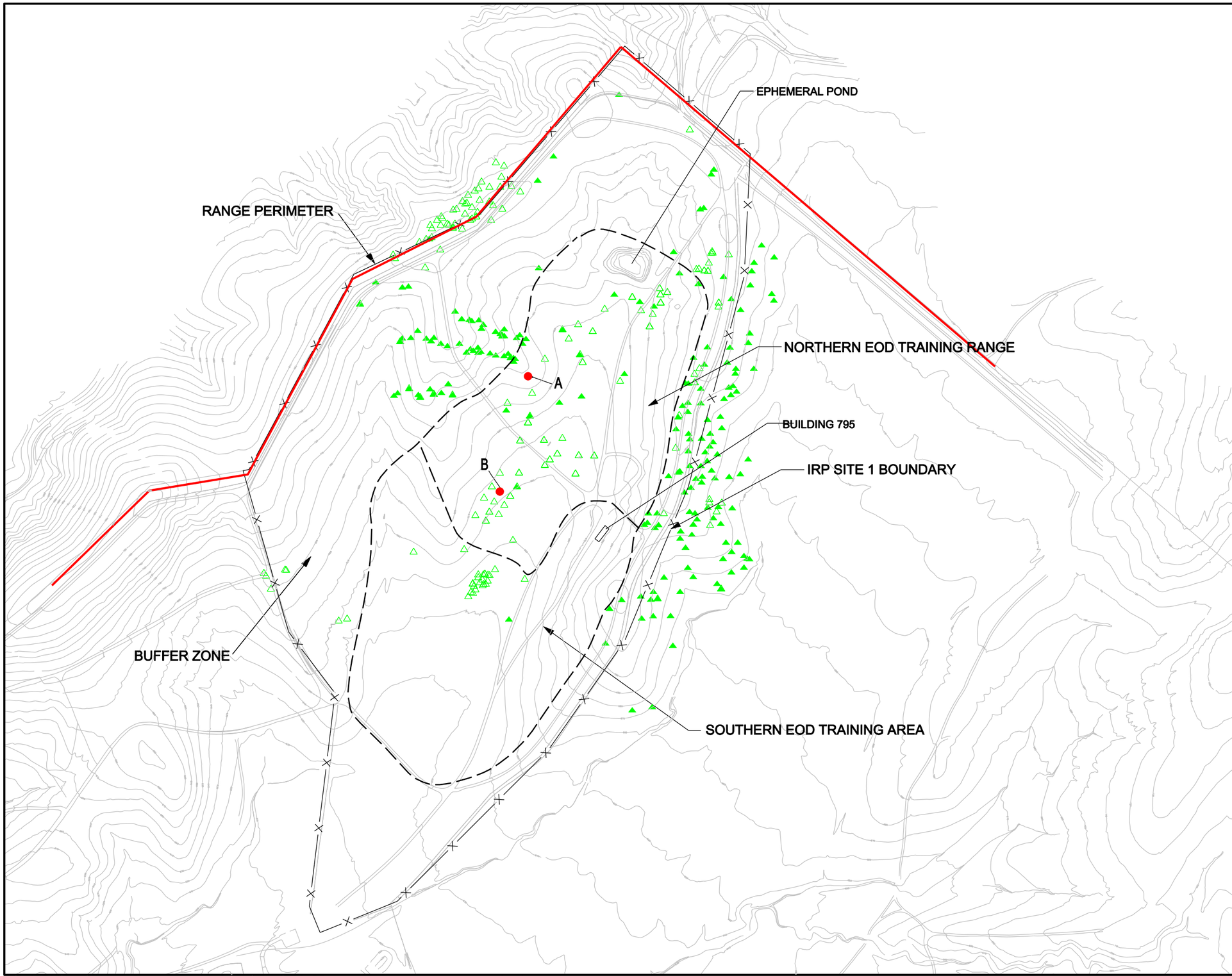
Removal Action Report — Final

MEC INVESTIGATION AREAS - 2002

IRP Site 1, Adjacent Property

Date 08-11	Former MCAS El Toro	Figure
Project No. 104766	AECOM	1-3

W:\104766\cad\Site 1 Removal Action Report\Final\FIGURE 1-3.dgn 8/17/2011 3:12:37 PM



LEGEND

- MCAS EL TORO BOUNDARY
- SECURITY FENCE/IRP SITE 1 BOUNDARY
- EOD TRAINING RANGE BOUNDARY
- MEC RECOVERED DURING FIELD INVESTIGATION
- SURFACE MD RECOVERED DURING FIELD INVESTIGATION
- SUBSURFACE MD RECOVERED DURING FIELD INVESTIGATION
- A — MEC: FLEX LINEAR-SHAPED CHARGE (DEPTH: SURFACE)
- B — MEC: 40mm CASINGS WITH PRIMER (2) AND 1/4-POUNDS OF SMOKELESS POWDER (DEPTH: 12 INCHES BELOW GROUND SURFACE)

NOTES:

1. MULTIPLE MD ITEMS AT ONE LOCATION ARE SHOWN AS ONE POINT

EOD	EXPLOSIVE ORDNANCE DISPOSAL
IRP	INSTALLATION RESTORATION PROGRAM
MCAS	MARINE CORPS AIR STATION
MD	MUNITIONS DEBRIS
MEC	MUNITIONS AND EXPLOSIVES OF CONCERN
mm	MILLIMETER

NORTH

0 350 FEET

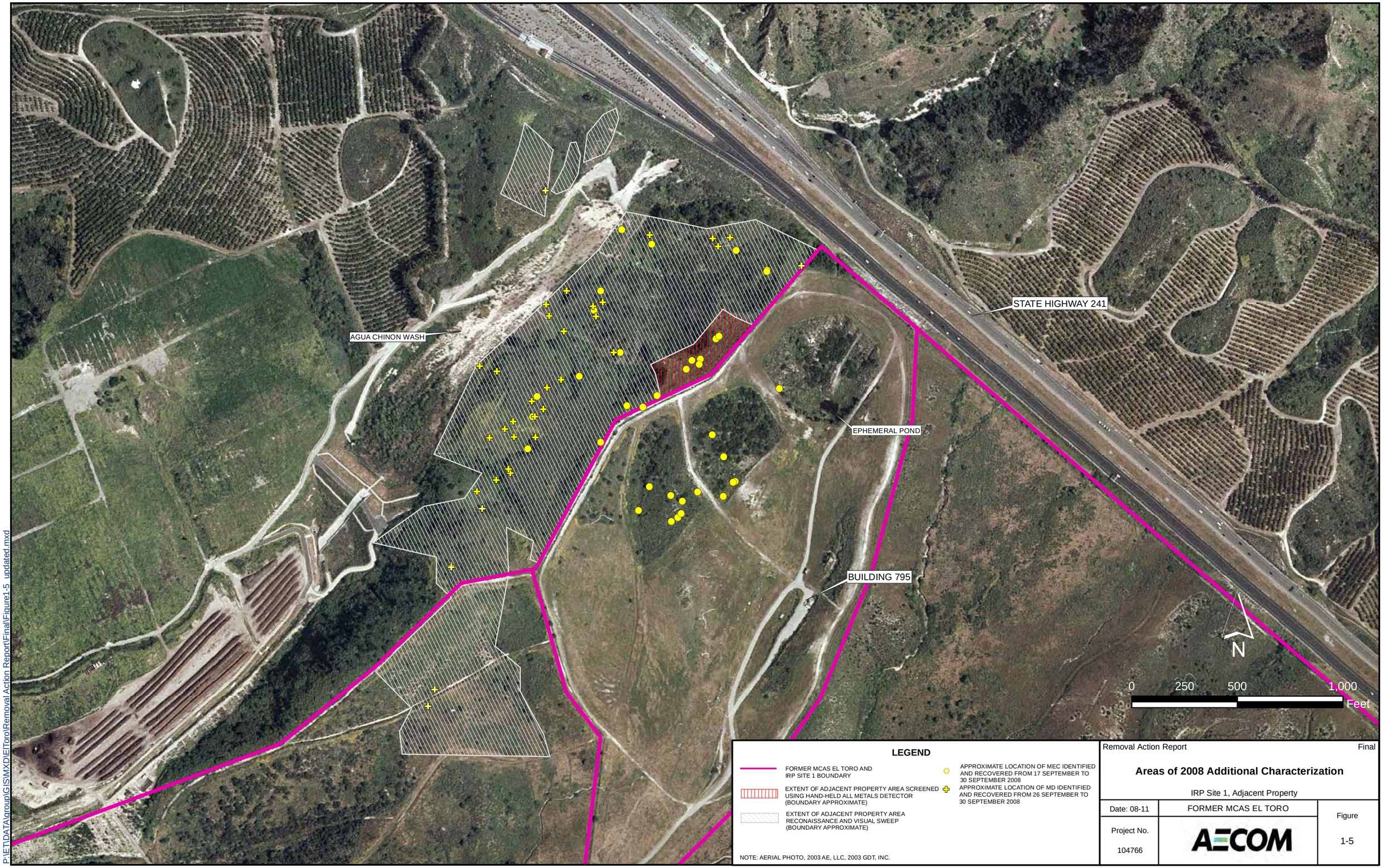
SCALE: 1"= 350'

Removal Action Report — Final

MEC INVESTIGATION RESULTS - 2002

IRP Site 1, Adjacent Property

Date 08-11	Former MCAS El Toro	Figure
Project No. 104766	AECOM	1-4



Removal Action Report — Final

Areas of 2008 Additional Characterization

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	1-5

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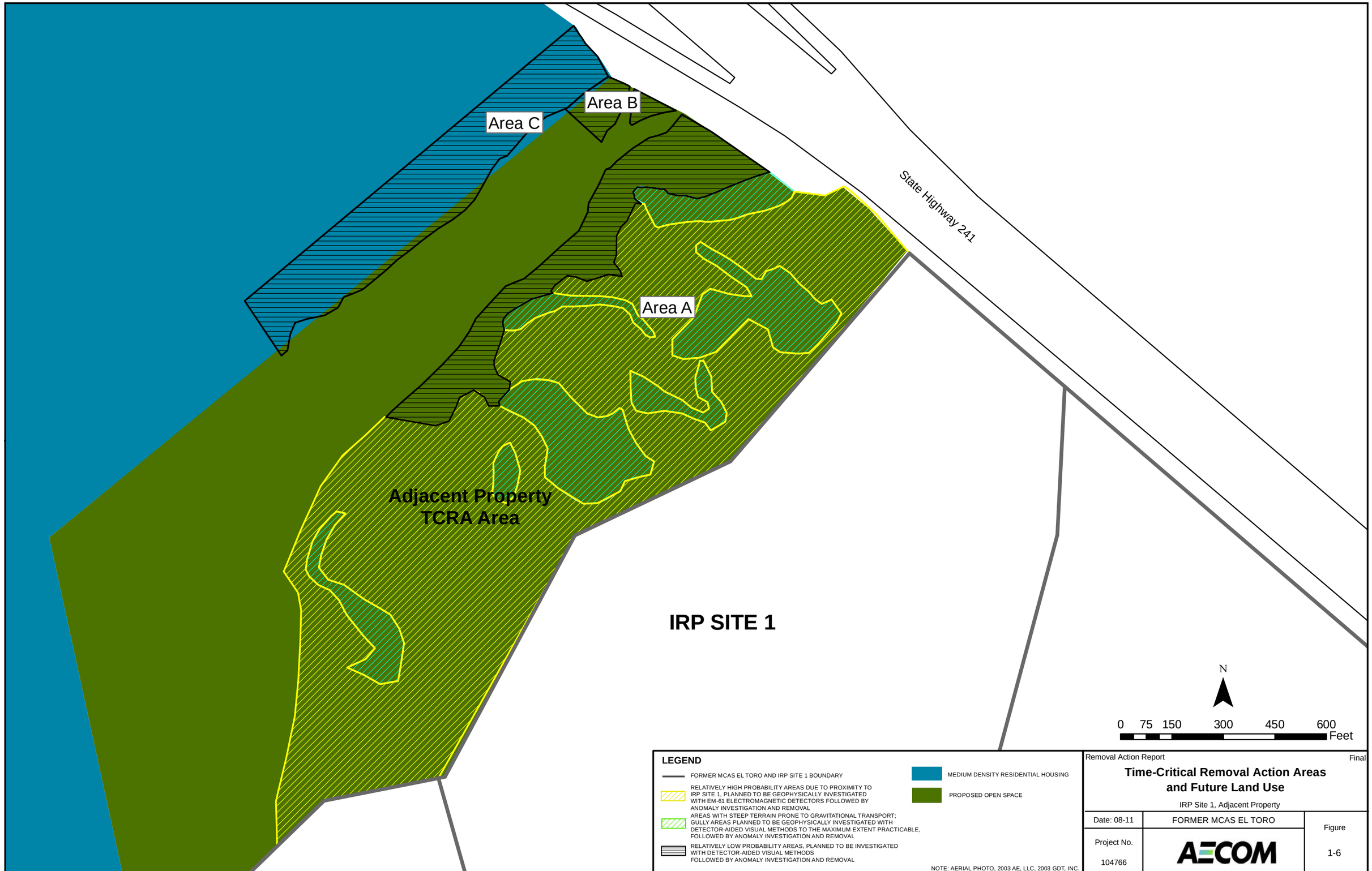

Removal Action Report — Final

Time-Critical Removal Action Areas and Future Land Use

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	1-6

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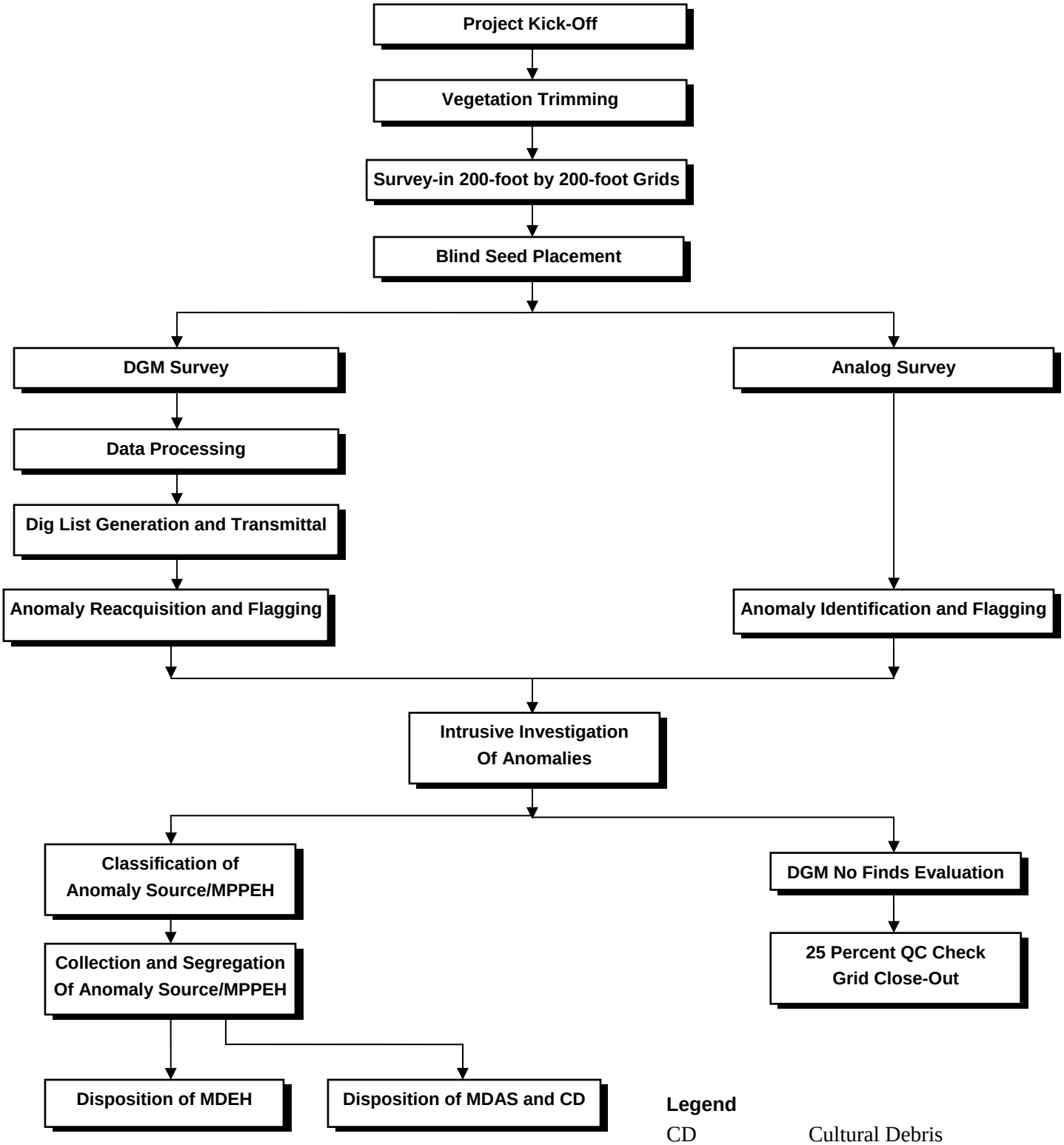
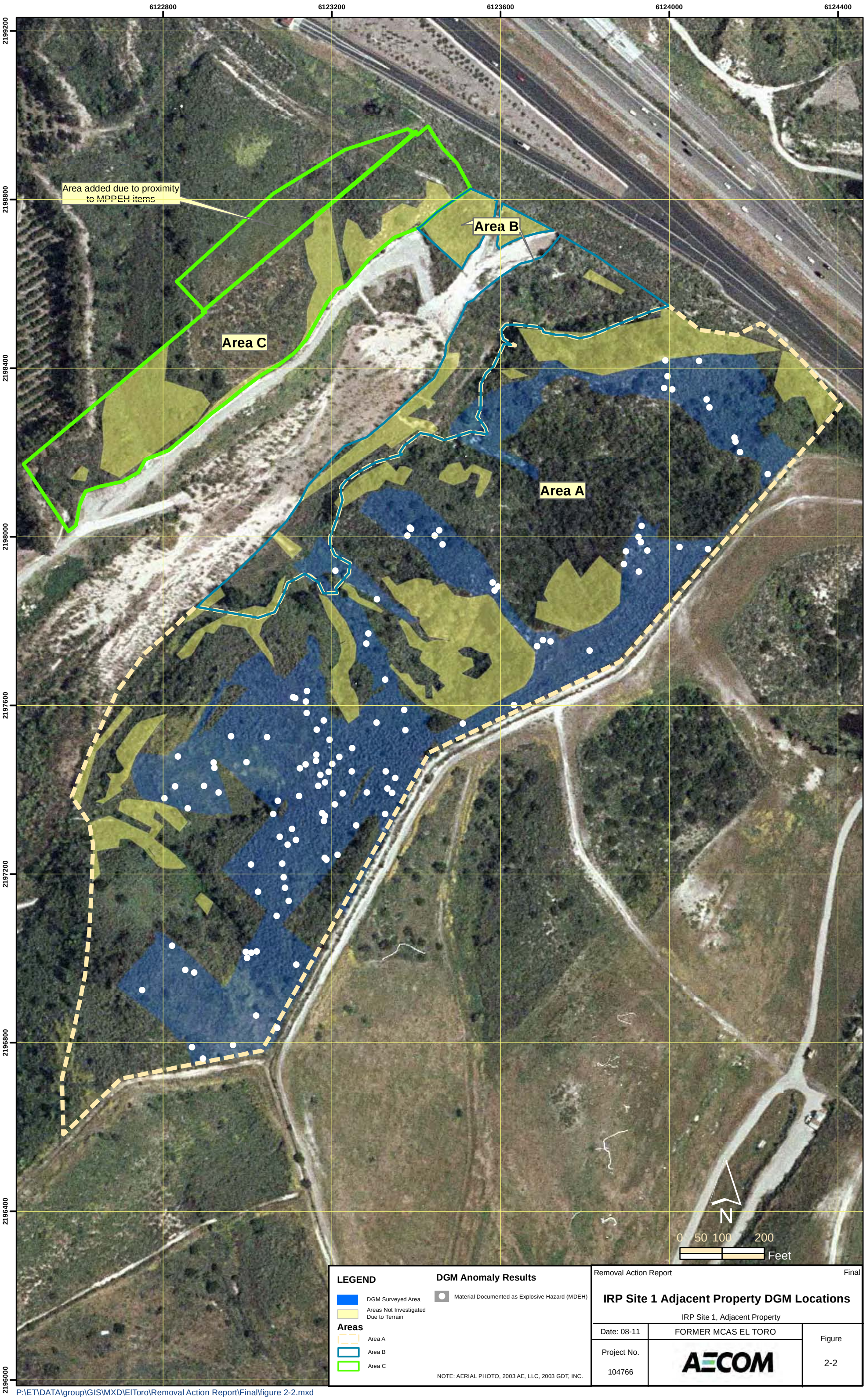


Legend

CD	Cultural Debris
DGM	Digital Geophysical Mapping
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MPPEH	Material Potentially Presenting an Explosive Hazsard
QC	Quality Control

Figure 2-1: TCRA Work Flow, Phase I



LEGEND

DGM Surveyed Area

Areas Not Investigated Due to Terrain

Areas

Area A

Area B

Area C

DGM Anomaly Results

Material Documented as Explosive Hazard (MDEH)

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

Removal Action Report — Final

IRP Site 1 Adjacent Property DGM Locations

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	2-2

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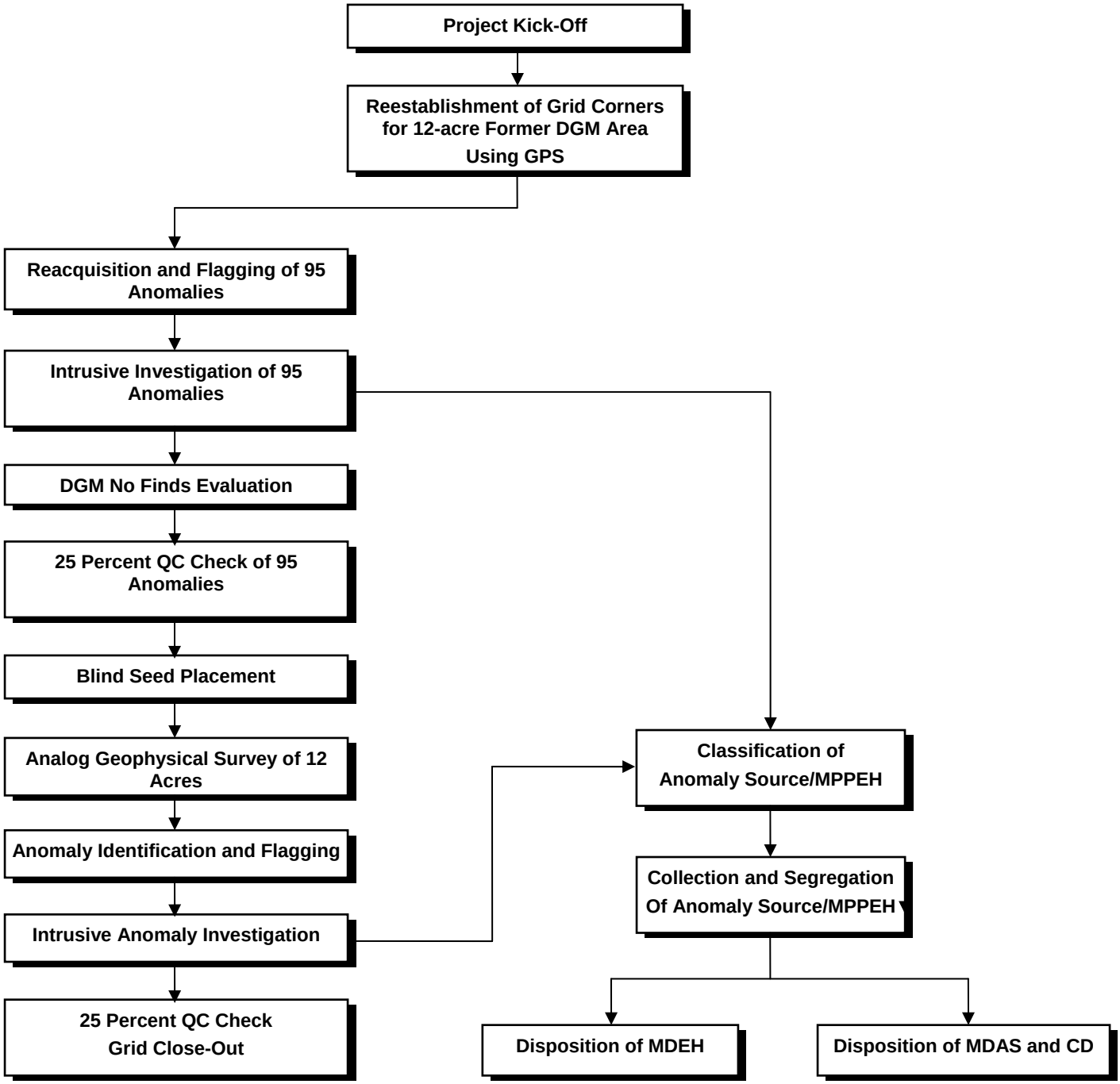
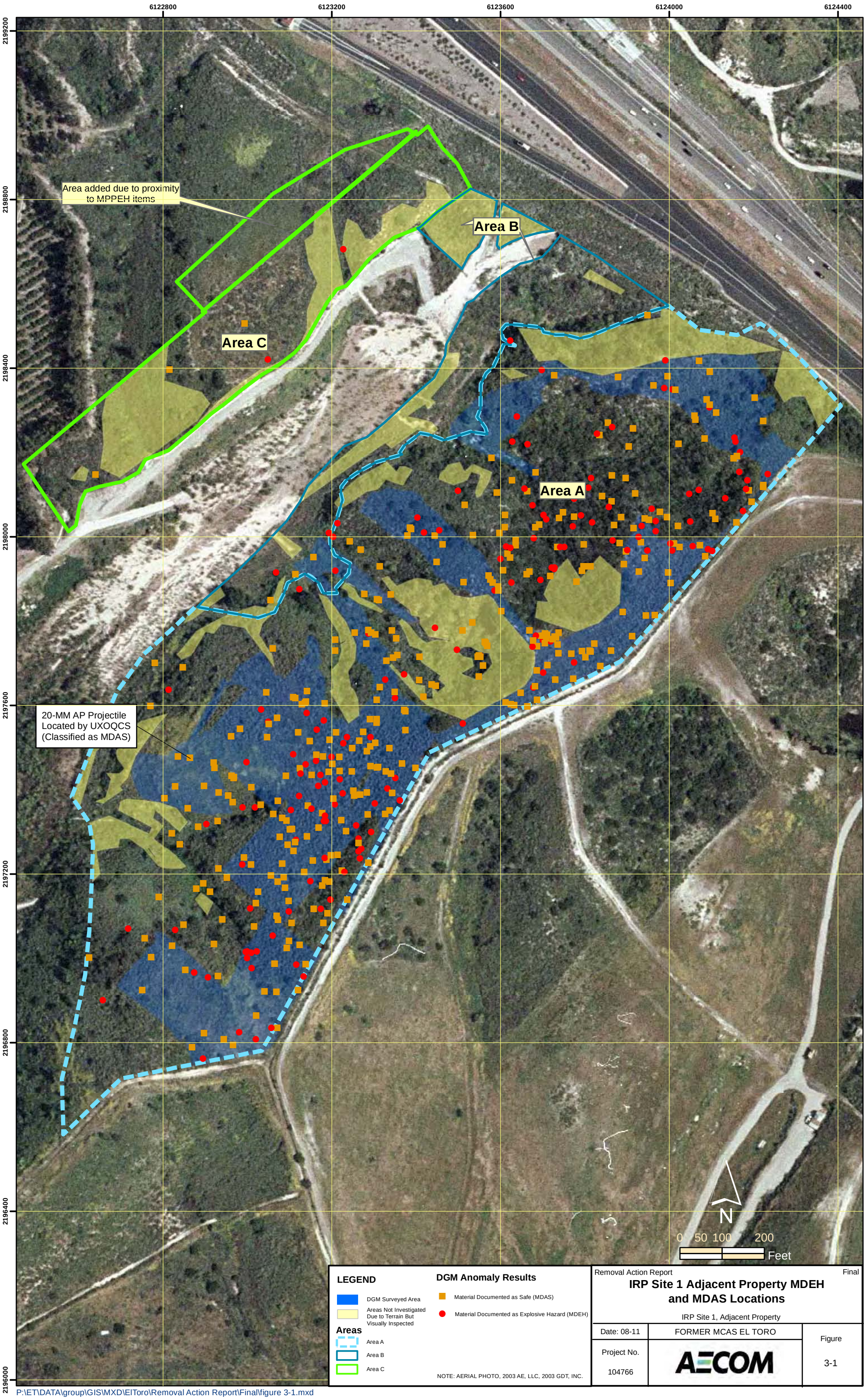


Legend

CD	Cultural Debris
DGM	Digital Geophysical Mapping
GPS	Global Positioning System
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
MPPEH	Material Potentially Presenting an Explosive Hazsard
QC	Quality Control

Figure 2-3: TCRA Work Flow, Phase II



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Appendix A
Explosives Safety Submission Concurrence and Approval Letters

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UNITED STATES MARINE CORPS
MARINE CORPS SYSTEMS COMMAND
2200 LESTER STREET
QUANTICO, VA 22134-6050

IN REPLY REFER TO:
8020
204
25 Jan 10

From: Commander
To: Department of Defense Explosive Safety Board, 2461 Eisenhower Avenue, Alexandria, VA 22331-0600

Subj: TIME CRITICAL REMOVAL ACTION INSTALLATION RESTORATION PROGRAM SITE 1 EXPLOSIVE ORDNANCE TRAINING RANGE FORMER MARINE CORPS AIR STATION EL TORO CALIFORNIA

Encl: El Toro TCRA ESS Nov 09

1. Forwarded, recommending approval.

2. Upon completion of the munitions response a separate Explosive Safety Submission (ESS) will be prepared and submitted. This ESS will address the results of the munitions response, stakeholder comments, and recommendations for future land use.

3. Point of contact for this matter is Mr. James Taylor, Environmental and Explosives Team, Program Manager for Ammunition, Marine Corps Systems Command at DSN 378-8781, commercial (703) 432-8781, email: james.t.taylor1@usmc.mil

MAZZA.JERRY.L.
Digitally Signed on 1/25/2010 Cert# 1027937086
JERRY L. MAZZA
By direction

Copy To:
Staff Sec

DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD
2461 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22331-0600

JAN 25 2010

DDESB-PE

MEMORANDUM FOR COMMANDER, MARINE CORPS SYSTEMS COMMAND
(ATTENTION: PM AMMO)

SUBJECT: DDESB Approval of Time Critical Removal Action Explosives Safety Submission, Adjacent Property, Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station, El Toro, CA

References: (a) Marine Corps Systems Command ltr 8020 204 of 5 Jan 10, Subject: Time Critical Removal Action Installation Restoration Program Site 1 Explosive Ordnance Training Range Former Marine Corps Air Station El Toro California

(b) Email from Mr. Jim Taylor (MARCORSYSCOM) to Mr. Tony Dunay (DDESB), dated 21 January 2010, Subject: RE: El Toro TCRA

(c) DoD 6055.09-STD, DoD Ammunition and Explosives Safety Standards, 29 February 2008, Incorporating Change 2, 21 August 2009

(d) DDESB-PE Memorandum of 20 October 2009, Subject: DDESB Receipt of Final After Action Report for Munitions Characterization Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station, El Toro, CA

(e) DDESB TP-15, Approved Protective Construction, Version 2.0, June 2004

The Department of Defense Explosives Safety Board (DDESB) Staff has reviewed the subject time critical removal action explosives safety submission (TCRA-ESS) forwarded by reference (a), as clarified by reference (b), against the requirements of references (c) and (d). Based on the information provided, approval is granted for the TCRA-ESS for the removal and treatment of material potentially presenting an explosive hazard (MPPEH) and munitions and explosives of concern (MEC) at Adjacent Property, Installation Restoration Program Site 1, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station, El Toro, CA. This approval is based on the following:

a. The efforts addressed in this TCRA-ESS involve manual operations, mechanized operations with anomaly avoidance and intentional detonations to reduce the immediate explosives hazards to the public and quantify those explosives hazards remaining.

b. The primary munition with the greatest fragmentation distance (MGFD) is the 20mm M56A4 Projectile; the minimum separation distance (MSD) for teams is 13 feet (ft) based on K40 of the MGFD; the MSD for nonessential personnel from unintentional detonations is 61 ft based on the hazardous fragment distance (HFD) of the MGFD; and the MSD for intentional single in-grid detonations using sandbags per ref (e) for nonessential personnel is 200 ft.

c. The contingency MGFD is the M39 Submunition; the MSD for teams is 16 ft based on K40 of the MGFD; the MSD for nonessential personnel from unintentional detonations is 184 ft based on Marine Corps requirement to use the MFD of the MGFD; and the MSD for intentional single in-grid detonations using sandbags per ref (d) for nonessential personnel is 200 ft.

d. The use of the Miniature Open Front Barricade (MOFB) is authorized as an engineering control for unintentional detonations operations involving the primary MGFD provided the Marine Corps ensures usage per reference (e), paragraph C6.2.4.8. The MSD for nonessential personnel from the sides and rear of the MOFB is 13 ft and 61 ft from the front, based respectively on K40 and the HFD of the primary MGFD. Note that the MOFB is not authorized for use with the contingency MGFD.

e. The use of sand bags are required as an engineering control for intentional detonation operations involving the MEC identified in reference (a). The Marine Corps will ensure usage of reference (e), paragraph C6.2.4.8. Note that engineering controls provided in reference (e) are not authorized for intentional detonations of consolidated shots.

f. One BATF Type II aboveground magazine is approved to store up to 100 pounds net explosive weight of hazard division (HD) 1.1 and mission essential quantities of HD 1.4. The applicable inhabited building distance is 658 ft and the public transportation route distance is 395 ft.

g. Prior to initiation and through completion of on-site explosives operations, all nonessential personnel will be evacuated and prevented from entering any area/facility encumbered by the MSD required for the operation being conducted, or explosives operations will be suspended if nonessential personnel enter the MSD.

h. All MPPEH will be inspected and classified as material documented as safe prior to release.

If changes occur during or after completion of this effort that could increase explosive hazards to site workers or the public due to the presence of military munitions at the site, an amendment to this TCRA-ESS must be submitted to DDESB for review and approval.

The point of contact for this action is Mr. Tony Dunay, (703) 325-3513, DSN 221-3513, E-mail address: tony.dunay@ddesb.osd.mil.

CURTIS M. BOWLING
Chairman
DDESB

UNITED STATES MARINE CORPS
MARINE CORPS SYSTEMS COMMAND
2200 LESTER STREET
QUANTICO, VA 22134-6050

IN REPLY REFER TO:

8020
204
10 Mar 10

From: Commander
To: Department of Defense Explosive Safety Board, 2461 Eisenhower Avenue, Alexandria, VA 22331-0600

Subj: AMENDMENT 1 FOR TIME CRITICAL REMOVAL ACTION INSTALLATION RESTORATION PROGRAM SITE 1 EXPLOSIVE ORDNANCE TRAINING RANGE FORMER MARINE CORPS AIR STATION EL TORO CALIFORNIA

Ref: (a) MCO 5100.29A Marine Corps Safety Program
(b) BRAC request ltr of 3 Mar 2010
(c) DDESB-PE of 25 Jan 2010

Encl: (1) BEM V621 3 ft burial
(2) BEM V621 4 ft burial

1. Reference (a) assigns Marine Corps Environmental and Explosives Safety Program implementation responsibilities to the Commander, Marine Corps Systems Command.

2. As requested in reference (b) the use of engineering controls (Buried Explosion Module (BEM)) when conducting intentional detonation operations is approved.

3. Enclosures (1) and (2) provide examples of various engineering controls that can be applied. These examples can be modified using the processes outlined in the BEM. However, at no time will the use of engineering controls result in an explosive safety quantity distance greater than approved by reference (c).

4. Point of contact for this matter is Mr. James Taylor, Environmental and Explosives Team, Program Manager for Ammunition, Marine Corps Systems Command at DSN 378-8781, commercial (703) 432-8781, email: james.t.taylor1@usmc.mil

JERRY L. MAZZA
By direction

Copy To:
Staff Sec

Appendix B
Natural Resources Coordination and Biological Reconnaissance Email Reports

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-----Original Message-----

From: Jennifer_Wise@fws.gov [mailto:Jennifer_Wise@fws.gov]

Sent: Tuesday, February 16, 2010 10:43

To: Dunn, Jacqueline E CIV NAVFAC SW, PACO

Cc: Jonathan_D_Snyder@fws.gov; Karen_Goebel@fws.gov

Subject: Re: FW: Work Completed, Week of February 8-12, 2010:

Jackie,

I spoke with our Assistant Field Supervisor, Karen Goebel, and it is fine to complete the hand trimming today and tomorrow. Please inform us when the trimming is complete.

Jennifer Wise

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6010 Hidden Valley Rd., Suite 101

Carlsbad, CA 92011

760.431.9440, extension 276

"Dunn, Jacqueline E CIV NAVFAC SW, PACO" <jacqueline.dunn@navy.mil>

02/16/2010 10:06 AM To

<Jennifer_Wise@fws.gov>

cc

Subject

FW: Work Completed, Week of February 8-12, 2010:

==========

Jacqueline E. Dunn, P.E.

Environmental Engineer / Remedial Project Manager

Navy BRAC Program Management Office

1455 Frazee Road, Suite 900

San Diego, CA 92108

COMM: 619.532.0943

Email: jacqueline.dunn@navy.mil

Privacy Act - 1974 As amended applies.

This E-Mail may contain information which must be protected IAW DOD 5400.11R, and is For Official Use Only

-----Original Message-----

From: Jennifer_Wise@fws.gov [mailto:Jennifer_Wise@fws.gov]

Sent: Wednesday, May 26, 2010 11:28

To: Dunn, Jacqueline E CIV NAVFAC SW, PACO

Subject: Re: MCAS El Toro - Site 1 - Vegetation Trimming

Jackie,

Per our phone conversation, the area to be trimmed, and the immediate adjacent habitat, does not contain suitable habitat for gnatcatchers. The site is mostly non-native vegetation, consisting of mustard and thistle. Therefore, the vegetation trimming is not anticipated to impact the gnatcatcher. As a reminder, the site should be assessed for impacts to other MBTA species. However, per our conversation, MBTA species impacts are not expected to occur.

We appreciate your continued coordination. Please let me know if you have additional questions.

Thanks,

Jennifer Wise

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6010 Hidden Valley Rd., Suite 101

Carlsbad, CA 92011

760.431.9440, extension 276

"Dunn, Jacqueline E CIV NAVFAC SW, PACO" <jacqueline.dunn@navy.mil>

05/24/2010 11:01 AM To

<Jennifer_Wise@fws.gov>

cc

"Baldwin, Sandra M CIV NAVFAC SW, ESWD" <sandra.baldwin@navy.mil>, "Dahlstrom, Carol C CIV NAVFAC SW" <carol.dahlstrom@navy.mil>, "Thompson, Tinina L CIV NAVFAC SW" <tinina.thompson@navy.mil>, "Arnold, Content P CIV NAVFAC SW" <content.arnold@navy.mil>

Subject

MCAS El Toro - Site 1 - Vegetation Trimming

Jennifer,

While walking the site last week, it was noted that various areas in the El Toro Site 1 TCRA fieldwork area had grown over during the past few months since the original vegetation trimming. To finish the fieldwork in the area, we would need to trim approximately 1.5 acres of the overgrown vegetation (to the same 8 inches as before & utilizing similar trimming equipment as before - a bobcat with trimming attachment).

As you can see from the photos, this is mostly thistle (in the lower portions of the gullies) and mustard plant (south-central portion of Area A - on the south facing slope).

Would you be available via phone this afternoon around 1500 to discuss this? Sandy & I would like to go through any questions you might have.

We would like to be able to begin trimming work Weds/Thurs of this week (if possible).

Thanks,

Jackie

==========

Jacqueline E. Dunn, P.E.

Environmental Engineer / Remedial Project Manager

Navy BRAC Program Management Office

1455 Frazee Road, Suite 900

San Diego, CA 92108

COMM: 619.532.0943

Email: jacqueline.dunn@navy.mil

Privacy Act - 1974 As amended applies.

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-----Original Message-----

From: Eric_Kershner@fws.gov [mailto:Eric_Kershner@fws.gov]

Sent: Monday, May 17, 2010 15:11

To: Dahlstrom, Carol C CIV NAVFAC SW

Cc: Arnold, Content P CIV NAVFAC SW; Dunn, Jacqueline E CIV NAVFAC SW, PACO

Subject: RE: Site 1_MBTA

Cece,

Per our conversation, my first preference would be to attempt to leave the nest in place and determine whether a lock can be installed properly. If the nest is disturbed slightly during the lock installation, that would still be better than attempting to relocate the nest. However, if you determine that a lock cannot be installed with the nest in the cavity, then I would suggest that you build a box of similar dimensions as the lock area and set this box on top of the lock and cover the locking mechanism with paper. The probability of abandonment will be lower if the nest is moved incrementally. If the nest can be left on top of the locking device that would be good, but if need be the nest can then be moved a second time to the top of the magazine. I worry that moving the nest to the top of the magazine the first time will be too much and the adults will abandon it.

In addition, during the scoping meeting with the contractors, please stress that if at all practicable disturbance/human presence at the nest be limited to 30 minutes or less. This will allow for proper thermoregulation of the eggs or chicks in the nest. It would be better to make multiple shorter visits to a nest than one long visit. For example, if you loaded explosives in the magazine for 30 minutes and returned a few hours later for another 30 minutes, this would cause less disturbance and lower the probability of abandonment than one, 1 hour visit.

As discussed, please continue to advise me on the decisions that you have made and the outcome of the nest. I believe that your efforts to prevent the loss of this nest are in compliance with the spirit of EO 13186 and the MOU for the conservation of migratory birds.

Thank you for your coordination with me regarding this matter.

Cheers,

Eric

****

Eric L. Kershner, PhD

US Fish & Wildlife Service, Region 8

Division of Migratory Birds

6010 Hidden Valley Rd, Suite 100

Carlsbad, CA 92011

eric_kershner@fws.gov

760-431-9440 x214

fax 760-930-0846

****

"Dahlstrom, Carol C CIV NAVFAC SW" <carol.dahlstrom@navy.mil>

05/17/2010 12:55 PM To

<Eric_Kershner@fws.gov>

cc

"Arnold, Content P CIV NAVFAC SW" <content.arnold@navy.mil>, "Dunn, Jacqueline E CIV NAVFAC SW, PACO" <jacqueline.dunn@navy.mil>

Subject

RE: Site 1_MBTA

Eric,

Attached is a summary/analysis of the 4 options we discussed last Thursday, May 13th. Each option was discussed internally and we believe the best option will be to create a similar structure on top of the magazine and relocate the nest to that location (Option 3). Given that the MBTA definition of take does

not include harassment and that we would not be destroying the nest Option 3 would be covered under MBTA.

Prior to going forward with this option we need written confirmation from you whether you concur with this approach and that the Navy would be in compliance with MBTA.

Jackie and I would like to discuss this further with you later this afternoon at your earliest availability.

Thanks,

Cece

_____

C. Dahlstrom

NAVFAC SW

619.532.2269

-----Original Message-----

From: Eric_Kershner@fws.gov [mailto:Eric_Kershner@fws.gov]

Sent: Friday, May 14, 2010 6:51

To: Dahlstrom, Carol C CIV NAVFAC SW

Cc: Arnold, Content P CIV NAVFAC SW; Dunn, Jacqueline E CIV NAVFAC SW, PACO

Subject: RE: Site 1_MBTA

Cece,

Yes, I agree with your summary. Please keep me informed of your decisions and the outcome of the nest.

Thanks

Eric

****

Eric L. Kershner, PhD

US Fish & Wildlife Service, Region 8

Division of Migratory Birds

6010 Hidden Valley Rd, Suite 100

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eric_kershner@fws.gov

760-431-9440 x214

fax 760-930-0846

****

"Dahlstrom, Carol C CIV NAVFAC SW" <carol.dahlstrom@navy.mil>

05/13/2010 04:55 PM To

<eric_kershner@fws.gov>

cc

"Dunn, Jacqueline E CIV NAVFAC SW, PACO" <jacqueline.dunn@navy.mil>, "Arnold, Content P CIV NAVFAC SW" <content.arnold@navy.mil>

Subject

RE: Site 1_MBTA

Eric,

I wanted to summarize our discussion. If I have missed or misunderstood anything please let me know.

Background: There is a nesting pair of House Finches currently occupying the locking mechanism of a magazine on Site 1 at El Toro. The magazine is currently empty but is scheduled to have munitions stored in it on Tuesday, May 18th. For safety purposes the magazine must be locked when munitions are

being stored and considering the location of the nest it will not be possible to lock the magazine without some disturbance to the nest.

Determination: It is your understanding that the Navy would be covered under the Readiness Rule of MBTA to disturb/move/remove the nest. The potential options the Navy has are:

1. Delay use of the magazine until the chicks have fledged or use another magazine.
2. Have a wildlife organization take the eggs.
3. Create a similar structure on the top of the magazine to move the nest to OR determine if the lock will fit with the nest remaining in place.
4. Destroy the nest.

Thank you for your time on this matter. If you have any questions/comments please give me or Jackie a call.

v/r

Cece

_____

C. Dahlstrom

NAVFAC SW

619.532.2269

-----Original Message-----

From: Dahlstrom, Carol C CIV NAVFAC SW

Sent: Thursday, May 13, 2010 15:26

To: 'eric_kershner@fws.gov'

Cc: Dunn, Jacqueline E CIV NAVFAC SW, PACO

Subject: RE: Site 1_MBTA

Eric,

I left a message with on your voicemail and I wanted to follow-up with an email.

Jennifer Wise referred me to you regarding an MBTA issue at El Toro. A House Finch has decided to nest inside the locking mechanism of on of the magazines on Site 1 (see photos). The nest does have a eggs in it. Jacque Dunn (BRAC) and I wanted to discuss our options with you regarding the nest. The magazine is currently empty but is scheduled to have munitions stored in it on Tuesday. For safety purposes the magazine must be locked when munitions are stored inside and considering the location of the nest it will not be possible to lock the magazine.

If you could please give me a call back today to discuss that would be great. I will be available tomorrow via my cell (619.571.2294). You can also call Jacque Dunn at 619.532.0943.

Thanks,

Cece Dahlstrom

_____

Cece Dahlstrom

Natural Resources Specialist

Desert IPT (JE20.CD)

NAVFAC SW

1220 Pacific Hwy

San Diego, CA 92132

work: 619.532.2269

DSN: 522.2269

cell: 619.571.2294

fax: 619.532.1195

carol.dahlstrom@navy.mil

-----Original Message-----

From: Jennifer_Wise@fws.gov [mailto:Jennifer_Wise@fws.gov]

Sent: Thursday, May 13, 2010 14:50

To: Dahlstrom, Carol C CIV NAVFAC SW

Cc: Dunn, Jacqueline E CIV NAVFAC SW, PACO

Subject: Re: Site 1_MBTA

Cece,

I left you a voicemail as well, but I wanted to send you Eric Kershner's contact information. Any MBTA questions should be directed to him. His phone number is 760.431.9440, extension is 214. Let me know if you have any other questions.

Jennifer Wise

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service

6010 Hidden Valley Rd., Suite 101

Carlsbad, CA 92011

760.431.9440, extension 276

"Dahlstrom, Carol C CIV NAVFAC SW" <carol.dahlstrom@navy.mil>

05/13/2010 10:28 AM To

<Jennifer_Wise@fws.gov>

cc

"Dunn, Jacqueline E CIV NAVFAC SW, PACO" <jacqueline.dunn@navy.mil>

Subject

Site 1_MBTA

Jennifer,

I just left you a voicemail and I wanted to follow-up through email. Jacque Dunn and I were hoping get hold of you today to discuss an issue at Site 1 (El Toro) that came up this week. If you could let me know your availability that would be great!

Thanks

Cece

_____

Cece Dahlstrom

Natural Resources Specialist

Desert IPT (JE20.CD)

NAVFAC SW

1220 Pacific Hwy

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work: 619.532.2269

DSN: 522.2269

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carol.dahlstrom@navy.mil

The following account is provided as a summary of the biological surveys that I conducted between January 25 and February 1, 2010, for the MCAS El Toro Site 1 "adjacent property." The purpose of these surveys were twofold: 1) to address habitat suitability and potential occupation by the federally threatened California Gnatcatcher (*Polioptila californica*)(CAGN), and 2) to determine if any birds protected by the Migratory Bird Treaty Act might currently be nesting on the site. With this objective in mind, I completed surveys of the site on the dates of January 25 and 28, and February 1, 2010. After the project then received approval for site preparation, the vegetation was mowed to facilitate the next phase of site investigation. Following the initial vegetation clearing, a follow-up survey was performed on February 12, 2010, to confirm that the site would no longer be considered suitable nesting habitat for the CAGN and most other local breeding species.

Initial "Pre-clearing" Site Surveys

Portions of the site appeared to have supported "coastal sage scrub" (CSS) vegetation in the past, which is the habitat preferred by CAGNs in southern California. CSS habitat, however, was somewhat limited in extent, and not the dominant plant community on the subject property. In addition, the current condition of the CSS did not appear to be suitable breeding habitat for CAGNs, due to brushfires that impacted this portion of the county in recent years. Although the vegetation was regenerating, its current structure was still distinctly shorter than habitat typically used by nesting CAGNs. In limited portions of the site the vegetation was less severely burned by the fires, or was recovered more rapidly (e.g., areas of grassland). These less impacted areas, however, primarily included chaparral or grassland habitats, and neither of these plant communities provide typical breeding habitat for CAGNs.

During the three pre-clearing surveys, no CAGNs were detected on the site, visually or aurally. I utilized the playback of CAGN vocalizations during the site visits, to maximize the potential of detecting any CAGNs should any have been present. Weather conditions during the survey were considered favorable to the detection of the various bird species that might be expected to breed in the area.

At least twenty-one species of birds were recorded during the three pre-clearing surveys, with several of these having potential to breed in this general area (based on their habitat preferences and known breeding ranges). Species recorded during the survey with likely the greatest potential to breed on site included Mourning Dove (*Zenaida macroura*), Anna's Hummingbird (*Calypte anna*), Bewick's Wren (*Thryomanes bewickii*), Common Yellowthroat (*Geothlypis trichas*), Song Sparrow (*Melospiza melodia*), Western Meadowlark (*Sternella neglecta*), House Finch (*Carpodacus mexicanus*) and Lesser Goldfinch (*Spinus psaltria*).

No active nests were discovered during the three site visits, and no bird behavior was observed that might indicate potential breeding activity. The fairly early date of the surveys was considered a primary factor in the absence of any nesting activity being detected. Most of the potential breeders detected on the site would not be expected to initiate breeding activities until late February or early March at the earliest. To some degree, the recent fire impacts to this area are likely a limiting factor in the site's suitability as breeding habitat (at least for those species that utilize mature native scrub plant communities).

Post-clearing Site Assessment

On February 12, 2010, following the vegetation clearing that had taken place since my last CAGN and nesting bird survey, another visit was conducted to the site for the purpose of

reexamining its condition. Due to the very thorough trimming operation, it was quite obvious that none of these areas would now provide any opportunity for CAGNs, or any shrub nesting species, to nest. On February 12 there was one very small area of the site, a small gully near the south end, for which the trimming had not yet been completed. I was informed that day that the small gully and a few small areas on some of the steeper slopes would have additional hand trimming to complete the vegetation removal. With the completion of the vegetation trimming, none of the site would be expected to support breeding habitat for any shrub-nesting species of birds, such as CAGN.

Please contact me if you have questions, or need clarification, as to the results of the CAGN and nesting bird survey conducted between January 25 and February 12, 2010.

Doug Willick
Senior Wildlife Biologist, Transportation
D 714.648.2004
doug.willick@aecom.com
AECOM
999 Town & Country Road, 4th Floor Orange, CA 92868
T 714.567.2400 F 714.285.0740
www.aecom.com

Cavers, Chris

From: Willick, Doug
Sent: Tuesday, May 11, 2010 9:55 PM
To: Wanyoike, Crispin; Cavers, Chris
Subject: California Gnatcatcher/Nesting Bird survey for the El Toro TCRA Site 1 Adjacent Property

Crispin,

This morning (May 11, 2010) we walked all the areas proposed for additional site assessment with the purpose of 1) evaluating whether the site, in its current condition, might support California Gnatcatchers (*Polioptila californica*), and 2) whether there may active nests of birds in the area proposed for additional assessment.

California Gnatcatcher

The site, in its current condition, does not appear suitable to support any nesting pairs of California gnatcatchers (CAGNs). Although there has been noticeable regrowth of vegetation since the clearing work was completed about three months ago, I did not observe any areas that would appear suitable for CAGNs. In most of the areas the structure was still too low to be typical of that used for nesting CAGNs. In areas that had more substantial regrowth, these were dominated by weed species, such as black mustard, several species of thistles, and non-native grasses. In no areas of the site was any significant regrowth of coastal sage scrub species found, especially in terms of this vegetation achieving the height that would be necessary to be suitable for nesting CAGNs. During our survey of the site, I occasionally utilized playback of CAGN vocalizations to maximize our chances of detecting any CAGNs that might potentially be present. Not surprisingly, no California gnatcatchers were located, either visually or aurally.

Nesting Birds

Approximately thirty species of birds were recorded during the May 11 survey of the site. Included were birds observed or heard on the site as well as in areas adjacent to the site (e.g., in the riparian habitat associated with the Agua Chinon Wash) and in flight overhead. Of those bird species that were detected on the project site, a majority of these were observed outside the area proposed for additional site assessment. In general, the areas proposed for additional site assessment were dominated by relatively sparse and shorter stature vegetation, currently, and therefore provided less cover for most nesting bird species. The majority of the birds likely, or potentially, breeding on the site were present in areas where taller and more dense vegetation remained, such as in areas of steeper terrain and in a few of the small side drainages that traverse the site.

During the walk over of the site, attention was given to birds that were exhibiting potential nesting evidence, or any behavior that would indicate the possibility of nesting activity. One of the most obvious indications of potential nesting activity in a given area is the presence of territorial males. These will typically be singing consistently, often from relatively conspicuous perches, and defending a specific area from other males of the same species. Other evidence used to indicate potential nesting activity would include birds carrying nesting material or food, individuals acting unusually bold or scolding when approaching, or exhibiting distraction displays (such as when the observer is very close to a nest).

During the survey, potential nesting activity was observed in only one location that is proposed for additional site assessment. This activity was noted in one of the drainages that broadens out towards the bottom of the slope. A presumed territorial male Common Yellowthroat (*Geothlypis trichas*) had been singing consistently near a patch of tall, and relatively dense thistles. Shortly thereafter a female Common Yellowthroat slowly approached and disappeared into the patch of thistles, followed soon by the male. Although definitive nesting evidence was not observed, this activity was suspicious and the area was flagged as an area where an active may potentially be present. In discussing this particular site with Chris, it was decided that the work activity could proceed here, but that workers would be cautioned prior to working in the area of flagging and attempt to conduct their investigation with as little disruption to

the marked area as possible. No other definitive, or suspected, nesting activity was observed in the portion of the site proposed for additional site assessment.

If you have questions, or if clarification can be provided, as to the results of the CAGN and nesting bird survey conducted on May 11, 2010, please call my cell (909-241-7010), as I will likely be in the field all day tomorrow.

Doug Willick
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Appendix C
Public Notices for Availability of Action Memorandum

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Google's action angers China

Government blocks search results as maneuver around censorship fails.

THE ASSOCIATED PRESS

Google's attempted detour around China's Internet censorship rules was met with countermeasures Tuesday by the communist government, which blocked people on the mainland from seeing search results dealing with such forbidden topics as the pro-democracy movement.

China's maneuver, as well as its public rebuke of Google's decision to stop censoring searches for the government, rattled some of the company's investors, advertisers and users.

The chief concern is whether Google poisoned its business in one of the world's most promising Internet markets. One analyst critical of Google's move predicted the maneuver will cause the company's stock to fall by as much as $50 – or about 10 percent – in the coming weeks.

Last month, Google said it no longer felt comfortable complying with the country's demands that it censor Web content deemed objectionable by the communist rulers. On Monday, Google began sending Web searchers in mainland China from the China-based Google.cn to Google.com.hk, based in Hong Kong. The former British colony has an open Internet, and Google is not legally required to censor results there.

But that end-run doesn't prevent China's government from using its Internet filters – known as the Great Firewall – to block some search results and Web sites from being seen in the mainland.

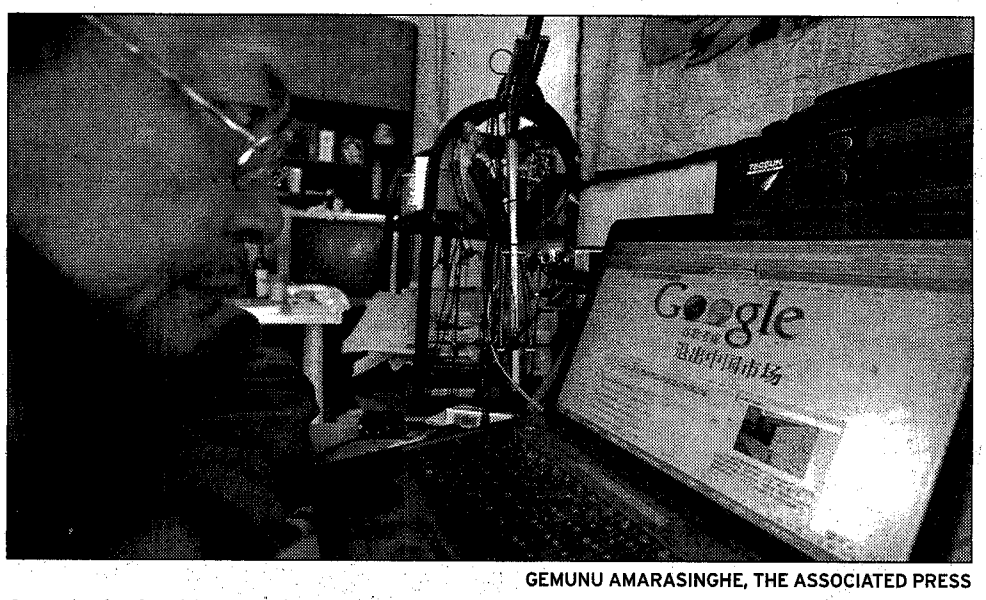
On Tuesday, a search request from within mainland China about the 1989 Tiananmen democracy protests returned a notice that the "page cannot be displayed." It also caused the Web browser to disconnect for several seconds. Under the old google.cn, a similar query usually returned a list of sanitized sites about Tiananmen Square.

If the Chinese leaders really want to foil Google, they could block all mainland access to the Hong Kong service. Or they could exert their control of Chinese telecommunications companies to slow the speed of queries and responses, to help drive traffic to homegrown rivals.

"It really comes down to the extent of their vindictiveness," said Duncan Clark, managing director of BDA China Ltd., a technology market research firm.

The tensions between Google and China's government already appear to be denting the company's business.

TOM Online, a provider of online and mobile services in China that is owned by a Hong Kong tycoon, said it would not renew an alliance with Google to avoid violating any Chinese laws.



GEMUNU AMARASINGHE, THE ASSOCIATED PRESS

Award-winning blogger Tiger Temple, or Zhang Shihe, a critic of China's Internet censorship, looks at a Web page with the Chinese words "Google considers leaving the Chinese market," in his home in Beijing on Tuesday. Google had said it no longer felt comfortable with China's demands for censorship.

Lions Gate rejects latest bid for control by Icahn

THE ASSOCIATED PRESS

Lions Gate Entertainment rejected on Tuesday the latest bid by activist investor Carl Icahn for control of the film studio, calling the offer too low. Lions Gate also said the unsolicited offer wouldn't hamper its acquisition strategy.

The company said its board voted unanimously against Icahn's offer to buy all of its outstanding shares for $6 each which would value the deal at about $575 million.

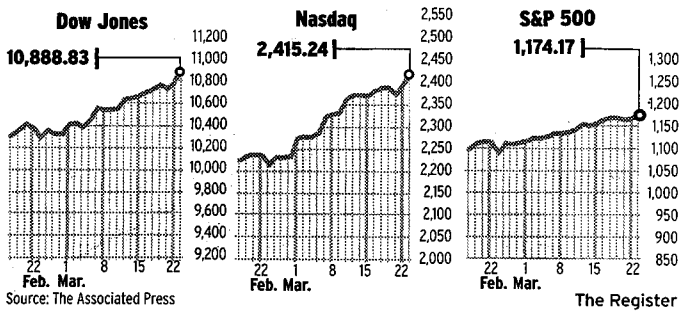
Lions Gate rebuffed an offer of $6 per share by Icahn last month that would have raised his stake in the company to 30 percent from 19 percent. The company also rewrote its bylaws to make such a takeover attempt more difficult in the future, a move Icahn has said he will challenge in court.

Lions Gate said Icahn's offer is little changed except that he wants the whole company now. The initial bid was 15 percent above the stock's latest closing price at the time but fell short of analysts' average share price target of $8.67.

Icahn and Lions Gate management have been wrestling over control of the company for more than a year. The latest flash point is Lions Gate's interest in buying the **Metro-Goldwyn-Mayer Inc.** studio or **The Walt Disney Co.**'s Miramax Films division.

Icahn is against an acquisition. Among other reasons, he argues falling DVD sales make film catalogs like those held by MGM and Disney less valuable.

Tuesday's numbers | March 23, 2010



Source: The Associated Press

The Register

Major U.S. stock indexes

Index	Open	Close	Chg	Daily % Chg	YTD %Chg
Dow Industrials	10787.18	10888.83	+102.94	+.95	+4.42
Dow Transports	4382.21	4410.39	+29.08	+.66	+7.58
Dow Utilities	379.40	380.97	+1.56	+.41	-4.28
Dow Composite	3669.11	3697.27	+28.39	+.77	+3.66
NYSE Composite	7419.01	7478.76	+59.74	+.81	+4.09
Nasdaq Composite	2397.90	2415.24	+19.84	+.83	+6.44
S&P 100	532.76	536.97	+4.21	+.79	+4.45
S&P 500	1166.47	1174.17	+8.36	+.72	+5.30
S&P 400 Midcap	793.79	799.95	+6.16	+.78	+10.08
S&P 600 Smallcap	364.48	368.00	+3.61	+.99	+10.63
Wilshire 5000	12196.22	12287.44	+91.22	+.75	+6.40
Russell 1000	641.98	646.79	+4.75	+.74	+5.68
Russell 2000	683.13	690.30	+7.39	+1.08	+10.38
Russell 3000	687.30	692.65	+5.27	+.77	+6.05

Other U.S. stock indexes

Index	Last	Daily %Chg	YTD %Chg
US 100	5343.73	+.75	+4.87
NYSE Energy	11220.91	+.55	-1.70
NYSE Finance	5038.86	+.73	+6.73
NYSE Healthcare	6563.40	+.42	+2.12
American Composite	1896.10	+.36	+3.90
Nasdaq Industrials	1884.53	+.67	+7.84
Nasdaq Financial	3749.08	+.61	+2.32
Nasdaq Transportation	2106.78	+.63	+7.97
Nasdaq Telecom	228.81	+1.19	+5.51
Nasdaq Computer	1204.75	+1.03	+3.12
Nasdaq Biotech	963.38	+1.10	+14.20
S&P Banks	148.97	+1.09	+18.84
Pharmaceutical Index	313.35	+.68	+1.34
Phila. Semiconductor	372.47	+2.26	+3.49

QUOTES ONLINE OR BY PHONE

To check company stock quotations, day or night, visit us online at **www.ocregister.com**. Click on the "MONEY' tab, scroll to the "Stock quote" box and enter your stock's ticker symbol and click "GO." Information also is available at www.ocregister.com about the prices of stocks on the New York Stock Exchange, the Nasdaq stock exchange and the American Stock Exchange as well as closing prices of mutual funds, A to Z.

For quotes by phone, readers may call Tellme at **800-555-8355**.

Stock winners

Name	Last	Chg	Pct
MaguirePr	3.54	+.87	+32.6
MauiLnd h	7.34	+1.64	+28.8
CostPlus	2.40	+.53	+28.0
RetOpp un	15.50	+3.10	+25.0
Nwcstl pfB	16.90	+3.15	+22.9
Sequenom	6.64	+1.11	+20.1
StarScient	2.28	+.38	+20.0
Maguir pfA	15.55	+2.50	+19.2
GlenBurnie	11.51	+1.80	+18.5
SptChalB	3.36	+.48	+16.7

Stock losers

Name	Last	Chg	Pct
Oncothyr h	3.49	-1.29	-27.0
RXi Phrm	5.96	-2.15	-26.5
BarcAsia8	47.10	-9.45	-16.7
MLSPRt5-10	3.33	-.67	-16.7
Exceed un	10.61	-1.99	-15.8

Stocks most active

Name	Vol (000)	Last	Chg
Citigrp	411435	4.13	+.09
S&P500ETF	168996	117.41	+.82
FordM	163639	13.90	-.09
BkofAm	129154	17.13	+.17

NYSE	Today	Previous
Advanced	2235	2017
Declined	832	1039
Total sales	4,471,822,722	
Previous day	4,292,713,844	

Nasdaq	Today	Previous
Advanced	1795	1743
Declined	871	980
Total sales	2,255,065,019	
Previous day	2,269,559,074	

Bond indexes

Index	Close	Chg.	YTD
Barclays Treas.	4.33%	+.03	-.11
BondBuyMuni	5.26%		-.14
Morgan US$	83.80		-.20
CRB Index	271.71	-.57	-11.67
DJ AIG Fut.	131.79	-.28	-7.39
Moodys Bond	5.19	-.01	-.11
	4.44	-.01	-.27

Interest rates

	Last	Wk. ago
Prime Rate	3.25	3.25
Discount Rate Primary	0.75	0.75
Fed Funds Target	.00-.25	.00-.25
T-Bills:		
3-month disc	0.13	0.16
6-month disc	0.22	0.23
T-Bill, annualized, adjusted for constant maturity:		
1-year	0.41	0.39
T-Notes:		
1-year	0.38	0.37
2-year	0.96	0.89
5-year	2.40	2.34
10-year	3.67	3.65
T-Bond:		
30-year	4.59	4.59
Libor:		
3-month	0.28	0.26
6-month	0.44	0.40
FHLB Cost of Funds, 11th District:		
Eff. Feb. 26	1.786	1.786
FNMA 30-year mortgage commitment:		
60-days	4.77	4.75
Money market fund:		
Fidelity Cash Reserves:		
7-day avg yld:	0.03	0.03

Foreign stock exchanges

Index	Last	Daily %Chg	YTD %Chg
Frankfurt DAX	6017.27	+.50	+1.00
London FTSE	5673.63	+.52	+4.82
Hong Kong	20987.78	+.26	-4.04
Paris CAC	3952.55	+.63	+.41
Manila	3129.24	+1.47	+2.51
Mexico	33361.27	+.66	+3.86
Tokyo Nikkei	10774.15	-.47	+2.16
Seoul	1681.82	+.55	-.06
Singapore	2905.66	+.57	+.28
Brazil	69386.72	+.50	+1.16
Taipei	7811.87	-.31	-4.59
Canada TSE	12044.54	+.65	+2.54
Shanghai B	253.51	-.49	+.44

Currencies

New York rates for $1 million minimum

	Fgn. currency in $	$ in fgn. currency
Argent	.2587	3.8650
Australia	.9173	1.0901
Britain	1.5032	.6652
Canada	.9825	1.0178
Chile	.001877	532.75
China	.1465	6.8274
Euro	1.3488	.7414
Hong Kong	.1288	7.7620
India	.0220	45.434
Japan	.011059	90.43
Mexico	.079796	12.5320
N. Zealand	.7054	1.4176
Philpins	.0219	45.67
Russia	.0338	29.5569
Singapore	.7138	1.4009
So. Africa	.1364	7.3338
So. Korea	.000878	1139.50
SwitzerInd	.9455	1.0576
Taiwan	.0314	31.85
Thailand	.03093	32.34

Commodity futures

Nearest-term contracts

Commodity	Contract	Settle	Chg
Gold	Mar 10	1103.50	+4.20
Silver	Mar 10	1701.2	+9.2
Platinum	Apr 10	1608.50	+7.20
Palladium	Mar 10	463.65	+4.15
Copper	Mar 10	336.95	-.30
Corn	May 10	362.00	-8.00
Soybeans	May 10	968.00	-.00
Wheat	May 10	476.00	-9.00
Cattle	Apr 10	95.70	-1.40
Hogs	Apr 10	71.92	-1.18
Pork bellies	Mar 10	94.50	+3.00
Crude oil	May 10	81.91	+.31
Natural gas	Apr 10	4.130	+.051
Gas Blend	Apr 10	2.2628	+.0066
Cotton	May 10	82.89	+.40
Cocoa	May 10	2895	+22
Coffee	May 10	134.75	+1.75
Orange juice	May 10	142.50	-2.05
Sugar-world	May 10	16.57	-1.27
Lumber	May 10	277.1	-1.7

The nearest-term futures contract price, usually for delivery in the next month or two, is the best approximation of a current generic market price.

Metals spot prices

	Last	Wk ago
Gold (troy oz):		
London PM fix	$1101.50	$1124.75
HSBC Bank USA	$1105.00	$1127.00
NY Merc	$1103.50	$1122.20
Silver (troy oz):		
NY Merc spot	$17.012	$17.333
Lead (metric ton)	$2139.00	$2184.50
Gold Coins:		
U.S. Eagle	1151.07	$1175.36
Aust.Kangaroo	1151.07	$1175.36
Krugerrand	1121.50	$1144.75

O.C. stocks

Closing prices, key data from yesterday of major public companies headquartered in Orange County. Note: PE means price-earnings.

52 week High	52 week Low	Stock	Div	PE	Vol (000)	Last	Chg	%Chg Daily	%Chg YTD
11.34	3.46	Acacia Tech			107	10.32	+.43	+4.3	+13.3
64.86	39.53	Allergan	.20	28	1158	64.39	+.03		+2.2
9.00	4.69	Alliance Imaging			87	5.67	-.15	-2.6	-.7
14.26	6.28	Am. Vanguard	.02e		104	8.14	-.20	-2.4	-1.9
1.49	.27	Ambassadors			22	.47	+.01	+2.4	-20.3
1.19	.22	Autobytel			125	1.07	-.02	-1.8	+7.0
4.09	.39	Avanir Pharm.			270	2.12	-.02	-.9	+11.6
24.70	12.91	BJ's Restaurant		51	136	24.29	+.20	+.8	+29.0
71.57	47.53	Beckman Coulter	.72	22	5680	64.22	-4.88	-7.1	-1.9
2.88	.77	Biolase			119	2.13	...		+11.5
12.84	3.31	Bridgford Foods	.10e	16	2	11.71	+.01	+.1	+4.6
34.27	19.11	Broadcom A	.32		8258	34.20	+.11	+.3	+8.7
11.57	7.60	CKE Restaurants	.24	18	1130	11.28	-.02	-.2	+33.3
13.80	6.65	CalFirst Bancorp	.48	12	1	12.93	+.14	+1.1	-1.0
2.07	.43	Calif. Coastal			74	.00	-.02	-2.2	-23.2
24.32	15.70	Ceradyne		73	113	24.14	+.11	+.5	+25.6
4.43	1.64	Clarient			469	2.65	+.09	+3.5	
23.20	5.69	Clean Energy Fuels			1548	21.62	+.86	+4.1	+40.3
10.94	3.67	Collector's Universe	1.00		22	10.50	-.05	-.5	+12.3
3.29	1.30	Comarco			2	2.80	-.13	-4.4	+3.7
2.02	.36	Consumer Portf.			26	1.89	-.03	-1.6	+61.5
41.55	23.55	Cooper Cos.	.06	19	186	40.68	-.33	-.8	+6.7
36.91	18.48	CorVel		16	10	36.45	-.04	-.1	+8.7
21.00	12.64	Corinthian		14	1458	19.10	+.17	+.9	+38.7
6.00	3.05	DDi		63	108	5.63	+.14	+2.6	+15.1
35.37	.37	Diedrich Coffee		58	36	34.90	+.10	+.3	+.1
101.46	55.82	Edwards Lifesc		30	424	100.56	-.70	-.7	+15.8
14.34	4.82	Emulex Corp			1779	13.80	-.03	-.2	+26.6
6.27	1.90	Endologix Inc			130	3.83	+.17	+4.6	-27.5
18.79	12.50	Ensign Group Inc	.20	11	36	17.82	+.08	+.5	+15.9
10.07	3.53	Epicor		36	182	10.10	+.17	+1.7	+32.5
36.10	20.91	First Am. Fin.	.88	16	1886	34.60	-.17	-.5	+4.5
52.53	10.65	Fuel Systems Soltns		18	508	31.98	+1.20	+3.9	-22.5
2.26	.39	Grubb & Ellis			927	2.18	+.17	+8.5	+70.3
44.06	29.53	ICU Medical		20	57	36.14	-.21	-.6	-.8
6.18	3.16	Impac Mortgage		28	64	4.19	-.04	-.9	+27.4
18.99	11.71	Ingram Micro		15	1994	18.07	+.01	+.1	+3.6
6.83	1.68	Ista Pharm			46	4.10	+.03	+.7	-10.1
2.05	1.10	Iteris		7	266	1.99	...		+32.7
44.40	20.90	Kaiser Aluminum	.96	11	173	38.35	+1.28	+3.5	-7.9
4.56	2.16	Lantronx rs			9	3.75	-.14	-3.6	+15.7
6.67	2.15	Local.com Corp			37	6.08	+.05	+.8	+4.6
31.43	21.83	Masimo Corp	2.00e	31	258	27.59	+.05	+.2	-9.3
6.98	2.45	Meade.rs			9	4.05	+.40	+11.0	+47.3
18.50	10.75	Microsemi			1069	16.52	+.60	+3.8	-7.0
8.79	.95	Mindspeed Tech			221	8.29	+.26	+3.2	+76.8
30.91	15.12	Multi-Fineline		14	53	25.62	+.33	+1.3	-9.7
36.32	19.75	Natwde Health	1.76	31	677	36.19	+.06	+.2	+2.9
7.98	.16	Netlist Inc			870	3.86	...		-25.6
12.01	4.13	Newport Corp.			91	11.88	+.18	+1.5	+29.3
9.46	4.17	PCM Fund Inc.	.84a		51	9.14	+.08	+.9	+14.7
4.51	2.72	Pacific Mercantile			1	2.95	...		-2.3
5.63	2.70	Pacific Premier			11	4.85	+.05	+1.0	+43.6
7.25	1.35	Pacific Sunwear			1518	5.09	+.09	+1.8	+27.9
5.65	1.75	Peregrne rs			140	3.19	+.05	+1.6	+7.8
1.79	.34	Powerwave		62	1444	1.24	-.03	-2.4	-1.6
.88	.29	Pro-Dex			32	.52	+.02	+4.0	+3.0
21.28	10.91	QLogic		30	1700	20.56	+.45	+2.2	+9.0
68.59	43.00	Quality System	1.20	39	272	62.99	+.43	+.7	+.3
1.77	.60	Quantum Fuel			1807	.68	+.01	+1.5	-38.7
18.82	12.19	Quest Software		25	545	18.21	+.13	+.7	-1.0
4.57	1.08	Quiksilver			1620	4.30	+.04	+.9	+112.9
1.37	.20	RadientPh			580	.26	+.03	+12.6	+7.9
21.89	14.48	Resources Connection			395	18.34	+.20	+1.1	-13.6
9.50	4.70	SRS Labs		65	92	9.73	+.27	+2.9	+32.7
42.50	6.96	STEC Inc.		9	2024	12.37	+.25	+2.1	-24.3
8.25	2.81	SenoRx Inc			19	7.17	+.17	+2.4	-11.4
11.38	5.83	Skilled Healthcare			109	6.76	-.09	-1.3	-9.3
12.87	4.89	Smith Micro		59	75	8.91	+.21	+2.4	-2.6
10.00	1.48	Spectrum Pharm			528	4.93	+.03	+.6	+11.0
5.18	.85	Standard Pacific			2971	4.75	+.41	+9.4	+27.0
10.75	7.39	Sun Healthcare		11	340	9.99	-.24	-2.3	+8.9
10.61	2.30	Sunstone Hotel Inv			813	10.45	-.05	-.5	+17.7
12.52	5.10	TTM Technologies Inc		81	344	9.70	+.22	+2.3	-15.9
4.75	1.60	TigerLogic Corp.			4	3.25	...		-.3
26.55	16.82	Universal Elect.		23	44	23.66	-.04	-.2	+1.9
41.10	16.34	Valeant Pharm		13	970	41.84	+.83	+2.0	+31.6
19.74	9.00	Volcom		48	102	18.83	+.18	+1.0	+12.5
47.44	17.56	Western Digital		10	8510	42.02	+1.38	+3.4	-4.8
4.68	2.77	Wet Seal		30	732	4.73	+.08	+1.7	+37.1
5.25	1.04	Willdan Group Inc			12	2.18	-.27	-11.0	-8.4

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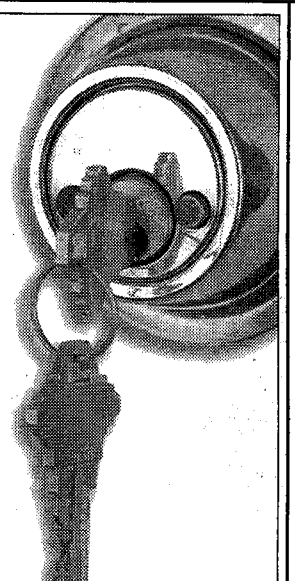

PUBLIC NOTICE
Action Memorandum for Time-Critical Removal Action at Installation Restoration Program Site 1, Adjacent Property Former Marine Corps Air Station El Toro

The Navy has issued an Action Memorandum (AM) for a time-critical removal action to address potential explosive safety hazards on property adjacent to Installation Restoration Program (IRP) Site 1, Former Explosive Ordnance Disposal Training Range at former Marine Corps Air Station El Toro, Irvine, California. This cleanup action, which began in February 2010, is intended to substantially reduce residual risks to human health and the environment from potential explosive safety hazards. The AM is available for public review at the following locations:

MCAS EL Toro Administrative Record File BRAC Office Building, Building 307, MCAS El Toro Phone: (949) 726-5398	Information Repository Heritage Park Regional Library, 14361 Yale Avenue, Irvine, California Phone: (949) 936-4040.

The Navy invites interested members of the public to review and comment on

DONATE ONLINE WWW.SATRUCK.ORG OR CALL 1-800-SATRUCK (728-7825)

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Last month, Google said it no longer felt comfortable complying with the country's demands that it censor Web content deemed objectionable by the communist rulers. On Monday, Google began sending Web searchers in mainland China from the China-based Google.cn to Google.com.hk, based in Hong Kong. The former British colony has an open Internet, and Google is not legally required to censor results there.

But that end-run doesn't prevent China's government from using its Internet from being seen in the mainland.

On Tuesday, a search request from within mainland China about the 1989 Tiananmen democracy protests returned a notice that the "page cannot be displayed." It also caused the Web browser to disconnect for several seconds. Under the old google.cn, a similar query usually returned a list of sanitized sites about Tiananmen Square.

If the Chinese leaders really want to foil Google, they could block all mainland access to the Hong Kong service. Or they could exert their control of Chinese telecom companies to drive traffic to homegrown rivals.

"It really comes down to the extent of their vindictiveness," said Duncan Clark, managing director of BDA China Ltd., a technology market research firm.

The tensions between Google and China's government already appear to be denting the company's business.

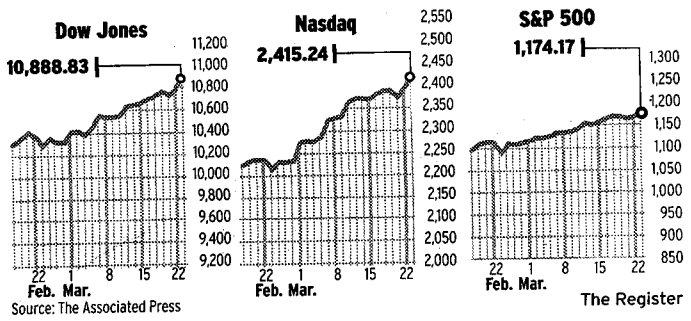
TOM Online, a provider of online and mobile services in China that is owned by a Hong Kong tycoon, said it would not renew an alliance with Google to avoid violating any Chinese laws.

at the time but fell short of analysts' average share price target of $8.67.

Icahn and Lions Gate management have been wrestling over control of the company for more than a year. The latest flash point is Lions Gate's interest in buying the **Metro-Goldwyn-Mayer Inc.** studio or **The Walt Disney Co.**'s Miramax Films division.

Icahn is against an acquisition. Among other reasons, he argues falling DVD sales make film catalogs like those held by MGM and Disney less valuable.

Tuesday's numbers | March 23, 2010



Source: The Associated Press

The Register

Major U.S. stock indexes

Index	Open	Close	Chg	Daily % Chg	YTD %Chg
Dow Industrials	10787.18	10888.83	+102.94	+.95	+4.42
Dow Transports	4382.21	4410.39	+29.08	+.66	+7.58
Dow Utilities	379.40	380.97	+1.56	+.41	-4.28
Dow Composite	3669.11	3697.27	+28.39	+.77	+3.66
NYSE Composite	7419.01	7478.76	+59.74	+.81	+4.09
Nasdaq Composite	2397.90	2415.24	+19.84	+.83	+6.44
S&P 100	532.76	536.97	+4.21	+.79	+4.45
S&P 500	1166.47	1174.17	+8.36	+.72	+5.30
S&P 400 Midcap	793.79	799.95	+6.16	+.78	+10.08
S&P 600 Smallcap	364.48	368.00	+3.61	+.99	+10.63
Wilshire 5000	12196.22	12287.44	+91.22	+.75	+6.40
Russell 1000	641.98	646.79	+4.75	+.74	+5.68
Russell 2000	683.13	690.30	+7.39	+1.08	+10.38
Russell 3000	687.30	692.65	+5.27	+.77	+6.05

Other U.S. stock indexes

Index	Last	Daily %Chg	YTD %Chg
US 100	5343.73	+.75	+4.87
NYSE Energy	11220.91	+.55	-1.70
NYSE Finance	5038.86	+.73	+6.73
NYSE Healthcare	6563.40	+.42	+2.12
American Composite	1896.10	+.36	+3.90
Nasdaq Industrials	1884.53	+.67	+7.84
Nasdaq Financial	3749.08	+.61	+2.32
Nasdaq Transportation	2106.78	+.63	+7.97
Nasdaq Telecom	228.81	+1.19	+5.51
Nasdaq Computer	1204.75	+1.03	+3.12
Nasdaq Biotech	963.38	+1.10	+14.20
S&P Banks	148.97	+1.09	+18.84
Pharmaceutical Index	313.35	+.68	+1.34
Phila. Semiconductor	372.47	+2.26	+3.49

QUOTES ONLINE OR BY PHONE

To check company stock quotations, day or night, visit us online at **www.ocregister.com**. Click on the "MONEY' tab, scroll to the "Stock quote" box and enter your stock's ticker symbol and click "GO." Information also is available at www.ocregister.com about the prices of stocks on the New York Stock Exchange, the Nasdaq stock exchange and the American Stock Exchange as well as closing prices of mutual funds, A to Z.

For quotes by phone, readers may call Tellme at **800-555-8355**.

Stock winners

Name	Last	Chg	Pct
MaguirePr	3.54	+.87	+32.6
MauiLnd h	7.34	+1.64	+28.8
CostPlus	2.40	+.53	+28.0
RetOpp un	15.50	+3.10	+25.0
Nwcstl pfB	16.90	+3.15	+22.9
Sequenom	6.64	+1.11	+20.1
StarScient	2.28	+.38	+20.0
Maguir pfA	15.55	+2.50	+19.2
GlenBurnie	11.51	+1.80	+18.5
SptChalB	3.36	+.48	+16.7

Stock losers

Name	Last	Chg	Pct
Oncothyr h	3.49	-1.29	-27.0
RXi Phrm	5.96	-2.15	-26.5
BarcAsia8	47.10	-9.45	-16.7
MLSPRt5-10	3.33	-.67	-16.7
Exceed un	10.61	-1.99	-15.8

Stocks most active

Name	Vol (000)	Last	Chg
Citigrp	411435	4.13	+.09
S&P500ETF	168996	117.41	+.82
FordM	163639	13.90	-.09
BkofAm	129154	17.13	+.17

NYSE	Today	Previous
Advanced	2235	2017
Declined	832	1039
Total sales	4,471,822,722	
Previous day	4,292,713,844	

Nasdaq	Today	Previous
Advanced	1795	1743
Declined	871	980
Total sales	2,255,065,019	
Previous day	2,269,559,074	

Bond indexes

Index	Close	Chg.	YTD
Barclays Treas.	4.33%	+.03	-.11
BondBuyMuni	5.26%		-.14
Morgan US$	83.80		-.20
CRB Index	271.71	-.57	-11.67
DJ AIG Fut.	131.79	-.28	-7.39
Moodys Bond	5.19	-.01	-.11
	4.44	-.01	-.27

Interest rates

	Last	Wk. ago
Prime Rate	3.25	3.25
Discount Rate Primary	0.75	0.75
Fed Funds Target	.00-.25	.00-.25
T-Bills:		
3-month disc	0.13	0.16
6-month disc	0.22	0.23
T-Bill, annualized, adjusted for constant maturity:		
1-year	0.41	0.39
T-Notes:		
1-year	0.38	0.37
2-year	0.96	0.89
5-year	2.40	2.34
10-year	3.67	3.65
T-Bond:		
30-year	4.59	4.59
Libor:		
3-month	0.28	0.26
6-month	0.44	0.40
FHLB Cost of Funds, 11th District:		
Eff. Feb. 26	1.786	1.786
FNMA 30-year mortgage commitment:		
60-days	4.77	4.75
Money market fund:		
Fidelity Cash Reserves:		
7-day avg yld:	0.03	0.03

Foreign stock exchanges

Index	Last	Daily %Chg	YTD %Chg
Frankfurt DAX	6017.27	+.50	+1.00
London FTSE	5673.63	+.52	+4.82
Hong Kong	20987.78	+.26	-4.04
Paris CAC	3952.55	+.63	+.41
Manila	3129.24	+1.47	+2.51
Mexico	33361.27	+.66	+3.86
Tokyo Nikkei	10774.15	-.47	+2.16
Seoul	1681.82	+.55	-.06
Singapore	2905.66	+.57	+.28
Brazil	69386.72	+.50	+1.16
Taipei	7811.87	-.31	-4.59
Canada TSE	12044.54	+.65	+2.54
Shanghai B	253.51	-.49	+.44

Currencies

New York rates for $1 million minimum

	Fgn. currency in $	$ in fgn. currency
Argent	.2587	3.8650
Australia	.9173	1.0901
Britain	1.5032	.6652
Canada	.9825	1.0178
Chile	.001877	532.75
China	.1465	6.8274
Euro	1.3488	.7414
Hong Kong	.1288	7.7620
India	.0220	45.434
Japan	.011059	90.43
Mexico	.079796	12.5320
N. Zealand	.7054	1.4176
Philpins	.0219	45.67
Russia	.0338	29.5569
Singapore	.7138	1.4009
So. Africa	.1364	7.3338
So. Korea	.000878	1139.50
Switzerlnd	.9455	1.0576
Taiwan	.0314	31.85
Thailand	.03093	32.34

Commodity futures

Nearest-term contracts

Commodity	Contract	Settle	Chg
Gold	Mar 10	1103.50	+4.20
Silver	Mar 10	1701.2	+9.2
Platinum	Apr 10	1608.50	+7.20
Palladium	Mar 10	463.65	+4.15
Copper	Mar 10	336.95	-.30
Corn	May 10	362.00	-8.00
Soybeans	May 10	968.00	-.00
Wheat	May 10	476.00	-9.00
Cattle	Apr 10	95.70	-1.40
Hogs	Apr 10	71.92	-1.18
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36.91	18.48	CorVel		16	10	36.45	-.04	-.1	+8.7
21.00	12.64	Corinthian		14	1458	19.10	+.17	+.9	+38.7
6.00	3.05	DDi		63	108	5.63	+.14	+2.6	+15.1
35.37	.37	Diedrich Coffee		58	36	34.90	+.10	+.3	+.1
101.46	55.82	Edwards Lifesc		30	424	100.56	-.70	-.7	+15.8
14.34	4.82	Emulex Corp			1779	13.80	-.03	-.2	+26.6
6.27	1.90	Endologix Inc			130	3.83	+.17	+4.6	-27.5
18.79	12.50	Ensign Group Inc	.20	11	36	17.82	+.08	+.5	+15.9
10.07	3.53	Epicor		36	182	10.10	+.17	+1.7	+32.5
36.10	20.91	First Am. Fin.	.88	16	1886	34.60	-.17	-.5	+4.5
52.53	10.65	Fuel Systems Soltns		18	508	31.98	+1.20	+3.9	-22.5
2.26	.39	Grubb & Ellis			927	2.18	+.17	+8.5	+70.3
44.06	29.53	ICU Medical		20	57	36.14	-.21	-.6	-.8
6.18	3.16	Impac Mortgage		28	64	4.19	-.04	-.9	+27.4
18.99	11.71	Ingram Micro		15	1994	18.07	+.01	+.1	+3.6
6.83	1.68	Ista Pharm			46	4.10	+.03	+.7	-10.1
2.05	1.10	Iteris			7	266	1.99	...	+32.7
44.40	20.90	Kaiser Aluminum	.96	11	173	38.35	+1.28	+3.5	-7.9
4.56	2.16	Lantronx rs			9	3.75	-.14	-3.6	+15.7
6.67	2.15	Local.com Corp			37	6.08	+.05	+.8	+4.6
31.43	21.83	Masimo Corp	2.00e	31	258	27.59	+.05	+.2	-9.3
6.98	2.45	Meade.rs			9	4.05	+.40	+11.0	+47.3
18.50	10.75	Microsemi			1069	16.52	+.60	+3.8	-7.0
8.79	.95	Mindspeed Tech			221	8.29	+.26	+3.2	+76.8
30.91	15.12	Multi-Fineline		14	53	25.62	+.33	+1.3	-9.7
36.32	19.75	Natwde Health	1.76	31	677	36.19	+.06	+.2	+2.9
7.98	.16	Netlist Inc			870	3.86	...		-25.6
12.01	4.13	Newport Corp.			91	11.88	+.18	+1.5	+29.3
9.46	4.17	PCM Fund Inc.	.84a		51	9.14	+.08	+.9	+14.7
4.51	2.72	Pacific Mercantile			1	2.95	...		-2.3
5.63	2.70	Pacific Premier			11	4.85	+.05	+1.0	+43.6
7.25	1.35	Pacific Sunwear			1518	5.09	+.09	+1.8	+27.9
5.65	1.75	Peregrne rs			140	3.19	+.05	+1.6	+7.8
1.79	.34	Powerwave		62	1444	1.24	-.03	-2.4	-1.6
.88	.29	Pro-Dex			32	.52	+.02	+4.0	+3.0
21.28	10.91	QLogic		30	1700	20.56	+.45	+2.2	+9.0
68.59	43.00	Quality System	1.20	39	272	62.99	+.43	+.7	+.3
1.77	.60	Quantum Fuel			1807	.68	+.01	+1.5	-38.7
18.82	12.19	Quest Software		25	545	18.21	+.13	+.7	-1.0
4.57	1.08	Quiksilver			1620	4.30	+.04	+.9	+112.9
1.37	.20	RadientPh			580	.26	+.03	+12.6	+7.9
21.89	14.48	Resources Connection			395	18.34	+.20	+1.1	-13.6
9.50	4.70	SRS Labs		65	92	9.73	+.27	+2.9	+32.7
42.50	6.96	STEC Inc.		9	2024	12.37	+.25	+2.1	-24.3
8.25	2.81	SenoRx Inc			19	7.17	+.17	+2.4	-11.4
11.38	5.83	Skilled Healthcare			109	6.76	-.09	-1.3	-9.3
12.87	4.89	Smith Micro		59	75	8.91	+.21	+2.4	-2.6
10.00	1.48	Spectrum Pharm			528	4.93	+.03	+.6	+11.0
5.18	.85	Standard Pacific			2971	4.75	+.41	+9.4	+27.0
10.75	7.39	Sun Healthcare		11	340	9.99	-.24	-2.3	+8.9
10.61	2.30	Sunstone Hotel Inv			813	10.45	-.05	-.5	+17.7
12.52	5.10	TTM Technologies Inc		81	344	9.70	+.22	+2.3	-15.9
4.75	1.60	TigerLogic Corp.			4	3.25	...		-.3
26.55	16.82	Universal Elect.		23	44	23.66	-.04	-.2	+1.9
41.10	16.34	Valeant Pharm		13	970	41.84	+.83	+2.0	+31.6
19.74	9.00	Volcom		48	102	18.83	+.18	+1.0	+12.5
47.44	17.56	Western Digital		10	8510	42.02	+1.38	+3.4	-4.8
4.68	2.77	Wet Seal		30	732	4.73	+.08	+1.7	+37.1
5.25	1.04	Willdan Group Inc			12	2.18	-.27	-11.0	-8.4

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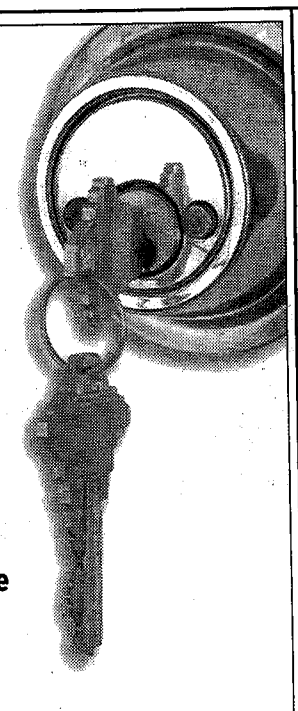

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PUBLIC NOTICE

Action Memorandum for Time-Critical Removal Action at Installation Restoration Program Site 1, Adjacent Property Former Marine Corps Air Station El Toro

The Navy has issued an Action Memorandum (AM) for a time-critical removal action to address potential explosive safety hazards on property adjacent to Installation Restoration Program (IRP) Site 1, Former Explosive Ordnance Disposal Training Range at former Marine Corps Air Station El Toro, Irvine, California. This cleanup action, which began in February 2010, is intended to substantially reduce residual risks to human health and the environment from potential explosive safety hazards. The AM is available for public review at the following locations:

MCAS EL Toro Administrative Record File BRAC Office Building, Building 307, MCAS El Toro Phone: (949) 726-5398	Information Repository Heritage Park Regional Library, 14361 Yale Avenue, Irvine, California Phone: (949) 936-4040.

The Navy invites interested members of the public to review and comment on the AM during a 30-day Public Comment Period, from March 24 to April 23, 2010. Public comments must be postmarked or emailed no later than April 23, 2010. Comments or questions should be addressed to: Mr. James T. Callian, Base Realignment and Closure (BRAC) Environmental Coordinator, BRAC Program Management Office West, 1455 Frazee Road, Suite 900, San Diego, CA 92108-4310, (619) 532-0952, fax (949) 726-6586 or james.callian@navy.mil.

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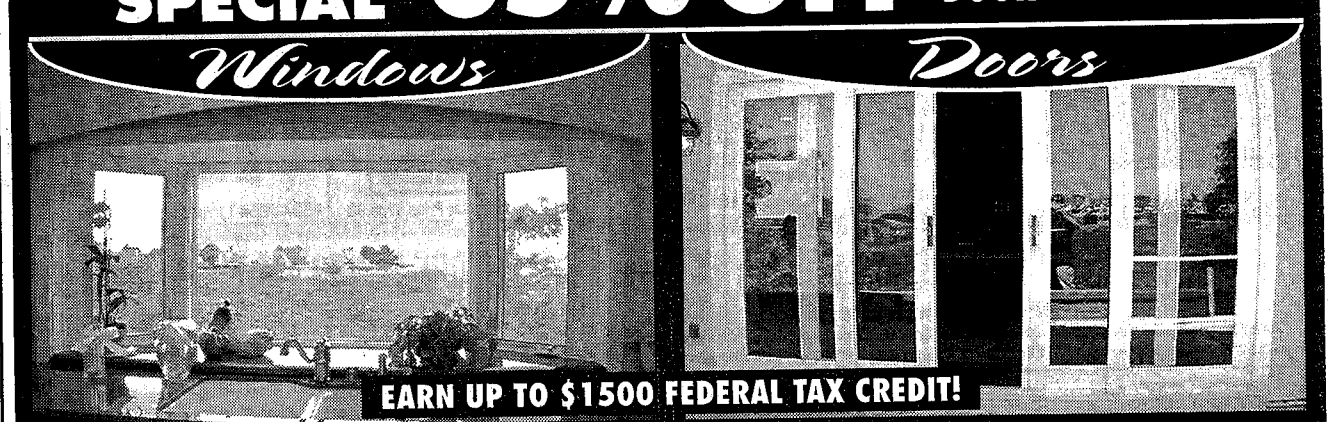

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Bids Wanted

INVITATION FOR BIDS NO. 10-023

Foothill Transit is issuing Invitation for Bids (IFB) No. 10-023 soliciting bids for the construction of an Electric Bus Charging Station and installation of related electrical equipment; and landscaping and facility improvements at the Pomona Transit Center located at 100 West Commercial Street, Pomona, California 91768 as more fully described in the specifications and drawings which are set out in Part IV of the IFB. The Charging Station will be constructed on property owned by the City of Pomona. It is Foothill Transit's intent that the work be completed no later than September 1, 2010.

A mandatory job-walk will be held on March 31, 2010 at 9:00 a.m., PDST. Because of the lack of public parking at the Pomona location, all participants are required to gather on the second floor of the West Covina Administrative Offices located at 100 S. Vincent Ave., West Covina, CA 91790. Bus transportation will be provided to the job walk/site visit no exceptions. A pre-bid conference will follow.

Bids must be submitted on or before 11:00 a.m. PDST on April 21, 2010.

For information on obtaining the IFB, please visit Foothill Transit's website at www.foothilltransit.org.

Attorneys

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Legal Notices

Anyone knowing the whereabouts of Linda Ann Williams or Woods please contact Dwight Woods 562-925-9268 or Paulette Woods 951-369-3266

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TO: All persons with a mobility and/or vision disability who currently or in the future will use (1) Caltrans sidewalks, cross-walks, pedestrian overcrossings and undercrossings, other outdoor pedestrian walkways; (2) Caltrans Park and Ride facilities; and/or (3) other Caltrans facilities in the public right of way, such as certain highway shoulders or temporary routes through and around work zones, owned and/or maintained by Caltrans.

PLEASE READ THIS NOTICE CAREFULLY. YOUR RIGHTS MAY BE AFFECTED BY LEGAL PROCEEDINGS IN THIS LITIGATION.

Two lawsuits, entitled *Californians for Disability Rights, et al. v. California Dept. of Transp., et al., N.D. Cal. Case No. C 06-5125 SBA and Californians for Disability Rights, et al. v. California Dept. of Transp., et al., Alameda County Sup. Ct. No. RG08376549, were filed alleging that the California Department of Transportation ("Caltrans") discriminated against persons with mobility and/or vision disabilities by denying them access to sidewalks, cross-walks, pedestrian overcrossings and undercrossings, other outdoor pedestrian walkways (pedestrian facilities), and Park and Ride facilities. These actions sought injunctive relief only. No claims for damages were made.*

The parties have agreed to settle both actions and class attorneys have recommended District Court approval. The settlement is not an admission of wrongdoing by Caltrans. Nonetheless, to avoid the expense and uncertainty of protracted litigation, the settlement imposes obligations on Caltrans relating to accessibility of its pedestrian facilities, including allocating funding for access improvements, ensuring access at newly constructed and altered facilities, providing a public grievance procedure, and allowing third party inspection of compliance. Caltrans has also agreed to pay the class attorneys' reasonable fees and costs.

The Court will hold a hearing at the U.S. District Court for the Northern District of California, 1301 Clay Street, Oakland, CA 94612, on April 27, 2010, at 1:00 pm, to determine whether the proposed settlement should be approved as fair, reasonable and adequate. If approved by the Court, this settlement will fully settle all class member claims for declaratory and injunctive relief that were or could have been alleged in these actions.

Once approved, this settlement will extinguish and bar claims/lawsuits for injunctive or declaratory relief relating to accessibility of any pedestrian facility or Park and Ride facility owned or maintained by Caltrans and no class member will be able to bring another such lawsuit against Caltrans. No class member will recover statutory damages under the settlement, and nothing in this settlement shall affect class members' rights to pursue damages claims that may otherwise exist.

Any class member may object to approval of this settlement by following the instructions for objections contained in the Detailed Notice of Proposed Class Action Settlement, which is available at no charge by written request to Charles Wahnon, Caltrans Statewide ADA Coordinator, 1823 14th Street, Sacramento, California 95811; or by download on the internet at http://www.CaltransADAPublicRightofWaySettlement.com or by calling (916) 324-1353 or Toll Free (866) 810-6346; Fax (916) 324-1869, TTY 711. You must object by March 30, 2010. If you do not timely submit an objection pursuant to the detailed instructions, you will be deemed to have forever waived any objections to the settlement.

Se ha alcanzado una conciliación por la acción colectiva contra Caltrans que limitará las actuales y futuras demandas/acciones de personas que sufran trastornos motrices con respecto a la accesibilidad de instalaciones de peatones y instalaciones de Park & Ride. Las copias de la Notificación Detallada de la Conciliación de la Acción Colectiva con las instrucciones para interponer objeciones se podrá obtener mediante la descarga en el sitio web http://www.CaltransADAPublicRightofWaySettlement.com o llamando al (916) 324-1353 o llamada gratuita (866) 810-6346.

SUMMONS
(CITACION JUDICAL)
CASE NUMBER (Numero del Caso): BC410010

NOTICE TO DEFENDANT:
(AVISO AL DEMANDADO):
JAMES BURTON BROWN, an individual

YOU ARE BEING SUED BY PLAINTIFF:
(LO ESTA DEMANDANDO EL DEMANDANTE):
ROBERT L. SANFORD, JR., an individual

You have **30 CALENDAR DAYS** after this summons and legal papers are served on you to file a written response at this court and have a copy served on the Plaintiff. A letter or phone call will not protect you. Your written response must be in proper legal form if you want the court to hear your case. There may be a court form that you can use for your response. You can find these court forms and more information at the California Courts Online Self-Help Center (www.courtinfo.ca.gov/selfhelp), your county law library, or the courthouse nearest you. If you cannot pay the filing fee, ask the court clerk for a fee waiver form. If you do not file your response on time, you may lose the case by default, and your wages, money, and property may be taken without further warning from the court.

There are other legal requirements. You may want to call an attorney right away. If you do not know an attorney, you may want to call an attorney referral service. If you cannot afford an attorney, you may be eligible for free legal services from a nonprofit legal services program. You can

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PUBLIC NOTICE
Action Memorandum for Time-Critical Removal Action at Installation Restoration Program Site 1, Adjacent Property Former Marine Corps Air Station El Toro

The Navy has issued an Action Memorandum (AM) for a time-critical removal action to address potential explosive safety hazards on property adjacent to Installation Restoration Program (IRP) Site 1, Former Explosive Ordnance Disposal Training Range at former Marine Corps Air Station El Toro, Irvine, California. This cleanup action, which began in February 2010, is intended to substantially reduce residual risks to human health and the environment from potential explosive safety hazards. The AM is available for public review at the following locations:

MCAS El Toro Administrative Record File BRAC Office Building, Building 307, MCAS El Toro Phone: (949) 726-5398	Information Repository Heritage Park Regional Library, 14361 Yale Avenue, Irvine, California Phone: (949) 936-4040

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Petition of Timo Woischke
ORDER TO SHOW CAUSE FOR CHANGE OF NAME
CASE NUMBER: TS013252

TO ALL INTERESTED PERSONS:
Petitioner Timo Woischke filed a petition with this court for a decree changing names as follows:

Present Name: Timo Woischke

Proposed Name: Timo Lee Duncan

THE COURT ORDERS that all persons interested in this matter shall appear before this court at the hearing indicated below to show cause, if any, why the petition for change of name should not be granted. Any person objecting to the name changes described above must file a written objection that includes the reasons for the objection at least two court days before the matter is scheduled to be heard and must appear at the hearing to show cause why the petition should not be granted. If no written objection is timely filed, the court may grant the petition without a hearing.

NOTICE OF HEARING

Date: April 23, 2010 **Time:** 9:00 am **Dept.:** B **Room:** 906

THE ADDRESS OF THE COURT IS:
SUPERIOR COURT OF CALIFORNIA, COUNTY of
LOS ANGELES SUPERIOR COURT
SOUTH CENTRAL DISTRICT OFFICE
200 W. COMPTON BLVD. ROOM 902
COMPTON, CA 90220

A copy of this Order to Show Cause shall be published at least once each week for four successive weeks prior to the date set for hearing on the petition in the following newspaper of general circulation, printed in this county: The Los Angeles Times.

DATE: March 12, 2010

WILLIAM BARRY
JUDGE OF THE SUPERIOR COURT

NOTICE OF PETITION TO ADMINISTER THE ESTATE OF Felixiana Bargas
Case Number: 00283150-PR-LA-LJC

To all heirs, beneficiaries, creditors, contingent creditors, and persons who may otherwise be interested in the will or estate, or both, of: Feliciana Bargas

A Petition for Probate has been filed by in the Superior Court of California, County of ORANGE.

The petition for Probate requests that Lucy Gallegos be appointed as personal representative to administer the estate of the decedent.

The petition requests authority to administer the estate under the Independent Administration of Estates Act. (This authority will allow the personal representative to take many actions without obtaining court approval. Before taking certain very important actions, however, the personal representative will be required to give notice to interested persons unless they have waived notice or consented to the proposed action.) The independent administration authority will be granted unless an interested person files an objection to the petition and shows good cause why the court should not grant the authority.

A hearing on the petition will be held in this court as follows:

Date: April 8, 2010 **Time:** 1:30 PM **Dept.:** L-73

SUPERIOR COURT OF CALIFORNIA
COUNTY OF ORANGE
341 The City Drive
Orange, CA
Lamoreaux Justice Center

If you object to the granting of the petition, you should appear at the hearing and state your objection or file written objections with the court before the hearing. Your appearance may be in person or by your attorney.

If you are a creditor or a contingent creditor of the decedent, you must file your claim with the court and mail a copy to the personal representative appointed by the court within four months from the date of the first issuance of letters as provided in Probate Code section 9100. The time for filing claims will not expire before four months from the hearing date noticed above.

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Appendix D
Geophysical Survey Report

APPROVAL PAGE

Geophysical Survey Report
Installation Restoration Program Site 1, Adjacent Property
Former Marine Corps Air Station
El Toro, California

Prepared by:
AECOM Technical Services, Inc.
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Senior Geophysicist
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REGISTERED GEOPHYSICIST
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No. 1023
STATE OF CALIFORNIA

Date: 22 Aug 2011

CONTENTS

Approval Page i

Acronyms and abbreviations v

1. INTRODUCTION 1

2. SURVEY METHODS AND EQUIPMENT 1

3. DAILY QUALITY CONTROL TESTS 2

4. GEOPHYSICAL SYSTEM VERIFICATION 2

4.1 Instrument Response 3
4.2 QC Seeding 4

5. DATA ACQUISTION 4

6. DATA PROCESSING 5

6.1 Selection of Anomalies 6
6.2 Summary ofIntrusive Anomaly Investigation 7
6.3 Data Fidelity and Utility 7

7. QUALITY CONTROL 8

7.1 Daily QC Tests 8
7.2 Coverage 9
7.3 Measurement Precision 9
7.3.1 Location accuracy 9
7.3.2 Instrument Precision 9
7.4 Three Phases of Control 9
7.5 Quality Control Blind Seeds 9
7.6 Corrective Measures 10

8. QUALITY ASSURANCE 10

9. RESULTS AND CONCLUSIONS 11

9.1 Results 11
9.2 Conclusions 11

10. REFERENCES 12

TABLES

1 DGM Standardizations, IRP Site 1 Adjacent Property
2 IVS 20 Millimeter Response – Optimal Coupling
3 IVS 20 Millimeter Response – Minimal Coupling
4 Daily Precision Point Test Results
5 Identified Anomalies, IRP Site 1, Adjacent Property

FIGURES

1 Geophysical Survey Areas
2 IRP Site 1 Adjacent Property DGM Surveyed Area
3 IRP Site 1 Adjacent Property DGM Anomaly Locations
4 IRP Site 1 Adjacent Property Investigation Results, Area A
5 EM-61 Mk2 System as Deployed
6 IVS Target Response for Each Channel of Data
7 IVS 0.5-Meter Offset Response for Each Channel of Data
8 IVS Total System Noise/Background Regime Response

ATTACHMENTS

1 Quality Control Review of Digital Geophysical Mapping Files

ACRONYMS AND ABBREVIATIONS

AECOM	AECOM Technical Services, Inc.
AGM	Analog Geophysical Mapping
bgs	below ground surface
CSP	California State Plane
DFW	Definable Feature of Work
DGM	Digital Geophysical Mapping
EM	electromagnetic
EM61	EM61 Mk2 High Sensitivity Metal Detector
EOD	explosive ordnance disposal
ERRG	Engineering/Remediation Resources Group, Inc.
ESS	Explosives Safety Submission
ESTCP	Environmental Security Technology Certification Program
GPS	Global Positioning System
GSV	Geophysical System Verification
HE	high explosive
Hz	Hertz
ID	Inside Diameter
IRP	Installation Restoration Program
IVS	Instrument Verification Strip
MCAS	Marine Corps Air Station
MDAS	Material Documented as Safe
MDEH	Material Documented as an Explosive Hazard
mV	millivolts
NCR	Nonconformance Report
NMEA	National Marine Electronics Association
OSHA	Occupational Safety and Health Administration
QA	quality assurance
QC	quality control
RTK	real-time kinematic
TCRA	Time-Critical Removal Action
TDEM	Time-Domain Electromagnetic
TxRx	transmit/receive
UXO	unexploded ordnance
UXOQCS	UXO Quality Control Specialist

1. INTRODUCTION

AECOM Technical Services, Inc. (AECOM) conducted a geophysical survey for the Time-Critical Removal Action (TCRA) at Installation Restoration Program (IRP) Site 1, Adjacent Property, former Marine Corps Air Station (MCAS) El Toro, California, during February through June, 2010. The objective of the survey was to identify discrete outlier anomalies representative of sources that may have been ejected from demolition activities within the former MCAS El Toro Explosive Ordnance Disposal (EOD) Training Range, and to map the location of any pits or trench-and-fill areas that might be indicative of planned burial of munitions debris. The location of the survey area is shown on Figure 1. The work was conducted in accordance with the Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station El Toro, California (AECOM 2010).

Approximately 32 acres were planned for geophysical survey within Area A of IRP Site 1, Adjacent Property (see Figure 1). Approximately 12 acres were surveyed using Digital Geophysical Mapping (DGM) using a Geonics, Ltd., EM61 MK2 High Sensitivity Metal Detector (EM61) in the adjacent areas north and east of IRP Site 1 (see Figure 2). Nine acres were surveyed using the EM61 coupled with a real-time kinematic (RTK) Global Positioning System (GPS); and an additional 3 acres were mapped using the EM61 and survey tapes and grid stakes as fiducial markers for positioning the data. Approximately 15.4 acres within Area A were surveyed using Analog Geophysical Mapping (AGM), and approximately 5 acres were not surveyed due to difficult terrain, but were visually inspected to the maximum extent practicable.

2. SURVEY METHODS AND EQUIPMENT

An EM-61 MK2, configured using the standard transceiver standoff height of 16 inches with a wheeled cart was used for geophysical data collection (Figure 5 is a photograph of the system as deployed). Geophysical response data were collected along contiguous transects and captured in a Juniper Systems Allegro data logger coincident with position data.

The EM61 is a transient electromagnetic (EM) conductivity system. Transient EM systems record the amplitude of secondary, induced signals as a voltage at discrete times after the signal is generated. Signal amplitude is proportional to the conductivity of the material(s) in which the secondary current is induced. Highly conductive objects (metal) retain the induced signal longer than poorly conductive material(s) (soil). The time intervals recorded by the EM61 capture the persisting signal in conductive media, while missing the early, fast-decaying signals from soil. The EM61 Mk2 variant allows collection of up to four “windows” of data; all four available channels of data were recorded.

Geospatial data were captured using both digital and physical measurements. Data were collected digitally on approximately 9 acres using a Trimble 5700 RTK GPS. The RTK GPS is comprised of a GPS base station receiver occupying a known point in space, and a roving GPS receiver. The rover unit antenna was affixed to a tripod mount centered over the EM61 coils. The GPS base transmitted a correcting signal with 1 second updates to the rover. The rover receiver output this differentially-corrected position data in realtime to the Allegro data logger using a National Marine Electronics Association (NMEA) GGA (fixed data) datastream sentence.

Due to GPS equipment malfunction, geospatial data were collected using physical measurements on approximately 3 acres by utilizing calibrated 300-foot survey tapes tied to grid corners on opposing sides of the grids. Ropes were tautly stretched between equal increments along the survey tapes to mark the transect path. Sequential line and station numbers were recorded in the Allegro data logger, and subsequently spatially referenced to the known coordinates of the corners of the survey grids previously set in the field by a licensed land surveyor.

3. DAILY QUALITY CONTROL TESTS

An equipment warm up period of at least 15 minutes was provided prior to equipment use to ensure the electronics had reached thermal equilibrium prior to conducting the quality control (QC) tests and collection of survey data. Equilibrium was considered to have been reached when the static data response of the system was flat, i.e., constant amplitude ± 0.5 millivolts (mV).

The equipment assembly was checked daily for security of connections prior to use. All cables were secured with electrical tape. These precautions preclude noise interference due to loose or swaying cables. Personnel tests were performed by having each individual in the DGM team approach the EM-61 Mk2 then walk away, while the response was monitored in real-time. Conductive materials were removed from personnel to the greatest extent possible to reduce their electromagnetic signature and contribution to the EM61 response.

Standardization (static spike) tests were conducted for each survey dataset. A response to a standard target was recorded after the equipment had been warmed up and cable/personnel test performed, and again before the instrumentation was powered down. Standardization was accomplished by placing a 3/8-inch diameter steel bar that was two feet in length across the center of the top coil. The average of the first four readings (all collected on 8 February 2010) was used as the standardization response and then used to measure the variation in subsequent response tests. Table 1 presents results of the standardization tests.

A combined latency and dynamic repeatability test was performed for each dataset. The EM-61 Mk2 was towed over a test strip line containing multiple targets in known locations and then towed again over the same line in the reverse direction to obtain measures of the system latency (time-lag between electronic measurement and recording of data), as well as the dynamic response and position repeatability. A pre-survey latency/dynamic noise response was captured, followed by a post-survey latency/dynamic response over the same target recorded in an additional file. The EM-61 Mk2 was also towed over a transect in an area representative of ambient background noise conditions.

The data collected during the latency test were used during data processing to correct positioning errors. Additionally, a daily precision point test was conducted on the GPS by positioning the EM-61 Mk2 zephyer antenna over a known location (groundwater monitoring well 01-PZ01).

After all QC tests were completed the Allegro unit was checked to ensure GPS data was being transmitted to the unit. The collection of RTK GPS data was also checked periodically throughout the geophysical survey to ensure all EM data was properly georeferenced.

4. GEOPHYSICAL SYSTEM VERIFICATION

The Geophysical System Verification (GSV) process, as developed by the U.S. Navy Research Laboratory and the Environmental Security Technology Certification Program (ESTCP, 2009), was used to evaluate and document the performance of the DGM system. The GSV process incorporates use of known target sources, predicted responses based on modeled calculations, and a QC seeding protocol to ensure coverage and attainment of project objectives.

An Instrument Verification Strip (IVS) was installed to verify and demonstrate the instrument's performance, including background noise level and drift. A baseline survey was conducted to characterize the background of the chosen IVS location. An area approximately 150 feet by 50 feet was mapped. Prior to the baseline survey, an unexploded ordnance (UXO) team swept and flagged any potential metallic anomaly locations. A total of eight (8) unknown anomalies were found and pin-flagged along the IVS lanes.

For the Site 1 DGM IVS, four steel pipe nipples were buried in a horizontal orientation with the long axis parallel to the direction of the DGM survey as follows: two 2-inch inside diameter (ID) x 12-inch long cylinders, one at 12 inches bgs, the other at 24 inches bgs; and two 1-inch ID x 4-inch long cylinders, one at 6 inches bgs, the second at 12 inches bgs. Because the smallest munition of concern for the TCRA was a 20 millimeter (mm) high explosive (HE) projectile, five ½-inch ID x 3-inch long pipe nipples (approximate size of a 20 mm projectile) were in included in the IVS target lane.

The IVS was comprised of four parallel transects, each marked with surveyor string stretched between 8-inch steel spikes at the ends of each transect line. Line 1 passed directly over the targets; Line 2 was offset 0.5 meters; Line 3 was offset 1 meter from Line 1, and Line 4 was offset five meters from Line 1. This arrangement tests the optimal horizontal orientation of the cylindrical targets (Line 1), followed by measurement of the least favorable (Line 2 where the long axis of the pipe nipples is perpendicular to the energizing signal from the EM-61 Mk2). Line 3 demonstrated the fall off of detected signal with distance and Line 4 provides a noise/background characterization transect. Figure 6 presents the IVS target response for each channel of data. Text boxes in the figure identify the target and show the depth of burial for each item. Figure 7 presents the IVS 0.5-meter offset response for each channel of data. This figure presents the minimal-coupled response to each buried target. Figure 8 presents the IVS total system noise/background regime response (each channel shown).

4.1 INSTRUMENT RESPONSE

The responses obtained for the IVS targets demonstrated the capability of the EM-61 Mk2 to resolve locations that might contain 40 mm or larger munitions-related items at 12 to 24 inches bgs. The data also show that each of the buried target cylinders simulating 20 mm projectiles was detected at each depth of burial when in the optimal-coupled orientation to the EM61 coil.

The detection of 20 mm-sized objects is, however, problematic and non-detection is not an unexpected occurrence. It is known that small objects will be difficult to detect if the orientation of the EM61 coil as it passes over the target is such that coupling of the transmitted signal is very poor. If the long axis of the target lies parallel to an edge (leading/trailing, or side) of the EM61, signal coupling will be minimal. The secondary signal generated within the target object will also be minimized, and the resulting response may well be within the ambient background response levels. The response to the seed items placed in the test bed at the site illustrates this condition.

The DGM responses for the IVS seeds in an optimal coupling orientation are provided in Table 2 and on Figure 9. The plotted responses are the weighted-sum of all four data channels for five different depths of simulated 20 mm projectiles. A weighted-sum is appropriate because it enhances the later time responses that are indicative of very conductive (i.e., metal) targets. This can be seen by comparing the Channel 3 response with the weighted-sum. As can be seen, the responses to optimally-coupled seed items will clearly be detectable. For seeds at 0 inches to 4 inches bgs, the weighted sum is greater than 2.5 mV and more significantly, the decay progression from channels 1 through 4 is appropriate.

The DGM responses for the IVS seeds in a minimal coupling orientation are provided in Table 3 and on Figure 10. As can be seen, the weighted sum (and the individual channel responses) is significantly reduced. Here, the weighted sum is less than the Channel 3 response, essentially depecting a non-detection of the target items. Note however, that the decay progression (the ratio of response from channel 2 to 1, 3 to 2, and 4 to 3) is very nearly the same, indicating that the physics of the decay for the metal objects is holding true; the amplitude of the secondary signal is simply too small to be resolved versus the background conditions.

4.2 QC SEEDING

On 11 February 2010, the UXO QC Specialist (UXOQCS) coordinated the placement of twenty-four QC blind seeds (1/2-inch diameter by 3-inch long steel pipe nipples) within areas planned for DGM (10 additional QC blind seeds were subsequently placed in areas planned for survey using analog geophysical techniques). However, due to difficult terrain and vegetation, only 9 of the QC blind seeds were placed in the areas accessible to the DGM system prior to surveying. The remaining seed items were placed in areas surveyed using analog geophysical techniques. In accordance with the GSV processes and as specified in the project Work Plan, Section 4.2.3 (ECOM 2010), geophysical detection of the blind seeds was to confirm that the geophysical mapping team covered the area and the investigation procedures and instruments were appropriate to accomplish the task. Recovery of the blind seeds was to confirm that these items were appropriately reacquired and that the team cleared the anomaly and properly documented their findings. The QC requirement was to recover 100 percent of the blind seeds.

5. DATA ACQUISTION

After the daily QC tests were completed, data acquisition was conducted within the DGM survey area. The EM61 Mk2 has a nominal width of approximately 3.28-feet wide; the geophysical signal evaluation footprint is somewhat greater, as can be seen with “step-out” response tests. Based on these parameters, the DGM survey was designed to capture data at 2.5-foot lane spacings, to maximize overlap and minimize the chance of transects being separated by more than 3.28 feet (i.e., greater than the physical footprint of the EM61). The DGM survey transects were delineated with orange traffic cones spaced 25 to 50 feet apart along each transect. Data were collected at a sustainable walking pace of about 4 to 5 feet per second, which yielded a typical along-line spacing of 0.5 feet or less.

Electromagnetic data were recorded at a rate of 10 readings per second (10 Hertz [Hz]). For the majority of the investigation (approximately 9 acres), the geophysical data were interpolated with RTK GPS readings recorded at 1 Hz captured coincident with the EM data. Survey control was tied to a known control point (survey monument provided by a California-licensed land surveyor) by a GPS base station which transmitted a differentially correcting signal to the roving GPS receiver. Horizontal control was based on the North American Datum of 1983 (NAD83), Zone 6 of the California State Plane (CSP) Grid Coordinate System. Horizontal accuracy of the roving units was plus or minus 1 foot. The rover antenna was mounted directly over the center of the EM-61 coils.

Due to a broken radio link antenna connection, approximately 3 acres of the site were surveyed using survey tapes tied to the grid stakes set by the land surveyor. Survey control was accomplished by pulling a rope between corresponding distance increments along survey tapes stretched across the eastern and western boundaries of the mapped grid. Data collection along the rope was triggered by the optical encoder incorporated into the EM61 wheeled cart, which captures a reading nominally at 8-inch intervals. These data were then “warped” to fit the dimensions of the surveyed grids utilizing ESRI ArcGIS.

The data were collected along contiguous tansects to obtain as complete as possible footprint coverage of the accessible portions of the project site. For areas where the across-line separation was greater than the planned maximum of 3.28 feet for more than a 10-foot length, the location of the corresponding data gaps was extracted and gap coordinates were sent to the field team for re-survey. Areas that were deemed inaccessible for DGM due to steep or heavily vegetated terrain that had not been adequately cleared to allow passage of the EM61 cart were instead mapped using analog geophysical methods. With this approach, geophysical coverage was completed as safely as possible.

Approximately 5 acres within the 31-acre Area A were not mapped with either DGM or AGM methods due to unsafe footing associated with steep terrain.

6. DATA PROCESSING

Discrimination of responses caused by conductive objects buried in soil is accomplished by identification of discrete peaks (anomalies) above the background response. Background response levels derive primarily from the electrical properties of the near-surface soils. The short, spike-like character of metal-induced (e.g., munitions-caused) anomalies is readily distinguishable from the responses caused by most geologic sources. The munition of critical concern for this investigation was the 20 mm HE projectile. Because this size geophysical target is difficult to detect, potential anomaly locations were intentionally over-picked, with a consequent high "false-positive" rate.

Processing steps were identical for all datasets obtained during the DGM transect surveys. As the geophysical voltage response and GPS positioning data were captured concurrently in one binary data file (*filename.R61*), only one file per survey grid was required. Data were downloaded from the Allegro data collection unit by transferring the compact flash card upon which the field data were recorded during the survey from the logger to a laptop computer. File names and daily log entries were compared to assure transfer of field data for post-collection processing; all electronic files were transferred.

Field editing of raw digital geophysical data included initial review to check for proper file identification, line number, and transect direction; additionally, the data were compared to field notes to verify the geometry of the survey area or grid. Preprocessing checked noise levels to ensure they were within acceptable limits, and identified anomalous data spikes or dropouts. For cultural features, the field notes were used to help discriminate locations of associated anomalies.

A working copy of each binary file was opened using the Geonics, Ltd., EM61 Mk2 software and converted to an ASCII format (*filename.M61*). Spatial-referencing was accomplished for geophysical data collected coincident with RTK GPS positions by interpolation of the 10 Hz geophysical data with the 1 Hz GPS using Geonics *DAT61Mk2* software. For those grids where data were collected using physical measurements, the data sets were "rubber-ruled" to fit the grid dimensions and corner coordinates in California State Plane space as determined by the land surveyor.

The *filename.M61* files were converted to ASCII .XYZ files and processed using the Oasis *montaj* software platform to perform lag correction and de-median filtering. Latency, or lag-correction, involved identifying the lag between where the equipment was when the geophysical response was measured versus its location when the response was recorded. This was tested using the IVS target lane, mapped in two directions. Fitting the consequent peaks in space yielded the latency to be corrected in the data set. Typically this was a few tenths of a second, which equates to roughly 1.5 feet or less.

Application of a 100-element median as a rolling boxcar filter removed geologic and/or environmental contributions (long wave-length features removed by de-median process) and shifted each data set to a zero datum to obtain response equivalence over the entire DGM survey area. No other manipulations to the data were made.

Once latency had been removed, the median filtered data were used to calculate a weighted-sum of the response from each of 4 time gate channels. A weighted-sum provides a response that incorporates a portion of the response from each channel, with a reduced fraction from the noisier early-time channels and a greater contribution from the later-time channels that are most indicative of highly conductive materials (i.e., metal anomaly sources). The weighted-sum coefficients were selected to generate a response very near to that recorded by Channel 3 in the data. This is essentially the same process that was used for the EM61 Mk1 variant that output only one channel of data (that channel output was a weighted response of four time windows on the decay curve).

After the weighted-sum had been calculated, the data were viewed to identify computed peaks in the data greater than 2.5 mV. The ambient background response for individual and the cumulative data set was determined by calculating the mean and standard deviation of the data and comparing these with a response frequency histogram. The weighted-sum, median-filtered data typically yielded an average of 0.1 mV with a standard deviation of approximately 4 mV. Inspection of a response frequency histogram allowed a visual pick of the ambient background response, approximately 0.1 mV ± 2 mV.

Use of a corresponding 1:5 to 1 signal to noise ratio indicated a detection floor of approxmately 3.1 mV (weighted-sum) would be appropriate; the use of the 2.5 mV peak (not peak above background) effectively ensured that the anomalies were over-picked to assure as complete as possible detection of the small, 20 mm projectiles. A simple peak-picking routine was used to flag each of these peaks as potential anomalies. This process identified 1,085 potential anomalies. These potential anomalies were then inspected for anomaly shape (dimensions, amplitude-to-width, and symmetry) and progression of the signal decay over time through the 4 channels of data captured for each data station.

Duplicates across transect anomalies (adjacent anomalies on contiguous transects) were excluded, as were those with obvious cultural or environmental sources such as fence posts, fence wire, or turning and start/stop anomalies where the electronics backpacks are moved near then away from the EM61 receiver coils. Following data processing as described above, the geophysical data were input to a gridding algorithm (Golden Software Surfer) and a color contoured image was generated. The anomaly locations identified as above were posted as a layer to these geophysical image maps, and the images were visually inspected to identify additional anomalies of interest to be included in the follow-on investigation and resolution of anomalies, as well as anomalies that should be deleted. After removal/addition of appropriate locations, the anomalies that remained were copied to a Microsoft Excel spreadsheet and transmitted electronically to the field personnel for reacquisition and subsequent intrusive investigation.

6.1 SELECTION OF ANOMALIES

Anomaly selection was accomplished by identification of discrete responses distinct from ambient background levels. Criteria for selecting anomalies included the following:

- Weighted-sum all 4 channels greater than 2.5 mV;
- Signal-to-noise ratio greater than 1.5 to 1;
- Amplitudes for all four channels exhibit a decay in response of approximately 50 percent per channel during time gate progression;
- The profile must have a steep semi-bell-shaped curve (no single point spikes or spikes with ramped falloff on only one side of the anomaly);
- Anomalies associated with cultural features removed based on wavelength and curve geometry; and
- Anomalies associated with topographic and vegetation features evident in a satellite image map of the project area were excluded from the Anomaly Table.

The locations of 357 identified anomalies were delivered to the intrusive investigation team. After completion of a comprehensive review of datasets, data processing, and deliverables, 95 additional anomaly locations were identified for a total of 452 anomalies meeting the selection criteria. The anomaly distribution was randomly scattered across the surveyed area, as would be expected for items kicked out by detonation of ordnance in demolition pits associated with activities conducted on the EOD Range over an eighth of a mile away. There were no anomalies representative of buried pits or trenches evident in the data.

6.2 SUMMARY OF INTRUSIVE ANOMALY INVESTIGATION

Intrusive anomaly investigations recovered sources for 260 of the anomalies, including 45 20 mm projectiles and 8 of the 9 QC seed items that were placed within the DGM survey area prior to mapping. There were 179 "No Finds" or "False Positive" anomalies where no metal source could be found. Each of these false positives was re-surveyed with the EM61 to attempt to confirm the anomaly. Confirmation was obtained from only 2 locations, yielding a total of 177 false positives, which is indicative of the over-sampling that was accomplished to ensure recovery of as many 20 mm projectiles as possible. Figure 3 provides the locations of the confirmed and false positive anomalies.

Following the investigation of the DGM anomalies, an AGM survey of the 12-acre DGM area was conducted to improve the confidence in the overall performance, provide additional safety margins, and meet the goal of the TCRA at the site. The AGM approach is well suited to finding small, near-surface metal sources, but will not reliably detect the larger (e.g., 40 mm projectiles or 2.75-inch rockets) individual metal objects at depths of 1.5 feet to 2 feet or more below ground surface (bgs) that are readily detected using DGM methods. The AGM survey was accomplished using Schonstedt GA-52cx magnetometers and White's Pulse Induction Surfmaster all-metals detectors, and resulted in the detection and recovery of an additional 31 20 mm projectiles. Figure 4 shows the distribution of Material Documented as an Explosive Hazard (MDEH) and Material Documented as Safe (MDAS) discovered during both the DGM and AGM surveys within Area A.

6.3 DATA FIDELITY AND UTILITY

External or geologic sources of noise interference were minor. There were small scale measurement drift effects likely associated with temperature within the electronics. These were corrected using a 100-element median value to remove the drift (demedian filter).

Multiple positional excursions and data dropouts were evident in some areas and shown in the GPS track data. These dropouts were caused by terrain masking of satellites and multipath ghosting caused by hill shading. Both the drop-outs (no coverage) and the excursions (poor Positional Dilution of Precision {PDOP} or lock) were readily evident along the plotted track of the DGM surveys. For excursions where the real position was ambiguous, the data were deleted and not used and the affected areas were re-surveyed. The overall accuracy of the GPS positioning was within the specifications of the Work Plan. Position repeatability was within 1.05 feet (see Table 4).

The average weighted sum response of the greater than 750,000 DGM measurements recorded for the survey was 0.14 mV, with a standard deviation of 4.19. Taking the average plus one half the standard deviation indicates that a detection floor minimum of 2.24 mV was experienced for this survey. Because all geophysical methods rely on contrast between the target and the background, it is necessary for an "anomaly" to stand out above the background response. Using a conservative 1.5 to 1 signal to noise ratio for responses close to background gives a detection threshold of 3.35 mV.

For anomaly selection, the threshold floor (absolute, not "above background") of greater than 2.5 mV was applied to the collected data, specifically to ensure that the data were over-sampled to investigate as many potential 20 mm-sourced anomalies as possible. The anomaly selection process yielded 1,085 potential anomalies. Evaluation of signal-to-noise, shape, decay progression, proximity (same source for anomalies on adjacent transects, etc) were applied to reduce the potential list to the 452 picked anomalies.

The data show as complete as possible coverage with DGM, with gaps where it was unsafe or inaccessible to map with the EM61 covered by the analog geophysical survey ("mag and flag" activities) except in areas where it was also deemed unsafe to conduct analog geophysical survey. Daily

QC tests demonstrate that the EM61 was performing within typical specifications and that the RTK GPS was also performing as required except when it was inoperable. Inspection of the data shows that the site was relatively quiet in terms of geophysical characteristics with low levels of ambient noise. Filtering of the data was minimal, requiring only a lag correction and removal of a median value to remove geologic contributions and to shift the data to a constant datum. Anomalies were readily discernable in the presentation of the weighted sum of Channel 1, 2, 3, and 4 responses.

Data processing effectively identified anomalous responses in the data. Ground-truthing (intrusive investigations) showed that most anomalies could be paired with a metal source, although multiple anomalies remained unresolved as "No Finds." This was to be expected because to identify as many 20 mm projectiles as possible, it was necessary for the data processing routines to over-pick from the potential anomalies detected. Examination of the processed data in comparison with the intrusive investigation results shows that the data has good fidelity and utility (see Table 5). The data are repeatable and raw data files have been preserved to ensure objectivity and integrity.

Independent reviews of the data processing procedures, routines, and anomaly selection criteria were performed by two California-registered geophysicists (see Attachment 1). Both reviews noted systematic shortcomings in documentation of anomaly selections; rationale for exclusion of potential anomalies (those with greater than 2.5 mV weighted sum responses) was not recorded prior to completion of the Project Geophysicist's review. The excluded potential anomalies were subsequently annotated with rationale specifying poor decay, noise spikes, lack of symmetry, or same-sources as a selected anomaly (e.g., adjacent anomalous responses on two or more contiguous transects). Overall, the independent reviews concluded that the steps or procedures used were consistent with industry practice and the anomaly selection criteria were appropriate to the munitions of concern for the IRP Site 1, Adjacent Area TCRA, although documentation of the processes followed could have been more thorough. A Memorandum reporting the results of the two reviews is provided as Attachment 1.

7. QUALITY CONTROL

The following sections summarize the QC aspects of the project.

7.1 DAILY QC TESTS

- Cable shake tests showed no significant variation in response during the tests.
- Responses for personnel other than the individual wearing the GPS backpack were negligible; typical response was approximately 40 mV for personnel wearing the GPS backpack.
- Each standardization response (spike response minus background) was within performance specifications in the Work Plan. The average standardization response was 232.65 mV. The average of all responses was 232.3 mV with a standard deviation of 3.1 mV (see Table 1).
- No changes in the noise regine were evident between the pre- and post-survey runs of the IVS test lanes.
- Latency for the equipment varied between 0.4 and 0.5 seconds. This equates to approximately 2.5 feet or less. Some variability in the latency is likely to have been caused by hill shading, as the topography occasionally caused position excursions in the GPS data.
- Point precision (static tests) within 1.05 feet (see Table 4).
- Dynamic response and position repeatability tests results were within 92.62 percent and 1.37 feet, respectively.

7.2 COVERAGE

- All accessible areas of the planned DGM survey area were surveyed
- Gaps in DGM footprint coverage were identified and end points of linear gaps were provided to field team
- Gaps that could be accessed with the DGM equipment were re-surveyed to obtain coverage
- Gaps in DGM data due to inaccessibility constraints were surveyed using analog geophysical methods where possible (AGM or "mag and flag").
- Along line requirement: 98 percent at 1 foot or less between stations
- Data collected at 10 Hz and less than 5 feet per second (0.5-foot station intervals).

7.3 MEASUREMENT PRECISION

7.3.1 Location accuracy

- Static reference position test performed daily prior to data collection
  - Mean offset to reference point: 1.05 feet
  - Standard deviation: 0.15 feet
  - Maximum offset: 1.56 feet
- Dynamic (moving) position repeatability
  - Mean dynamic offset: 1.37 feet
  - Standard deviation: 0.52 feet
  - Maximum offset measured: 2.98 feet

7.3.2 Instrument Precision

- Daily static spike or standardization test response performance criterion: ± 10 percent
- Multiple static tests performed daily; response performance measured: ± 3 percent
- Dynamic response repeatability tests were performed for each survey event or grid; dynamic response repeatability: 92 percent.

7.4 THREE PHASES OF CONTROL

A three-phase quality control process was implemented for specific Definable Features of Work (DFW's) to ensure that work was compliant with the project Work Plan (AECOM 2010). The three phases of control included preparatory, initial, and follow-up checks, and audits of the DGM survey equipment, field processes, and data. A preparatory phase inspection for DGM was held on 4 February 2010, an initial phase inspection was held on 8 February 2010, and a follow-up phase inspection was held on 10 March 2010. No deficiencies or items for follow-up were noted during the initial and follow-up phase inspections.

7.5 QUALITY CONTROL BLIND SEEDS

Seven of the 9 QC blind seeds placed within the DGM survey area prior to mapping were recovered during the first round of intrusive investigations; two were not (QC seeds A-10 and A-5). The QC seeding process is intended to assure coverage, detection, and reacquisition capacities. When a seed is "missed", the data and processes are re-evaluated to determine cause and corrective actions needed:

was the area where the seed item was placed not surveyed? Was the coupling between the EM61 and the seed item sufficient to provide the electrical contrast needed for detection? Did the data processing identify an anomalous response for the seed? Were the reacquisition teams able to navigate to the mapped location?

The point at which seed A-10 was located lies under the footprint of the coverage of the DGM survey system. Because the location of the seed was mapped by the DGM, the seed was not missed due to coverage gaps. Because it can be demonstrated that the equipment was functioning properly both before and after the seeded area was mapped, the seed was not missed due to equipment problems. Therefore, it is clear that the coupling of the primary signal to the target was such that a secondary current signal induced in the seed did not have sufficient amplitude and decay characteristics to be detected and recognized as an anomaly.

This is typically because the target was either too deeply buried or the orientation of the long axis of the blind seed item was such that electrical coupling was minimized. In this instance, the geophysical equipment passed directly over the reported seed location. Because the seed locations were surveyed with a different GPS datum than that with which the DGM data were mapped, there was an offset between apparent and recorded positions (WGS84 versus NAD83 yield an offset of approximately 4 to 5 feet in Southern California). There was a small amplitude anomaly located approximately 5 feet from the reported location of seed A-10, and this anomaly was flagged for evaluation as a potential target. The shape of the anomaly and, in particular, the decay progression were inconsistent with the responses from seed items in the test bed, other seed items located and recovered at the site, and 20 mm projectiles that were detected and recovered from this site (the anomaly had an abrupt fall-off in the late channel response). For that reason, the anomaly was not selected for inclusion on the Anomaly Table. After an extensive QC review of the anomalies and the selection criteria used, the anomaly that was near the position of seed A-10 would still be not considered an anomaly of interest.

The second missed blind seed (A-5) is indicative of a “delivery” problem. Review of the data showed a clear anomalous response in the immediate vicinity of the seeded item: 9 millivolt response, good symmetry, and an appropriate progression of voltage decay. The anomaly location was not provided on the initial Anomaly Table. Following a review of all datasets, data processing, and the anomalies for each data set, 95 additional anomalies were added to the Anomaly Table, including the location for blind seed A-5.

7.6 CORRECTIVE MEASURES

- All potential anomalies were reviewed to ensure all appropriate anomalies were provided for intrusive investigation. The review revealed 95 anomalies that were subsequently added to the Anomlay Table.
- Review indicated one seed (A-5) to be added to the final Anomaly Table.
- One other seed was not detected; a review of equipment tests, coverage, and data processing indicated that the blind seed was not detected due to the limitations of the technologies employed.

8. QUALITY ASSURANCE

Engineering/Remediation Resources Group, Inc. (ERRG) were contracted by the Navy and provided third-party quality assurance (QA) to assess compliance with the approved work plan, verify compliance with the approved Explosives Safety Submission (ESS), and confirm that all work was conducted in a safe manner. That assessment included review of the anomaly picks and investigation results. ERRG prepared an independent report of their findings.

9. RESULTS AND CONCLUSIONS

A total of 12 acres were surveyed using DGM. The digital geophysical survey detected 1,085 potential anomalies (Table 5). A total of 452 DGM anomalies were identified for investigation. Microsoft Excel tables containing coordinates of these selected anomalies were provided to the dig teams for intrusive investigation. Anomaly reacqusition was conducted using an RTK GPS rover, and positioning was verified daily against a known location (a groundwater monitoring well). Anomalies with variations or results not compatible with the standard data analysis or expectations were reviewed to determine causative features that may be present. Consistent with Section 2.5.8.4 of the project Work Plan (AECOM 2010), if an anomaly was not relocated using the White hand-held all-metals detector ("no find" or false positive), the EM-61 was used to confirm the anomaly presence. There were a total of 179 "no finds"that required verification with the EM-61; re-survey confirmed anomalies for two of these "No Finds," yielding 275 anomalies with reacquired locations. The remaining 177 anomalies could not be replicated and are therefore considered to be false positives derived from terrain and/or incidental noise responses caused by inadvertent closure between the system electronics and the transeceiver, such as a turning or start/stop points.

9.1 RESULTS

- All anomaly sources were recovered at 12 inches or less bgs, as was expected for items scattered and ejected from demolition pits over an eighth of a mile away.
- 47 anomaly investigations resulted in collection of material documented as an explosive hazard, 45 of which were 20 mm projectiles.
- 72 anomaly investigations resulted in collection of material documented as safe.
- 141 DGM anomaly investigations resulted in collection of cultural debris.
- 177 DGM anomalies were determined to be false positives, with no metal source discovered and re-survey with the EM61 unable to replicate the anomalies.

Table 5 provides a summary of the results of each of the 452 anomaly investigations.

9.2 CONCLUSIONS

- Ambient background response was indicative of a relatively "quiet" geophysical environment; no significant mineralization detected (geologic anomalies), and no persistent cultural noise sources (radar signals, radio transmission broadcasts, utility lines, overhead powerlines, etc.) were detected.
- Outlier anomalies associated with kick out debris from IRP Site 1 were randomly distributed through the IRP Site 1, Adjacent Property area.
- Consistent with the conceptual site model for IRP Site 1, Adjacent Property, subsurface anomalies were found at a depth of 12 inches bgs or less. The results indicated no evidence of burial pits or trenches.
- Although a conservative anomaly selection process was used for DGM anomaly identification, as evidenced by the large number of "no finds"/false positives for the project, use of the EM-61 Mk2 did not detect all 20 mm projectiles on the site, and an additional 31 20 mm projectiles were collected using analog detectors. Non-detection of these projectiles is likely the result of minimal signal coupling and the consequent low signature response for the 20 mm projectile.

10. REFERENCES

AECOM Technical Services, Inc. (AECOM). 2010. *Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station El Toro, California.* February.

Environmental Security Technology Certification Program (ESTCP). 2009. Draft Report, Geophysical System Verification (GSV): A Physics-Based Alternative to Geophysical Prove-Outs for Munitions Response, U.S. Navy Research Laboratory.

Tables

Table 1. DGM Standardizations, IRP Site 1 Adjacent Property

Filename	Spike (millivolts)	Background (millivolts)	Standard Response (millivolts)	Percentage of Standard Response	Pass / Fail
020813B	235.0	0.0	235.0	N/A	N/A
020813D	227.7	-0.7	228.4	N/A	N/A
020815A	232.7	-2.1	234.8	N/A	N/A
020818B	230.8	-1.6	232.4	N/A	N/A
020913B	232.2	0.0	232.2	100%	pass
020915B	229.0	-1.0	230.0	99%	pass
020916A	235.6	0.3	235.3	101%	pass
020918B	219.0	-7.2	226.2	97%	pass
021011B	231.5	-3.0	234.5	101%	pass
021014B	224.0	-5.0	229.0	98%	pass
021110(1)	231.5	-0.4	231.9	100%	pass
021110(2)	230.0	0.7	229.3	99%	pass
021210(1)	235.0	0.2	234.8	101%	pass
021210(2)	227.3	0.0	227.3	98%	pass
021210(3)	235.0	0.0	235.0	101%	pass
021210(4)	232.3	-0.7	233.0	100%	pass
021610(1)	233.5	0.0	233.5	100%	pass
021610(2)	232.5	-0.7	233.2	100%	pass
021610(3)	236.5	0.0	236.5	102%	pass
21710(1)	238.0	-1.4	239.4	103%	pass
021717C	235.5	0.5	235.0	101%	pass
021719A	233.6	0.6	233.0	100%	pass
021811A	233.5	-1.7	235.2	101%	pass
021814B	230.0	-4.9	234.9	101%	pass
021816A	235.0	0.4	234.6	101%	pass
021818B	240.0	1.7	238.3	102%	pass
021911A	235.0	0.1	234.9	101%	pass
021914B	230.7	0.6	230.1	99%	pass
021915A	235.0	0.0	235.0	101%	pass
022211A	229.0	-9.0	238.0	102%	pass
022215B	222.3	-10.1	232.4	100%	pass
022311A	236.8	-1.4	238.2	102%	pass
022314B	223.9	-5.8	229.7	99%	pass
022315A	231.3	-0.3	231.6	100%	pass
022317B	231.7	0.8	230.9	99%	pass
022411A	229.8	0.7	229.1	98%	pass
022414B	231.5	-1.4	232.9	100%	pass
022415A	234.3	-0.2	234.5	101%	pass
022417B	231.1	1.9	229.2	99%	pass
022517C	227.0	-4.4	231.4	99%	pass
022612A	230.1	-0.2	230.3	99%	pass
022615B	232.0	-2.9	234.9	101%	pass

Table 1. DGM Standardizations, IRP Site 1 Adjacent Property

Filename	Spike (millivolts)	Background (millivolts)	Standard Response (millivolts)	Percentage of Standard Response	Pass / Fail
030111A	232.0	-1.6	233.6	100%	pass
030115A	227.4	-4.1	231.5	100%	pass
030117B	223.0	-6.0	229.0	98%	pass
030311A	237.0	0.0	237.0	102%	pass
030314B	224.7	-4.4	229.1	98%	pass
030315A	231.5	-3.3	234.8	101%	pass
030317B	228.7	-1.7	230.4	99%	pass
030411A	229.7	-0.3	230.0	99%	pass
030413B	227.0	-0.6	227.6	98%	pass
030415A	225.0	-3.7	228.7	98%	pass
030417B	231.6	-0.5	232.1	100%	pass
030511A	230.1	-0.8	230.9	99%	pass
030514B	224.1	-3.5	227.6	98%	pass
030811A	233.0	-1.9	234.9	101%	pass
030816A	225.0	-2.0	227.0	98%	pass
030815B	228.0	-3.4	231.4	99%	pass
030817B	230.5	-1.9	232.4	100%	pass
030911A	235.0	-0.5	235.5	101%	pass
030915D	225.8	-4.5	230.3	99%	pass
030916B	232.7	2.5	230.2	99%	pass
030917F	229.0	-1.5	230.5	99%	pass
031011A	227.5	0.2	227.3	98%	pass
031015B	230.0	0.4	229.6	99%	pass
031211A	228.5	0.0	228.5	98%	pass
031212C	222.8	-3.2	226.0	97%	pass
031515A	232.7	-6.5	239.2	103%	pass
031518B	227.8	-7.0	234.8	101%	pass
031613A	235.6	-0.4	236.0	101%	pass
031614C	224.8	-8.9	233.6	100%	pass

Reference Standard Response (average of first 4)	232.65
Mean	232.3
Standard Deviation	3.1
Minimum	226.2
Maximum	239.4
Range Minimum	209.0
Range Maximum	255.5

Table 2. IVS 20 Millimeter Response - Optimal Coupling

Seed Item dimentions	Depth (inches bgs)	Easting (feet)	Northing (feet)	Channel 1 Response (mV)	Channel 2 Response (mV)	Channel 3 Response (mV)	Channel 4 Response (mV)	Weighted Sum Response (mV)
0.5 inches ID x 3 inches	0	6124408.21	2198058.00	20.47	13.36	6.68	2.82	7.03
0.5 inches ID x 3 inches	2	6124414.49	2198056.19	11.72	8	4.05	2.07	4.33
0.5 inches ID x 3 inches	4	6124423.91	2198052.87	8.04	4.9	2.73	1.32	2.82
0.5 inches ID x 3 inches	6	6124426.86	2198052.32	4.71	3.58	2.07	1.13	2.03
0.5 inches ID x 3 inches	8	6124442.72	2198046.03	4.71	3.38	1.7	0.47	1.63

Notes:

bgs = below ground surface

ID = inside diameter

IVS = Instrument Verification Strip

mV = millivolts

Table 3. IVS 20 Millimeter Response - Mimimal Coupling

Seed Item dimentions	Depth (inches bgs)	Easting (feet)	Northing (feet)	Channel 1 Response (mV)	Channel 2 Response (mV)	Channel 3 Response (mV)	Channel 4 Response (mV)	Weighted Sum Response (mV)
0.5 inches ID x 3 inches	0	6124408.21	2198058.00	4.43	3.13	1.91	0.96	1.82
0.5 inches ID x 3 inches	2	6124414.49	2198056.19	2.43	1.91	1.21	0.43	1.03
0.5 inches ID x 3 inches	4	6124423.91	2198052.87	0.34	0.43	0.26	0.17	0.24
0.5 inches ID x 3 inches	6	6124426.86	2198052.32	0.88	0.43	0.17	-0.08	0.17

Notes:

bgs = below ground surface

ID = inside diameter

IVS = Instrument Verification Strip

mV = millivolts

Table 4. Daily Precision Point Test Results

Date	Northing	Easting	Offset/Northing (feet)	Offset/Easting (feet)	Total Offset (feet)
9-Feb-2010	2198039.40827	6124520.06445	0.76827	-0.66555	1.02
10-Feb-2010	2198039.42133	6124520.21759	0.78133	-0.51241	0.93
17-Feb-2010	2198039.78576	6124519.67646	1.14576	-1.05354	1.56
18-Feb-2010	2198039.51171	6124519.96326	0.87171	-0.76674	1.16
19-Feb-2010	2198039.31366	6124520.25024	0.67366	-0.47976	0.83
22-Feb-2010	2198039.32508	6124520.06883	0.68508	-0.66117	0.95
23-Feb-2010	2198039.46823	6124520.05920	0.82823	-0.67080	1.07
24-Feb-2010	2198039.40085	6124520.08970	0.76085	-0.64030	0.99
25-Feb-2010	2198039.45749	6124520.01443	0.81749	-0.71557	1.09
26-Feb-2010	2198039.51361	6124519.97633	0.87361	-0.75367	1.15
1-Mar-2010	2198039.30543	6124519.97177	0.66543	-0.75823	1.01
2-Mar-2010	2198039.72709	6124520.18377	1.08709	-0.54623	1.22
3-Mar-2010	2198039.43775	6124520.05303	0.79775	-0.67697	1.05
4-Mar-2010	2198039.49300	6124520.00478	0.85300	-0.72522	1.12
5-Mar-2010	2198039.24770	6124520.12647	0.60770	-0.60353	0.86
8-Mar-2010	2198039.39025	6124520.12505	0.75025	-0.60495	0.96
9-Mar-2010	2198039.62545	6124520.07674	0.98545	-0.65326	1.18
10-Mar-2010	2198039.33774	6124520.19446	0.69774	-0.53554	0.88
11-Mar-2010	2198039.48710	6124520.13990	0.84710	-0.59010	1.03
12-Mar-2010	2198039.49860	6124520.18569	0.85860	-0.54431	1.02
15-Mar-2010	2198039.48235	6124520.11787	0.84235	-0.61213	1.04
16-Mar-2010	2198039.44920	6124520.10220	0.80920	-0.62780	1.02
		Monitoring Well 01-PZ01 Surveyed Coordinates		2198038.64	6124520.73

1.05

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
1	020910-DGM-0001	6123454.76	2197508.27	47.32	35.99	22.69	11.24	20.84	Cultural Debris (wrench)	02080910_sp-ft
2	020910-DGM-0002	6123897.23	2197965.83	34.87	26.01	16.11	7.88	14.96	20mm Fuze Piece	02080910_sp-ft
3	020910-DGM-0003	6123928.04	2197917.29	45.20	33.62	21.40	12.92	20.64	Cartridge Base	02080910_sp-ft
4	020910-DGM-0004	6123931.22	2197924.61	48.65	37.49	24.90	12.76	22.40	No Find	02080910_sp-ft
5	020910-DGM-0005	6123958.79	2197996.58	27.86	20.52	12.54	6.90	12.08	Cultural Debris	02080910_sp-ft
6	020910-DGM-0006	6123966.14	2197987.22	117.36	86.33	51.42	23.87	48.34	No Find	02080910_sp-ft
7	020910-DGM-0007	6124029.26	2197987.14	33.09	23.78	13.68	6.53	13.25	Cultural Debris (pin flag)	02080910_sp-ft
8	020910-DGM-0008	6123886.84	2197876.19	20.19	16.58	10.91	5.54	9.70	Cultural Debris (wire)	02080910_sp-ft
9	020910-DGM-0009	6123892.86	2197935.56	17.28	14.37	8.98	4.54	8.16	20mm Cartridge Base	02080910_sp-ft
10	021010-DGM-0001	6123214.00	2197246.05	24.46	18.73	12.02	6.01	10.95	20mm Fuze	021010_sp1
11	021010-DGM-0002	6123283.37	2197393.78	24.43	18.74	12.16	7.21	11.49	Cartridge Base	021010_sp1
12	021010-DGM-0003	6123286.09	2197340.29	16.57	12.42	7.57	3.62	7.04	Cultural Debris (wire)	021010_sp1
13	021010-DGM-0004	6123328.26	2197443.65	26.97	18.44	10.38	5.23	10.42	Frag	021010_sp1
14	021010-DGM-0005	6123187.86	2197234.25	26.14	20.06	13.84	6.64	12.04	Frag	021010_sp1
15	021115A1_001	6123096.936	2197418.186	9.740434	20.96	15.69	10.21	6.19	No Find	021115A1
16	021115A1_002	6123074.047	2197379.905	14.89642	43.04	27	14.02	6.62	No Find	021115A1
17	021115A1_003	6123078.09	2197499.135	6.708252	17.16	12.32	6.99	3.06	Cultural Debris	021115A1
18	021115A1_004	6122974.198	2197514.647	2.906689	8.11	5.57	2.92	1.14	Cultural Debris (pliers)	021115A1
19	021115A1_005	6123047.134	2197524.15	3.133833	7.63	5.43	3.24	1.66	Frag	021115A1
20	021115A1_006	6123017.516	2197532.245	2.594283	7.99	5.18	2.55	0.79	Cultural Debris	021115A1
21	021115A1_007	6123072.402	2197374.087	19.091773	55.35	34.5	18.4	8.22	Aluminum 40mm Practice	021115A1
22	021115A1_008	6123042.756	2197545.192	7.345088	16.8	12.43	7.67	4.22	No Find	021115A1
23	021115A1_009	6123076.806	2197375.334	13.881193	39.97	24.9	13.18	6.23	Cultural Debris	021115A1
24	021115A1_010	6123100.152	2197425.77	6.373672	13.88	10.21	6.7	4.02	No Find	021115A1
25	021115A1_011	6123159.151	2197460.226	3.059966	8.84	5.38	2.9	1.41	Small Arms (Casings)	021115A1
26	021115A1_012	6123093.928	2197490.815	4.620792	9.42	7.52	4.92	2.99	No Find	021115A1
27	021115A1_013	6123132.684	2197538.61	17.671997	38.19	28.48	18.5	11.2	Cultural Debris	021115A1
28	021115A1_014	6123023.714	2197494.44	8.275577	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
29	021115A1_015	6123008.823	2197466.603	28.949806	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
30	021115A1_016	6123162.915	2197468.444	3.721423	9.31	6.53	3.73	1.95	20mm Projectile & 20 mm Cartridge Case	021115A1
31	021115A1_017	6123041.583	2197547.583	7.048731	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
32	021115A1_018	6123084.155	2197376.136	6.455769	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
33	021115A1_019	6123084.499	2197372.637	12.776381	40.09	22.83	12.05	5.01	No Find	021115A1
34	021115A1_020	6123028.562	2197496.082	47.912781	143.95	89.93	45.36	18.64	Cultural Debris	021115A1
35	021115A1_021	6123055.375	2197450.763	25.943361	58.19	42.35	27.6	15.46	No Find/Cultural Debris	021115A1
36	021115A1_022	6123006.266	2197543.073	3.1	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
37	021115A1_023	6123063.09	2197539.368	18.1	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
38	021115A1_024	6123033.442	2197521.25	30.6	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
39	021115A1_025	6122981.56	2197503.132	7.7	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
40	021115A1_026	6123085.325	2197495.72	16.6	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
41	021115A1_027	6123163.973	2197485.014	16.1	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
42	021115A1_028	6123124.855	2197454.132	7.3	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
43	021115A1_029	6123119.502	2197452.485	5.1	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
44	021115A1_030	6123008.325	2197408.014	14.6	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
45	021115A1_031	6123084.913	2197373.425	13.5	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
46	021115A1_032	6123040.031	2197466.897	5.7	--	--	--	--	Anomaly Not Investigated - Grid remapped using RTK GPS	021115A1
47	021215A-001	6123061.41	2197342.13	81.08	51.98	29.48	13.02	29.23	Frag	021215A_021613A
48	021215A-002	6123109.24	2197305.64	40.80	20.30	10.71	5.02	12.12	Cultural Debris	021215A_021613A
49	021215A-003	6123090.66	2197299.73	54.82	26.56	12.71	5.39	15.19	Cultural Debris	021215A_021613A
50	021215A-004	6123104.63	2197297.15	107.72	67.77	42.13	23.30	41.90	Cultural Debris	021215A_021613A
51	021215A-005	6123076.60	2197288.14	42.67	20.35	9.52	4.20	11.68	Cultural Debris & Frag	021215A_021613A
52	021215A-006	6123095.76	2197269.92	39.61	19.18	10.80	5.78	12.17	40mm Practice	021215A_021613A
53	021215A-007	6123032.29	2197265.38	50.94	23.60	11.62	4.80	13.81	Cultural Debris	021215A_021613A
54	021215A-008	6123183.79	2197238.16	28.65	12.93	7.15	3.56	8.23	20 mm Projectile	021215A_021613A
55	021215A-009	6123166.81	2197230.14	43.74	22.70	12.21	6.67	13.87	Cultural Debris	021215A_021613A
56	021215A-010	6123083.15	2197224.26	114.22	65.60	34.01	14.69	36.58	Partial Base Fuze	021215A_021613A
57	021215A-011	6123008.62	2197222.26	40.23	21.05	12.39	7.07	13.46	40mm Practice	021215A_021613A
58	021215A-012	6123086.49	2197192.12	70.50	44.09	28.01	16.20	27.89	M118 Practice Round	021215A_021613A
59	021215A-013	6123089.82	2197166.99	70.55	42.04	22.14	8.13	22.72	Partial Base Fuze & Cultural Debris	021215A_021613A
60	021215A-014	6123071.77	2197161.62	88.77	47.33	21.35	8.13	25.21	Cultural Debris	021215A_021613A
61	021215A-015	6123092.69	2197159.33	102.35	53.92	24.90	10.36	29.45	No Find	021215A_021613A
62	021215A-016	6123025.39	2197157.90	136.00	88.96	52.86	27.74	52.64	M118 Practice Round	021215A_021613A
63	021215A-017	6123024.93	2197146.57	46.61	25.39	14.13	6.99	15.19	Cultural Debris (wrench)	021215A_021613A
64	021215A-018	6123098.43	2197136.72	88.89	51.49	27.93	14.04	30.00	Frag & Cultural Debris	021215A_021613A
65	021215A-019	6123069.49	2197101.11	117.89	78.33	46.01	23.03	45.44	M118 Practice Round	021215A_021613A
66	021810-001	6122791.85	2197412.18	46.26	35.16	22.36	11.00	20.42	No Find	021811C_021817A
67	021810-002	6123372.24	2197590.03	32.47	18.24	9.63	5.42	10.85	338 Base Fuze	021811C_021817A
68	021810-003	6123262.84	2197573.37	30.12	23.07	14.59	7.16	13.33	No Find	021811C_021817A
69	021810-004	6123258.90	2197552.60	63.90	45.66	27.68	15.34	27.01	Cultural Debris	021811C_021817A
70	021810-005	6123248.60	2197498.39	50.78	37.56	23.75	13.39	22.61	M118 Practice Round	021811C_021817A
71	021810-006	6123217.87	2197477.49	58.59	38.19	19.97	9.10	20.76	Frag	021811C_021817A
72	021810-007	6123106.33	2197307.02	31.35	22.67	13.25	7.32	13.13	40mm Practice Round	021811C_021817A
73	021810-008	6122933.55	2196907.45	1022.20	754.14	455.31	268.83	448.79	Cultural Debris (survey marker)	021811C_021817A
74	021810-009	6122966.46	2196794.10	113.02	76.77	42.69	20.71	42.90	Frag	021811C_021817A
75	021810-010	6122868.83	2196788.79	70.39	50.65	29.77	15.16	28.90	40 mm Practice Round	021811C_021817A
76	021810-011	6123034.91	2196781.72	218.89	162.97	110.11	70.97	105.11	Cultural Debris (pipe)	021811C_021817A
77	021910-001	6122821.54	2197030.09	50.35	34.64	18.52	9.35	19.11	Frag	021910_sp
78	021910-002	6123213.17	2197831.95	44.39	32.77	19.25	9.37	18.40	No Find	021910_sp
79	021910-003	6122851.21	2196985.05	36.56	26.97	16.05	7.36	15.05	No Find	021910_sp
80	021910-004	6123301.16	2197648.63	14.76	11.55	7.76	4.31	7.06	No Find	021910_sp
81	021910-005	6123262.09	2197745.51	14.22	10.65	6.93	3.99	6.52	No Find	021910_sp
82	022213A-019	6122887.73	2196939.57	7.47	7.97	6.85	6.58	6.48	No Find	022213a
83	022213A-016	6122852.93	2196972.32	8.73	5.45	2.87	1.40	3.05	Frag & Cultural Debris	022213a
84	022213A-010	6122826.03	2196914.93	9.65	6.81	3.76	2.05	3.85	No Find	022213a
85	022213A-008	6122773.92	2196924.37	4.83	3.76	2.60	1.61	2.41	No Find	022213a
86	022213A-002	6122849.75	2196827.87	9.60	6.68	3.83	1.88	3.77	No Find	022213a
87	022213A-012	6122771.99	2196991.08	5.05	3.73	2.10	1.09	2.08	Cultural Debris	022213a
88	022213A-003	6122751.04	2196924.34	8.48	5.63	2.77	1.52	3.08	Base Fuze	022213a
89	022213A-005	6122750.17	2196928.35	15.52	11.04	6.73	3.20	6.33	No Find	022213a
90	022213A-004	6122745.11	2196929.05	10.29	6.57	3.05	0.95	3.24	No Find	022213a
91	022310-001	6122932.04	2197393.59	36.35	27.76	18.35	10.51	17.04	M118 Practice Round	022310_sp-1
92	022310-002	6122922.51	2197452.15	73.37	55.83	36.45	21.30	34.26	M118 Practice Round	022310_sp-1
93	022310-003	6122918.20	2197594.91	14.69	10.28	6.11	3.01	5.90	Cultural Debris	022310_sp-1
94	022310-004	6122897.50	2197409.26	46.26	34.32	21.71	12.61	20.80	M118 Practice Round	022310_sp-1

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
95	022310-005	6122892.12	2197552.29	26.74	15.75	7.08	2.30	7.93	No Find	022310_sp-1
96	022310-006	6122854.70	2197507.00	21.29	14.97	8.75	4.28	8.50	No Find	022310_sp-1
97	022310-007	6122835.45	2197479.30	58.82	37.24	19.32	7.94	19.99	Base Fuze	022310_sp-1
98	022310-008	6122828.74	2197407.97	103.47	72.12	41.07	20.99	40.91	Frag	022310_sp-1
99	022310-009	6122803.66	2197380.16	36.23	27.46	17.64	10.70	16.89	Frag (aluminum)	022310_sp-1
100	022310-010	6122776.15	2197481.05	557.57	361.90	192.49	86.59	197.93	Cultural Debris	022310_sp-1
101	022310-011	6122764.18	2197422.09	37.98	28.46	18.54	10.67	17.44	Cultural Debris	022310_sp-1
102	022310-012	6122784.75	2197473.08	12.13	8.08	4.42	2.16	4.51	Cultural Debris	022310_sp-1
103	022310-013	6122885.04	2197454.29	5.32	4.62	4.18	3.91	3.95	No Find	022310_sp-1
104	022310-014	6122875.32	2197452.88	4.20	3.47	2.84	2.70	2.81	No Find	022310_sp-1
105	022310-015	6122858.63	2197356.28	9.12	6.44	4.42	2.67	4.16	40 mm Practice Round	022310_sp-1
106	022310-016	6122931.25	2197635.31	2.86	3.21	2.97	2.87	2.74	No Find	022310_sp-1
107	022310-017	6122928.84	2197630.69	5.57	4.61	3.14	1.57	2.73	No Find	022310_sp-1
108	022410-001	6124168.01	2198200.15	18.34	14.25	8.61	4.61	8.18	20 mm Projectile	022410_spft
109	022410-002	6124157.68	2198208.58	4.29	4.19	3.09	1.91	2.67	No Find	022410_spft
110	022410-003	6124204.67	2198275.04	4.93	4.19	2.92	1.56	2.54	No Find	022410_spft
111	022410-004	6124192.15	2198264.24	5.38	4.10	2.65	1.74	2.58	No Find	022410_spft
112	022410-005	6124157.24	2198226.49	14.16	10.74	6.47	3.55	6.23	20 mm Projectile	022410_spft
113	022410-006	6124195.39	2198272.78	5.25	4.84	4.29	3.56	3.86	No Find	022410_spft
114	022410-007	6124154.61	2198235.94	11.25	8.31	5.03	2.01	4.55	20 mm Projectile	022410_spft
115	022410-008	6124194.57	2198281.74	5.38	4.11	2.93	1.73	2.65	No Find	022410_spft
116	022410-009	6124154.02	2198240.98	5.50	4.30	2.74	1.74	2.65	No Find	022410_spft
117	022410-010	6124233.68	2198313.27	4.76	4.49	3.29	2.56	3.08	No Find	022410_spft
118	022410-011	6124219.16	2198310.95	4.29	3.94	2.85	1.84	2.54	No Find	022410_spft
119	022410-012	6124226.86	2198318.87	5.36	3.75	2.57	2.02	2.62	No Find	022410_spft
120	022410-013	6124155.90	2198268.28	66.25	38.25	13.58	2.66	17.25	Cultural Debris (wire)	022410_spft
121	022410-014	6124185.66	2198300.63	5.53	4.42	2.86	1.48	2.59	No Find	022410_spft
122	022410-015	6124103.44	2198233.61	7.01	4.88	2.81	1.38	2.76	Cultural Debris	022410_spft
123	022410-016	6124185.60	2198337.16	7.67	5.89	4.39	3.54	4.29	No Find	022410_spft
124	022410-017	6124145.96	2198312.80	5.04	4.01	2.80	1.78	2.59	No Find	022410_spft
125	022410-018	6124165.60	2198333.19	13.27	9.33	5.31	2.42	5.16	No Find	022410_spft
126	022410-019	6124205.25	2198354.81	4.40	3.53	2.78	2.50	2.74	No Find	022410_spft
127	022410-020	6124165.60	2198356.25	287.62	212.23	136.01	80.54	130.31	No Find	022410_spft
128	022410-021	6124152.34	2198350.78	3.69	3.67	3.01	2.35	2.69	No Find	022410_spft
129	022410-022	6124167.00	2198357.67	234.18	172.70	110.94	64.95	105.87	Cultural Debris	022410_spft
130	022410-023	6124095.22	2198306.86	15.83	10.09	5.27	2.45	5.54	20 mm Projectile	022410_spft
131	022410-024	6124081.34	2198294.97	2.86	3.21	3.12	3.11	2.88	Cultural Debris	022410_spft
132	022410-025	6124115.55	2198345.44	3.15	3.36	2.92	2.50	2.62	Cultural Debris	022410_spft
133	022410-026	6124088.63	2198326.28	425.20	274.72	135.22	50.09	141.17	Frag	022410_spft
134	022410-027	6124123.89	2198363.28	3.28	3.02	2.67	2.59	2.56	No Find	022410_spft
135	022410-028	6124140.49	2198382.10	7.63	5.41	3.52	1.72	3.23	No Find	022410_spft
136	022410-029	6124029.06	2198315.47	5.79	5.15	4.53	4.53	4.43	No Find	022410_spft
137	022410-030	6124148.89	2198415.33	23.30	15.42	8.15	4.30	8.63	QC Seed	022410_spft
138	022410-031	6124133.50	2198414.42	5.73	4.69	3.01	1.87	2.85	No Find	022410_spft
139	022410-032	6124137.94	2198416.71	4.71	4.07	3.09	2.27	2.84	No Find	022410_spft
140	022410-033	6124027.89	2198338.17	6.00	3.98	3.62	3.02	3.41	No Find	022410_spft
141	022410-034	6124017.91	2198353.73	4.45	4.14	3.78	3.16	3.37	No Find	022410_spft
142	022410-035	6124087.21	2198413.42	56.46	39.48	20.83	11.09	21.79	Cultural Debris	022410_spft
143	022410-036	6124007.36	2198350.03	5.19	3.89	2.81	1.99	2.67	20 mm Projectile	022410_spft
144	021110B-001	6123164.77	2197542.46	20.10	14.98	8.61	4.07	8.25	20 mm Projectile	021110B_wheel
145	021110B-002	6123181.79	2197564.67	6.51	4.64	2.54	1.14	2.50	20 mm Projectile x 2	021110B_wheel
146	021110B-003	6123147.88	2197586.16	12.21	9.04	5.20	2.70	5.09	No Find	021110B_wheel
147	021110B-004	6123140.84	2197582.12	5.25	3.64	2.21	1.14	2.14	20 mm Projectile	021110B_wheel
148	021110B-005	6123138.56	2197608.85	6.90	3.90	1.94	1.07	2.25	Frag	021110B_wheel
149	021110B-006	6123141.69	2197634.18	43.74	28.87	15.45	6.89	15.73	Frag	021110B_wheel
150	021110B-007	6123142.15	2197638.32	39.98	26.16	13.76	6.46	14.32	No Find	021110B_wheel
151	021110B-008	6123113.37	2197617.92	119.06	86.99	51.61	27.86	50.34	40 mm Projectile	021110B_wheel
152	021110B-009	6123115.28	2197623.65	56.43	36.74	20.04	9.42	20.46	No Find	021110B_wheel
153	021110B-010	6123108.55	2197620.00	10.36	8.79	5.43	2.94	5.02	same source as 151	021110B_wheel
154	021110B-011	6123138.23	2197659.62	11.04	6.96	3.67	1.72	3.85	No Find	021110B_wheel
155	021616A-001	6123087.28	2196912.41	51.89	17.32	2.00	-0.08	8.48	Cultural Debris (aluminum can)	021616a(grid8C)
156	021616A-002	6123115.90	2196985.25	11.23	8.23	5.45	3.06	5.08	20 mm Projectile	021616a(grid8C)
157	021616A-003	6123068.35	2196924.94	17.45	12.87	8.49	5.26	8.12	No Find	021616a(grid8C)
158	021616A-004	6123090.08	2197000.04	88.36	44.83	12.72	1.45	19.82	Cultural Debris	021616a(grid8C)
159	021616A-005	6123089.88	2197004.87	52.52	29.85	9.79	1.56	13.13	Cultural Debris	021616a(grid8C)
160	021616A-006	6123032.87	2196900.96	19.53	12.27	6.36	2.56	6.58	QC Seed	021616a(grid8C)
161	021616A-007	6123075.12	2197003.81	98.65	64.65	30.35	10.25	32.06	Cultural Debris	021616a(grid8C)
162	021616A-008	6123088.10	2197069.12	46.33	30.95	16.66	7.86	17.03	Cultural Debris	021616a(grid8C)
163	021616A-009	6123053.44	2197016.30	55.77	32.16	12.34	2.44	14.83	Cultural Debris	021616a(grid8C)
164	021616A-010	6123055.92	2197057.09	23.43	17.88	11.45	6.29	10.69	No Find	021616a(grid8C)
165	021616A-011	6123007.06	2196983.50	6.64	4.61	3.15	1.74	2.92	No Find	021616a(grid8C)
166	021616A-012	6123022.34	2197016.48	8.29	5.96	3.49	1.44	3.25	20 mm Projectile	021616a(grid8C)
167	021616A-013	6123041.62	2197062.01	59.56	44.04	28.10	15.50	26.49	Cultural Debris	021616a(grid8C)
168	021616A-014	6123009.42	2197013.71	15.97	10.48	6.25	2.74	5.98	40 mm Projectile	021616a(grid8C)
169	021616A-015	6122999.26	2197000.33	37.17	24.23	11.59	3.60	11.99	Same source as 168 and 170	021616a(grid8C)
170	021616A-016	6122996.50	2197016.00	27.96	21.30	13.92	8.06	13.04	Same source as 168 and 169	021616a(grid8C)
171	022510-001	6123993.95	2198349.00	6.74	5.49	3.48	1.99	3.25	No Find	022510(sp)
172	022510-002	6124070.91	2198417.50	5.68	4.39	3.25	2.73	3.22	Frag	022510(sp)
173	022510-003	6123988.40	2198353.29	8.04	7.17	4.72	3.16	4.45	20 mm Projectile	022510(sp)
174	022510-004	6123968.70	2198344.08	8.69	6.98	4.57	2.46	4.15	No Find	022510(sp)
175	022510-005	6123996.16	2198381.32	1663.89	1065.70	557.70	251.39	581.32	Frag	022510(sp)
176	022510-006	6123994.61	2198383.46	257.03	170.34	95.65	45.84	96.01	No Find	022510(sp)
177	022510-007	6123990.99	2198419.11	8.78	5.82	3.36	1.45	3.25	20 mm Projectile	022510(sp)
178	022510-008	6123770.63	2198385.67	7.15	7.08	4.72	2.40	4.02	No Find	022510(sp)
179	022510-009	6123745.05	2198393.84	6.05	4.80	2.85	1.33	2.64	No Find	022510(sp)
180	022510-010	6123756.55	2198385.98	4.57	3.95	3.41	1.88	2.72	No Find	022510(sp)
181	022510-011	6123770.89	2198381.28	9.74	6.63	4.48	2.24	4.09	No Find	022510(sp)
182	022510-012	6123802.36	2198374.42	9.89	6.30	3.87	2.13	3.86	No Find	022510(sp)
183	022510-013	6123594.35	2198189.07	21.51	15.93	9.27	4.41	8.85	No Find	022510(sp)
184	022510-014	6123675.62	2198153.36	7.80	5.81	4.22	2.71	3.90	No Find	022510(sp)
185	022510-015	6123599.60	2198191.00	27.85	19.78	12.27	6.00	11.52	No Find	022510(sp)
186	022510-016	6123636.87	2198177.62	7.26	4.80	2.54	1.50	2.76	No Find	022510(sp)
187	022510-017	6123555.95	2198223.83	6.59	5.08	3.20	1.79	3.02	Cultural Debris	022510(sp)
188	022510-018	6123501.07	2198252.22	7.18	5.13	3.20	1.98	3.17	No Find	022510(sp)

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
189	022510-019	6123587.99	2198213.70	12.01	8.63	5.02	2.28	4.79	Cultural Debris (survey marker)	022510(sp)
190	022510-020	6123573.86	2198220.78	7.00	5.32	3.23	1.61	3.03	No Find	022510(sp)
191	022510-021	6123526.30	2198245.00	32.21	23.15	13.70	6.23	12.94	No Find	022510(sp)
192	022510-022	6123692.67	2198331.84	38.32	27.53	15.99	7.96	15.55	No Find	022510(sp)
193	022510-023	6123670.75	2198319.37	336.60	221.59	118.98	55.73	122.12	Cultural Debris	022510(sp)
194	022510-024	6123626.88	2198337.98	31.95	16.45	5.13	1.11	7.58	Cultural Debris	022510(sp)
195	022510-025	6123945.59	2198376.19	5.78	3.63	3.09	2.81	3.11	No Find	022510(sp)
196	022510-026	6123942.59	2198382.66	4.37	3.81	3.27	3.01	3.12	Cultural Debris	022510(sp)
197	022510-027	6123901.19	2198365.25	4.19	3.09	2.55	2.38	2.55	No Find	022510(sp)
198	022510-028	6123860.36	2198360.00	3.06	3.11	2.75	2.57	2.56	No Find	022510(sp)
199	022510-029	6123594.92	2198204.49	4.93	3.95	2.82	2.44	2.85	No Find	022510(sp)
200	022510-030	6123660.14	2198310.59	5.13	4.59	3.21	2.56	3.12	No Find	022510(sp)
201	022510-031	6123644.03	2198311.98	2.75	2.95	2.87	2.59	2.55	No Find	022510(sp)
202	030110-001	6123187.05	2197920.60	5126.54	2403.41	645.87	71.79	1090.95	Cultural Debris	030110(sp1)
203	030110-002	6124260.01	2198168.39	521.04	379.84	235.91	138.22	229.50	Cultural Debris (survey marker)	030110(sp1)
204	030110-004	6123163.72	2197483.91	63.91	41.63	22.36	10.59	23.06	Base Fuze	030110(sp1)
205	030110-005	6124221.18	2198204.36	94.64	49.94	16.06	3.15	22.81	Cultural Debris	030110(sp1)
206	030110-006	6124232.01	2198189.23	35.01	23.26	12.12	5.21	12.43	QC Seed	030110(sp1)
207	030110-008	6123125.01	2197450.86	20.79	15.55	9.86	5.88	9.48	Base Fuze	030110(sp1)
208	030110-010	6123307.35	2197851.84	16.33	10.81	6.03	3.90	6.50	Frag (nose plug)	030110(sp1)
209	030110-013	6124227.42	2198131.11	18.25	9.31	3.26	1.36	4.70	Cultural Debris	030110(sp1)
210	030110-015	6124227.41	2198120.54	13.57	8.77	3.98	1.18	4.25	Cultural Debris	030110(sp1)
211	030110-020	6123225.64	2197910.98	10.88	7.35	3.64	1.33	3.73	Cultural Debris	030110(sp1)
212	030110-023	6123255.40	2197894.87	7.93	5.38	3.35	1.85	3.26	No Find	030110(sp1)
213	030110-026	6123243.17	2197912.13	5.78	5.32	3.19	1.62	2.90	No Find	030110(sp1)
214	030310-001	6122957.56	2197474.12	30.59	21.72	12.98	6.73	12.59	Cultural Debris	030310(sp)
215	030310-002	6122998.01	2197465.66	28.12	19.77	11.23	4.99	10.86	20 mm Projectile	030310(sp)
216	030310-003	6123075.75	2197405.36	23.56	16.53	9.09	4.28	9.06	No Find	030310(sp)
217	030310-004	6123066.10	2197496.75	6.90	5.24	4.14	3.53	4.04	Cultural Debris	030310(sp)
218	030310-005	6123102.26	2197470.07	7.83	6.75	4.55	2.37	3.99	No Find	030310(sp)
219	030310-006	6122970.63	2197468.56	6.81	4.77	2.69	1.30	2.66	No Find	030310(sp)
220	030310-007	6123027.29	2197444.82	7.37	4.69	2.62	1.09	2.60	Cultural Debris	030310(sp)
221	030410-001	6123027.28	2197580.42	21.66	16.52	10.35	6.44	10.08	Cultural Debris	030410-spft
222	030410-002	6123007.97	2197543.86	18.36	12.03	5.88	1.99	6.06	Cultural Debris	030410-spft
223	030410-003	6122960.64	2197548.70	13.30	10.31	6.29	2.70	5.67	No Find	030410-spft
224	030410-004	6122980.68	2197568.84	11.90	8.13	4.28	1.75	4.29	No Find	030410-spft
225	030410-005	6122998.30	2197657.83	6.13	5.11	4.24	3.72	4.04	No Find	030410-spft
226	030410-006	6123028.60	2197705.95	6.61	5.43	3.59	2.01	3.26	Cultural Debris	030410-spft
227	030410-007	6122961.74	2197527.10	8.01	5.50	2.97	0.88	2.79	Frag	030410-spft
228	030410-008	6123057.27	2197585.45	5.63	3.57	2.53	1.96	2.59	No Find	030410-spft
229	030510-001	6123678.13	2197756.41	75.27	46.90	23.18	10.06	25.03	Cultural Debris	030510_sp
230	030510-002	6123665.44	2197751.79	57.96	37.06	15.79	3.79	17.25	Cultural Debris	030510_sp
231	030510-003	6123581.53	2197890.98	30.71	20.48	11.00	5.84	11.54	Frag	030510_sp
232	030510-004	6123700.56	2197755.12	18.92	13.83	8.93	5.17	8.49	20 mm Projectile	030510_sp
233	030510-005	6123594.26	2197882.48	18.25	11.96	6.53	3.59	6.87	Frag & CD	030510_sp
234	030510-006	6123596.90	2197837.88	4.93	2.51	1.58	2.74	6.65	Cultural Debris	030510_sp
235	030510-007	6123693.86	2197753.41	14.48	10.08	5.21	2.15	5.26	Cultural Debris	030510_sp
236	030510-008	6123718.95	2197752.44	13.09	7.73	4.09	2.29	4.53	20 mm Projectile	030510_sp
237	030510-009	6123628.98	2197809.67	12.05	8.23	3.85	1.08	3.93	Cultural Debris	030510_sp
238	030510-010	6123633.40	2197800.28	8.50	6.39	3.78	2.06	3.68	Cultural Debris	030510_sp
239	030510-011	6123567.33	2197878.20	10.85	6.53	2.58	1.11	3.24	Cultural Debris	030510_sp
240	030510-012	6123686.84	2197740.67	9.07	6.03	2.97	1.39	3.19	Frag & CD	030510_sp
241	030510-013	6123588.19	2197853.19	6.95	5.28	2.99	1.75	3.02	Cultural Debris	030510_sp
242	030510-014	6123613.51	2197833.15	8.37	5.06	2.40	1.20	2.75	Cultural Debris	030510_sp
243	030510-015	6123586.53	2197873.00	7.63	4.91	2.67	1.03	2.65	20 mm Projectile	030510_sp
252	022610-001	6123571.26	2198245.81	19.43	15.19	10.28	5.56	9.26	No Find	022610a(sp)
253	022610-002	6123565.69	2198250.97	13.31	10.30	6.67	3.79	6.23	No Find	022610a(sp)
254	022610-003	6123573.41	2198290.13	11.17	8.56	5.15	2.57	4.84	Cultural Debris	022610a(sp)
255	022610-004	6123563.55	2198266.55	10.17	6.67	3.98	1.94	3.89	No Find	022610a(sp)
256	022610-005	6123602.97	2198296.85	6.28	4.93	3.23	1.43	2.82	Cultural Debris	022610a(sp)
257	022610-006	6123565.71	2198255.56	5.66	4.64	3.06	1.77	2.81	No Find	022610a(sp)
258	022610-007	6123529.80	2198290.38	4.62	3.70	2.62	2.20	2.62	No Find	022610a(sp)
259	022610-008	6123595.74	2198218.83	7.65	5.10	2.69	1.47	2.87	Cultural Debris (survey marker)	022610a(sp)
260	022610-009	6123640.31	2198301.20	3.81	3.35	2.81	2.63	2.72	Cultural Debris	022610a(sp)
261	022610-010	6123596.83	2198332.29	2.59	2.99	2.81	2.63	2.54	Cultural Debris	022610a(sp)
262	022610-011	6123574.36	2198238.81	4.87	4.63	3.06	1.76	2.72	Cultural Debris	022610a(sp)
263	022610-012	6123588.00	2198251.38	3.00	3.16	2.88	2.79	2.69	No Find	022610a(sp)
264	022610-013	6123523.98	2198292.38	4.95	3.55	2.43	2.25	2.61	No Find	022610a(sp)
265	022610-014	6123629.40	2198295.34	2.91	2.99	2.80	2.54	2.53	No Find	022610a(sp)
266	022610-015	6123548.86	2198267.37	3.27	3.01	2.74	2.57	2.57	No Find	022610a(sp)
267	030810-001	6123444.13	2198003.35	24.17	12.91	4.57	1.17	6.12	Frag	030810_sp
268	030810-002	6123454.89	2198015.83	13.35	10.16	6.20	3.09	5.80	20 mm Projectile	030810_sp
269	030810-003	6123453.60	2197991.10	8.38	6.00	3.91	2.11	3.66	No Find	030810_sp
270	030810-004	6123420.03	2197953.86	7.94	5.28	3.92	1.73	3.34	No Find	030810_sp
271	030810-005	6123418.07	2197977.46	8.48	5.22	2.34	1.09	2.72	Cultural Debris	030810_sp
272	030810-006	6123469.34	2198007.59	5.17	4.38	2.92	1.63	2.63	No Find	030810_sp
273	030910-001	6123379.29	2198003.21	136.20	94.40	55.49	28.16	54.34	Frag and Cultural Debris	030910_sp
274	030910-002	6123408.55	2198075.40	11.38	8.09	5.51	3.37	5.22	No Find	030910_sp
275	030910-003	6123456.93	2198037.34	12.21	8.57	5.30	2.82	5.09	No Find	030910_sp
276	030910-004	6123433.66	2198051.10	11.33	8.17	4.71	2.13	4.50	Cultural Debris	030910_sp
277	030910-005	6123435.92	2198032.92	9.42	6.83	4.21	2.02	3.93	No Find	030910_sp
278	030910-006	6123288.52	2198086.45	13.10	7.77	3.23	0.92	3.75	Cultural Debris	030910_sp
279	030910-007	6123365.96	2198009.34	10.10	7.00	3.37	1.33	3.53	Cultural Debris	030910_sp
280	030910-008	6123378.00	2198070.57	7.83	6.27	3.46	1.64	3.33	No Find	030910_sp
281	030910-009	6123383.49	2198005.78	8.24	6.34	3.48	1.25	3.23	No Find	030910_sp
282	030910-010	6123385.21	2198021.54	10.21	6.02	2.92	0.89	3.09	Frag	030910_sp
283	030910-011	6123384.13	2198041.32	5.97	5.08	3.11	1.95	3.00	No Find	030910_sp
284	030910-012	6123349.73	2197503.97	6.35	5.04	3.19	1.78	2.98	No Find	030910_sp
285	030910-013	6123342.07	2198018.64	8.02	5.28	2.74	1.45	2.94	Cultural Debris	030910_sp
286	030910-014	6123388.07	2198019.35	6.88	5.03	2.91	1.59	2.88	shared hit with 282	030910_sp
287	030910-015	6123328.14	2198096.12	6.81	4.59	2.85	1.39	2.71	No Find	030910_sp
288	030910-016	6123328.44	2198024.40	7.49	5.36	2.72	0.73	2.59	Cultural Debris	030910_sp
289	021215A-020	6123092.91	2197298.62	58.07	29.49	13.70	6.11	16.53	No Find	021215A_021613A
290	021215A-021	6123169.14	2197211.26	24.02	9.91	4.92	2.59	6.32	Cultural Debris	021215A_021613A

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
291	021215A-022	6123022.62	2197151.28	22.63	8.17	4.13	1.87	5.41	No Find	021215A_021613A
292	021215A-023	6123115.81	2197281.00	24.33	8.44	3.79	1.55	5.40	20 mm Projectile	021215A_021613A
293	021215A-024	6123103.48	2197313.51	25.37	8.94	3.58	1.06	5.33	Cultural Debris	021215A_021613A
294	021215A-025	6123101.90	2197297.73	26.50	7.89	2.53	0.81	4.91	No Find	021215A_021613A
295	021215A-026	6123096.68	2197309.71	24.81	7.91	2.56	0.39	4.58	Cultural Debris	021215A_021613A
296	031510-001	6123717.41	2198363.49	5.66	4.73	2.73	1.45	2.61	No Find	031510_sp
297	031510-002	6123510.77	2197557.05	9.05	5.74	2.96	1.39	3.14	20 mm Projectile	031510_sp
298	031510-003	6123819.82	2198374.05	16.40	12.25	8.01	4.57	7.51	No Find	031510_sp
299	031510-004	6123434.11	2197485.44	45.05	32.86	18.17	7.30	17.34	Cultural Debris	031510_sp
300	031510-005	6123799.20	2198374.25	7.02	6.20	4.19	2.53	3.79	No Find	031510_sp
301	031510-006	6123939.04	2197955.64	7.53	5.11	4.13	3.95	4.26	No Find	031510_sp
302	031510-007	6123896.60	2197874.97	16.05	22.48	17.20	2.24	10.39	Cultural Debris	031510_sp
303	031610-001	6123153.58	2197166.39	13.39	8.18	4.22	1.48	4.32	Cultural Debris	031610_sp
304	031610-002	6123118.28	2197127.61	19.51	12.62	6.87	2.60	6.77	No Find	031610_sp
305	031610-003	6123020.06	2196918.65	8.10	4.86	2.72	1.68	2.97	Cultural Debris	031610_sp
306	031010-001	6123160.58	2197690.82	9.26	7.81	4.49	2.24	4.23	Cultural Debris & QC Seed	031010_sp
307	031010-002	6123149.77	2197751.65	6.41	4.65	3.92	3.74	3.93	No Find	031010_sp
308	031010-003	6123146.04	2197762.87	5.26	3.19	2.73	2.07	2.59	No Find	031010_sp
309	030110-009	6124279.02	2198187.08	15.02	11.05	7.06	4.62	6.96	No Find	030110(sp1)
310	030110-012	6124194.22	2198201.19	11.09	8.87	5.83	3.04	5.25	No Find	030110(sp1)
311	030110-016	6123218.92	2197905.30	9.30	6.64	4.33	2.74	4.22	Cultural Debris	030110(sp1)
312	030110-018	6124233.77	2198148.49	9.58	6.89	4.35	2.45	4.17	20 mm Projectile	030110(sp1)
313	030110-019	6123137.93	2197460.73	9.48	6.62	3.99	2.65	4.11	20 mm Projectile	030110(sp1)
314	030110-021	6124217.98	2198143.50	6.43	5.16	4.16	2.53	3.56	Cultural Debris	030110(sp1)
315	030110-022	6124266.65	2198187.50	7.68	5.08	3.08	2.53	3.41	Cultural Debris	030110(sp1)
316	030110-023	6123255.40	2197894.87	7.93	5.38	3.35	1.85	3.26	No Find	030110(sp1)
317	030110-025	6123175.37	2197941.28	6.90	4.86	3.36	2.12	3.19	No Find	030110(sp1)
318	030110-030	6124225.99	2198235.09	9.11	7.44	5.84	5.30	5.78	Cultural Debris	030110(sp1)
319	030110-033	6123209.20	2197919.52	4.85	4.07	3.73	3.54	3.55	Cultural Debris & 20 mm Projectile	030110(sp1)
320	030110-034	6123213.52	2197906.68	4.42	3.91	3.29	3.09	3.18	No Find	030110(sp1)
321	021717-0001	6123173.02	2197257.40	23.64	18.20	11.58	7.23	11.18	Cultural Debris	021717e
322	021717-0002	6123177.32	2197344.52	7.27	4.85	2.56	1.50	2.77	Frag	021717e
323	021717-0003	6123181.71	2197326.76	10.07	6.84	3.33	1.22	3.44	20 mm Projectile	021717e
324	021717-0004	6123184.48	2197338.16	124.22	77.39	31.89	7.47	35.89	Frag & 20 mm Projectile	021717e
325	021717-0005	6123186.78	2197347.83	131.75	88.40	45.48	16.31	45.48	Cultural Debris	021717e
326	021717-0006	6123186.84	2197289.67	19.81	14.38	8.80	4.55	8.38	Cultural Debris (pliers)	021717e
327	021717-0007	6123207.45	2197365.32	5.44	4.22	2.81	1.76	2.66	20 mm Projectile	021717e
328	021717-0008	6123213.39	2197356.07	11.84	8.60	5.36	2.99	5.15	No Find	021717e
329	021717-0009	6123216.81	2197384.29	13.67	9.90	6.22	3.77	6.08	Cultural Debris	021717e
330	021717-0010	6123226.29	2197390.93	13.72	8.69	4.47	1.93	4.69	20 mm Projectile	021717e
331	021717-0011	6123247.55	2197443.58	11.19	8.41	5.52	3.26	5.20	40 mm Projectile Practice	021717e
332	021717-0012	6123268.14	2197488.67	11.38	6.87	3.44	1.68	3.80	Cultural Debris	021717e
333	021717-0013	6123300.57	2197481.68	9.01	6.29	4.11	2.00	3.77	Cultural Debris	021717e
334	021717-0014	6123338.03	2197493.73	7.21	5.21	3.30	1.57	3.03	Cultural Debris	021717e
335	021717-0015	6123374.75	2197541.55	6.26	4.61	3.05	1.56	2.78	Frag	021717e
336	021717-0016	6123426.37	2197575.74	23.28	15.07	8.36	3.05	8.10	Cultural Debris	021717e
340	030810(2)-004	6123450.403	2197959.518	17.25	11.45	5.95	2.26	5.99	Cultural Debris	030810_sp2
343	030810(2)-007	6123460.008	2197951.885	9.29	6.94	4.05	2.43	4.06	Cultural Debris	030810_sp2
344	030810(2)-008	6123462.654	2197981.512	8.85	6.14	3.52	1.71	3.46	Frag	030810_sp2
345	030810(2)-009	6123465.174	2197922.416	36.58	21.19	7.96	1.34	9.60	Cultural Debris	030810_sp2
347	030810(2)-011	6123473.544	2197917.154	98.30	68.67	34.96	12.55	34.77	Cultural Debris	030810_sp2
348	030810(2)-012	6123483.362	2197974.318	8.15	6.28	4.13	2.25	3.79	Cultural Debris	030810_sp2
349	030810(2)-013	6123492.862	2197933.038	12.98	8.83	4.46	1.61	4.50	Cultural Debris	030810_sp2
350	030810(2)-014	6123495.183	2197992.744	5.44	4.05	2.61	1.88	2.63	Cultural Debris	030810_sp2
351	030810(2)-015	6123508.199	2197926.982	9.98	7.41	4.47	1.97	4.12	Cultural Debris	030810_sp2
352	030810(2)-016	6123529.073	2197916.372	10.49	7.48	4.27	1.82	4.07	Cultural Debris	030810_sp2
353	030810(2)-017	6123531.553	2197956.472	8.23	6.18	3.57	1.66	3.39	Cultural Debris	030810_sp2
354	030810(2)-018	6123545.048	2197924.773	5.92	5.28	3.69	2.16	3.26	Cultural Debris	030810_sp2
355	030810(2)-019	6123547.735	2197893.351	8.17	5.23	2.53	1.04	2.72	Cultural Debris	030810_sp2
356	030810(2)-020	6123561.219	2197882.418	11.15	6.88	3.31	1.66	3.74	Cultural Debris	030810_sp2
357	030810(2)-021	6123566.480	2197918.822	15.31	10.50	4.94	1.65	5.13	Cultural Debris	030810_sp2
375	022510-032	6123873.63	2198360.11	10.81	7.79	5.05	3.08	4.88	No Find	022510(sp)
376	022510-033	6123763.82	2198383.49	9.07	6.19	3.95	1.62	3.56	No Find	022510(sp)
377	qc_5-12	6123192.60	2197442.56	20.47	15.92	10.32	5.84	9.61	40 mm Practice Round	021811C_021817A
378	qc_5-13	6123074.53	2196847.63	20.25	15.07	8.64	4.36	8.41	No Find	021811C_021817A
379	qc_5-14	6123071.14	2196835.15	26.50	15.78	7.17	2.94	8.19	Frag	021811C_021817A
380	qc_5-15	6123020.95	2196864.14	17.08	12.20	7.33	3.38	6.90	Frag (melted aluminum)	021811C_021817A
381	qc_5-16	6123113.18	2197354.91	15.05	11.78	7.39	3.86	6.84	Cultural Debris (22 bullet)	021811C_021817A
382	qc_5-17	6123168.30	2197408.88	14.39	11.07	6.80	3.40	6.32	20 mm Projectile	021811C_021817A
383	qc_5-18	6123129.71	2197371.98	14.33	10.28	6.07	3.34	5.99	No Find	021811C_021817A
384	qc_5-19	6123148.20	2197399.29	13.03	9.57	6.41	3.60	5.94	No Find	021811C_021817A
385	qc_5-20	6123122.32	2197368.23	14.24	8.44	4.66	1.93	4.75	Cultural Debris (rust)	021811C_021817A
386	qc_5-21	6122894.93	2196762.24	10.98	8.02	4.68	2.09	4.42	20 mm Projectile	021811C_021817A
387	qc_5-22	6123201.38	2197461.85	14.77	8.57	3.85	1.05	4.25	Frag	021811C_021817A
388	qc_5-23	6123306.27	2197559.03	12.24	7.74	3.83	1.90	4.21	Frag	021811C_021817A
389	qc_5-24	6122782.50	2197404.71	67.11	38.88	19.31	8.39	21.28	No Find	021811C_021817A
390	seed#5?	6123346.92	2197570.98	25.50	16.88	9.30	3.87	9.19	QC Seed (previously removed)	021811C_021817A
391	02080910-001	6123405.94	2197443.43	40.87	29.26	17.99	8.44	16.78	Cultural Debris (9mm slug)	02080910_sp-ft
392	02080910-002	6123811.53	2197730.34	16.58	12.23	7.62	3.78	7.09	Frag	02080910_sp-ft
393	02080910-003	6124044.22	2197912.96	15.05	10.09	5.65	2.70	5.66	Cultural Debris (hot rock)	02080910_sp-ft
394	02080910-004	6123840.05	2197799.26	12.62	10.09	6.25	2.86	5.63	Cultural Debris (rust)	02080910_sp-ft
395	02080910-005	6123811.38	2197744.53	11.13	9.05	5.62	2.81	5.13	No Find	02080910_sp-ft
396	02080910-006	6123932.67	2197987.75	13.15	8.25	4.31	2.15	4.61	Frag	02080910_sp-ft
397	02080910-007	6124092.02	2197971.37	15.44	11.30	6.52	3.04	6.25	20 mm projectile (practice)	02080910_sp-ft
398	02080910-008	6123990.57	2197986.02	11.60	8.62	4.82	2.49	4.78	Cultural Debris (hot rock)	02080910_sp-ft
399	02080910-009	6123948.49	2197967.61	10.71	7.05	3.93	2.15	4.08	20 mm Projectile (HE)	02080910_sp-ft
400	02080910-010	6124024.95	2197975.50	11.69	7.60	3.89	1.15	3.84	Frag	02080910_sp-ft
401	02080910-011	6124035.66	2197986.73	8.55	5.91	3.70	2.11	3.61	No Find	02080910_sp-ft
402	02080910-012	6123939.05	2197934.60	9.56	6.07	3.31	1.69	3.46	Cultural Debris (hot rock)	02080910_sp-ft
403	02080910-013	6123734.74	2197726.00	9.83	7.47	4.96	2.53	4.47	No Find	02080910_sp-ft
404	02080910-014	6123934.77	2198026.00	9.46	7.03	4.59	2.37	4.21	20 mm Projectile (practice)	02080910_sp-ft
405	02080910-015	6123927.67	2197999.49	10.17	6.92	4.05	2.06	4.00	20 mm Projectile (practice)	02080910_sp-ft
406	02080910-016	6123937.27	2197996.13	8.50	6.55	4.13	2.17	3.83	Cultural Debris (.50 cal slug)	02080910_sp-ft
407	02080910-017	6123974.69	2197901.33	8.44	6.34	4.05	2.02	3.71	No Find	02080910_sp-ft

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
408	02080910-018	6123923.18	2197899.32	8.11	6.16	3.93	2.14	3.67	No Find	02080910_sp-ft
409	02080910-019	6123805.60	2197768.13	8.05	5.98	3.92	1.96	3.56	Cultural Debris	02080910_sp-ft
410	02080910-020	6123896.56	2197817.90	8.35	6.18	3.62	1.85	3.50	No Find	02080910_sp-ft
411	02080910-021	6123631.91	2197601.30	9.20	6.23	3.25	1.27	3.26	20 mm Projectile	02080910_sp-ft
412	02080910-022	6123413.15	2197455.59	12.30	9.05	5.80	2.81	5.30	Cultural Debris (nail)	02080910_sp-ft
413	02080910-023	6123815.76	2197721.32	11.45	8.70	5.54	2.99	5.17	Cultural Debris (spring)	02080910_sp-ft
414	02080910-024	6123906.70	2197871.87	8.79	6.06	3.83	2.41	3.81	No Find	02080910_sp-ft
415	02080910-025	6123706.03	2197643.31	8.71	6.52	3.99	1.72	3.63	Cultural Debris (wire)	02080910_sp-ft
416	02080910-026	6123889.86	2197917.02	7.27	5.78	3.94	2.38	3.63	No Find	02080910_sp-ft
417	021010-DGM-0006	6123411.55	2197501.62	19.52	15.11	9.99	5.20	9.03	Cultural Debris (wire)	021010_sp1
418	021010-DGM-0007	6123434.70	2197530.55	19.70	14.31	8.20	4.35	8.12	Cultural Debris	021010_sp1
419	021010-DGM-0008	6123332.03	2197403.20	17.71	11.01	5.42	2.10	5.77	20 mm Projectile and Frag	021010_sp1
420	021010-DGM-0009	6123350.65	2197427.52	12.56	9.56	6.09	3.39	5.72	20 mm Projectile Body (no fuze)	021010_sp1
421	021010-DGM-0010	6123338.44	2197493.76	12.69	9.62	5.62	2.72	5.34	Cultural Debris (nail)	021010_sp1
422	021010-DGM-0011	6123356.93	2197402.32	12.63	8.99	5.19	2.51	5.04	Cultural Debris (nail)	021010_sp1
423	021010-DGM-0012	6123365.62	2197465.72	15.74	9.51	4.58	1.84	5.01	Cultural Debris (pipe)	021010_sp1
424	021010-DGM-0013	6123210.07	2197240.72	10.66	8.58	5.49	2.56	4.88	No Find	021010_sp1
425	021010-DGM-0014	6123343.29	2197392.60	10.42	7.82	5.13	2.69	4.70	20 mm Cartridge Base	021010_sp1
426	021010-DGM-0015	6123290.25	2197362.32	8.33	6.18	4.24	2.12	3.77	No Find	021010_sp1
427	021010-DGM-0016	6123258.53	2197315.16	7.94	5.48	3.27	1.85	3.26	20 mm Projectile (AP)	021010_sp1
428	021010-DGM-0017	6123254.43	2197320.43	7.83	5.79	3.30	1.43	3.13	Cultural Debris (nail)	021010_sp1
429	021010-DGM-0018	6123184.59	2197250.47	8.68	5.33	2.89	1.27	2.97	No Find	021010_sp1
430	021010-DGM-0019	6123390.90	2197475.11	7.00	5.04	3.04	1.65	2.95	Cultural Debris (brass cartridge)	021010_sp1
431	021010-DGM-0020	6123378.61	2197437.58	6.65	5.28	3.20	1.47	2.92	No Find	021010_sp1
432	021010-DGM-0021	6123335.99	2197451.29	7.51	4.86	2.91	1.42	2.85	No Find	021010_sp1
433	021010-DGM-0022	6123326.63	2197342.76	9.50	6.75	4.67	2.51	4.25	Frag	021010_sp1
434	021010-DGM-0023	6123291.16	2197363.69	7.45	5.56	3.88	2.29	3.56	No Find	021010_sp1
435	021810-012	6122773.26	2197399.11	14.30	10.67	6.86	3.60	6.35	No Find	021811C_021817A
436	021810-013	6122789.72	2197402.21	17.29	9.76	4.00	0.95	4.69	No Find	021811C_021817A
437	021810-014	6122884.51	2197465.94	7.30	5.77	3.61	1.80	3.30	No Find	021811C_021817A
438	021810-015	6122912.91	2197469.29	9.40	6.15	3.26	1.53	3.38	No Find	021811C_021817A
439	021810-016	6122923.71	2196785.78	7.71	6.50	2.65	0.55	2.70	Cultural Debris (nails x 3)	021811C_021817A
440	021810-017	6122930.19	2196877.04	7.99	6.17	3.44	1.71	3.36	Cultural Debris (pipe nipple)	021811C_021817A
441	021810-018	6122991.19	2196769.97	23.38	19.01	13.34	7.68	11.91	Cultural Debris (fence post x 2 and wire)	021811C_021817A
442	021810-019	6123092.76	2197313.38	12.87	8.53	4.13	1.23	4.20	No Find	021811C_021817A
443	021810-020	6123098.36	2197316.17	13.10	7.80	3.41	1.05	3.85	No Find	021811C_021817A
444	021810-021	6123100.87	2197370.63	11.54	8.58	4.95	2.65	4.87	No Find	021811C_021817A
445	021810-022	6123102.12	2197381.29	7.64	5.58	3.09	1.25	2.95	No Find	021811C_021817A
446	021810-023	6123104.00	2197296.42	7.75	5.40	3.40	1.87	3.27	No Find	021811C_021817A
447	021810-024	6123104.00	2197314.93	6.80	4.98	2.97	1.58	2.88	No Find	021811C_021817A
448	021810-025	6123123.04	2197385.97	11.69	8.47	5.29	2.74	4.99	20 mm Projectile (practice)	021811C_021817A
449	021810-026	6123135.88	2197333.12	6.73	4.84	2.93	1.82	2.94	No Find	021811C_021817A
450	021810-027	6123141.97	2197407.45	9.76	7.49	5.12	3.00	4.71	No Find	021811C_021817A
451	021810-028	6123152.98	2197374.13	8.07	5.30	3.39	1.74	3.23	No Find	021811C_021817A
452	021810-029	6123161.30	2197466.47	10.20	7.10	4.17	1.86	3.97	No Find	021811C_021817A
453	021810-030	6123166.22	2197330.62	6.18	4.39	2.75	1.29	2.55	No Find	021811C_021817A
454	021810-031	6123166.80	2197367.34	6.80	4.91	2.59	1.55	2.76	No Find	021811C_021817A
455	021810-032	6123173.68	2197435.56	7.31	5.19	3.33	1.83	3.16	20 mm Projectile	021811C_021817A
456	021810-033	6123175.43	2197383.53	8.07	5.09	2.33	1.11	2.67	Cultural Debris (2.5-inch washer)	021811C_021817A
457	021810-034	6123184.08	2197417.34	7.50	5.64	3.03	1.57	3.06	20 mm Projectile (AP)	021811C_021817A
458	021810-035	6123186.44	2197369.25	8.54	6.88	4.22	2.49	4.05	No Find	021811C_021817A
459	021810-036	6123195.15	2197518.16	17.69	10.66	4.97	1.50	5.34	Frag	021811C_021817A
460	021810-037	6123230.99	2197122.23	13.68	9.50	5.31	2.90	5.43	No Find	021811C_021817A
461	021810-038	6123274.33	2197507.40	5.99	4.39	2.84	1.56	2.66	No Find	021811C_021817A
462	021810-039	6123297.22	2197618.33	9.56	7.26	4.78	2.92	4.53	No Find	021811C_021817A
463	021910-006	6122828.44	2197004.45	12.95	9.57	5.94	2.92	5.53	No Find	021910_sp
464	021910-007	6122960.15	2196943.63	12.33	9.67	5.59	2.40	5.17	No Find	021910_sp
465	021910-008	6123278.45	2197796.97	10.86	7.38	4.60	2.78	4.58	No Find	021910_sp
466	021910-009	6122815.08	2197029.46	9.26	7.21	4.80	2.85	4.47	No Find	021910_sp
467	021910-010	6123286.89	2197770.27	10.17	7.37	4.51	2.52	4.37	20 mm Projectile	021910_sp
468	021910-011	6122815.90	2197041.51	8.61	6.70	4.73	2.86	4.31	No Find	021910_sp
469	021910-012	6123246.35	2197847.63	15.29	8.24	3.56	1.04	4.18	No Find	021910_sp
470	021910-013	6123167.08	2197894.72	8.84	6.17	3.74	1.74	3.53	No Find	021910_sp
471	021910-014	6123326.96	2197661.64	8.12	6.11	3.61	1.73	3.41	20 mm Projectile (no fuze)	021910_sp
472	021910-015	6122938.65	2196930.12	9.85	6.18	2.95	1.08	3.16	No find	021910_sp
473	021910-016	6122874.10	2196966.10	7.30	5.43	3.37	1.60	3.11	20 mm Projectile (practice)	021910_sp
474	021910-017	6122795.22	2197058.29	6.95	5.19	3.13	1.88	3.09	No Find	021910_sp
475	021910-018	6122783.68	2197057.38	6.66	5.34	3.39	1.69	3.07	No Find	021910_sp
476	021910-019	6123282.46	2197747.17	7.82	4.84	2.25	0.69	2.41	20 mm Projectile Base	021910_sp
477	021910-020	6122787.65	2197039.04	7.53	6.03	3.73	2.39	3.65	No Find	021910_sp
478	022310-018	6122920.22	2197464.42	7.51	5.19	2.87	1.45	2.90	M119 Rockeye Practice	022310_sp-1
479	030110-035	6124231.05	2198125.16	12.13	6.60	1.90	0.27	2.86	Cultural Debris (wire)	030110(sp1)
480	030110-036	6124244.55	2198220.80	11.83	5.65	1.35	0.25	2.53	Cultural Debris (pin flag)	030110(sp1)
481	030510-016	6123579.34	2197891.67	24.08	14.81	7.72	3.59	8.21	Cultural Debris (small arms)	030510_sp
482	030910-017	6123401.04	2198016.69	10.52	7.18	4.71	2.66	4.49	No Find	030910_sp
483	030910-018	6123427.49	2198050.65	8.02	5.97	3.65	2.13	3.56	No Find	030910_sp
Initially Selected as an Anomaly and Subsequently Culled From Anomaly List										
N/A	N/A	6123889.88	2197975.84	16.52	12.99	6.95	3.80	7.05	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123884.92	2197867.00	18.17	12.41	6.96	3.09	6.83	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123890.70	2197977.15	13.09	9.20	5.68	2.53	5.26	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123891.55	2197925.71	9.32	8.30	5.92	3.28	5.10	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123897.07	2197955.05	11.85	8.13	5.21	2.60	4.87	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123894.62	2197946.40	11.10	8.23	4.77	2.34	4.59	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6124016.59	2197949.91	9.05	6.16	3.78	2.28	3.79	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123921.36	2198026.04	9.00	5.67	2.97	1.44	3.15	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6124078.80	2197989.67	8.31	5.59	3.06	1.48	3.11	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123919.06	2198025.60	7.43	4.87	3.03	1.71	2.99	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123886.05	2197897.14	8.37	5.42	2.41	0.89	2.68	stopping/turning anomaly	02080910_sp-ft
N/A	N/A	6123630.60	2197603.13	8.09	5.16	2.54	1.08	2.72	same as 529290	02080910_sp-ft
N/A	N/A	6123925.30	2197999.97	6.37	5.03	3.15	1.71	2.94	same as 507765	02080910_sp-ft
N/A	N/A	6123896.16	2197947.11	10.38	7.49	4.79	2.08	4.30	same as 507158	02080910_sp-ft
N/A	N/A	6123934.01	2197985.70	11.91	7.26	3.86	1.88	4.10	same as 506185	02080910_sp-ft
N/A	N/A	6123960.40	2197996.18	21.93	15.32	8.79	4.58	8.75	same as 503140	02080910_sp-ft
N/A	N/A	6123963.56	2197987.30	51.84	36.16	20.20	8.80	19.68	same as 500301	02080910_sp-ft

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123961.87	2197989.23	18.05	12.98	7.70	3.15	7.12	same as 500301	02080910_sp-ft
N/A	N/A	6123925.06	2197901.72	6.31	4.63	3.20	1.60	2.84	same as 495618	02080910_sp-ft
N/A	N/A	6123819.79	2197743.58	7.33	5.47	3.61	2.38	3.50	poor shape	02080910_sp-ft
N/A	N/A	6123828.68	2197705.52	7.21	5.26	3.45	1.98	3.25	poor shape	02080910_sp-ft
N/A	N/A	6124001.54	2197988.12	7.00	5.00	3.04	1.71	2.97	poor shape	02080910_sp-ft
N/A	N/A	6123679.18	2197635.60	7.71	5.10	2.77	1.04	2.71	poor shape	02080910_sp-ft
N/A	N/A	6123733.42	2197734.20	6.29	4.50	2.79	1.42	2.64	poor shape	02080910_sp-ft
N/A	N/A	6123987.63	2197886.76	6.40	4.55	2.63	1.40	2.61	poor shape	02080910_sp-ft
N/A	N/A	6123921.20	2197937.67	8.39	7.78	6.35	5.64	6.02	poor decay	02080910_sp-ft
N/A	N/A	6123964.92	2197931.41	7.21	6.84	6.13	5.69	5.72	poor decay	02080910_sp-ft
N/A	N/A	6123922.82	2197931.70	7.33	5.72	4.74	4.56	4.74	poor decay	02080910_sp-ft
N/A	N/A	6123958.92	2197958.74	5.81	4.90	4.55	4.82	4.52	poor decay	02080910_sp-ft
N/A	N/A	6123927.02	2197959.53	6.79	5.29	3.85	2.86	3.68	poor decay	02080910_sp-ft
N/A	N/A	6123911.22	2197946.25	6.72	4.75	3.49	2.60	3.39	poor decay	02080910_sp-ft
N/A	N/A	6123941.49	2197953.33	3.86	3.49	3.49	3.66	3.35	poor decay	02080910_sp-ft
N/A	N/A	6123869.97	2197822.55	6.95	5.52	3.38	2.14	3.31	poor decay	02080910_sp-ft
N/A	N/A	6123950.03	2197925.02	6.71	5.17	3.48	2.23	3.30	poor decay	02080910_sp-ft
N/A	N/A	6123934.79	2197856.12	6.90	4.84	3.43	2.21	3.25	poor decay	02080910_sp-ft
N/A	N/A	6123955.19	2197932.18	6.33	5.26	3.38	1.96	3.14	poor decay	02080910_sp-ft
N/A	N/A	6123933.01	2197958.15	5.00	4.03	3.49	2.59	3.10	poor decay	02080910_sp-ft
N/A	N/A	6123754.77	2197747.12	5.83	4.02	3.08	2.64	3.10	poor decay	02080910_sp-ft
N/A	N/A	6123968.38	2197928.07	3.55	3.90	3.37	3.02	3.08	poor decay	02080910_sp-ft
N/A	N/A	6123914.44	2197942.58	5.00	3.59	2.96	2.86	3.01	poor decay	02080910_sp-ft
N/A	N/A	6123888.46	2197908.41	5.83	5.16	3.23	1.84	2.98	poor decay	02080910_sp-ft
N/A	N/A	6123950.81	2197841.55	6.46	4.72	2.97	1.75	2.87	poor decay	02080910_sp-ft
N/A	N/A	6123920.84	2197932.42	4.10	3.76	3.04	2.51	2.82	poor decay	02080910_sp-ft
N/A	N/A	6123918.29	2197939.85	4.49	4.03	2.87	2.42	2.82	poor decay	02080910_sp-ft
N/A	N/A	6123965.15	2197951.94	4.52	3.56	2.84	2.57	2.81	poor decay	02080910_sp-ft
N/A	N/A	6124194.03	2198083.56	6.27	4.51	2.78	1.56	2.69	poor decay	02080910_sp-ft
N/A	N/A	6124060.55	2197932.53	5.78	4.08	2.78	1.74	2.65	poor decay	02080910_sp-ft
N/A	N/A	6123977.69	2197873.88	4.12	3.50	2.89	2.28	2.65	poor decay	02080910_sp-ft
N/A	N/A	6123935.58	2198023.44	5.59	4.05	2.61	1.89	2.65	poor decay	02080910_sp-ft
N/A	N/A	6123945.04	2197950.23	3.57	3.04	2.50	2.77	2.63	poor decay	02080910_sp-ft
N/A	N/A	6123893.18	2197859.38	4.90	4.01	2.67	1.78	2.54	poor decay	02080910_sp-ft
N/A	N/A	6123825.94	2197717.79	4.84	4.29	2.98	1.49	2.53	poor decay	02080910_sp-ft
N/A	N/A	6123935.64	2197849.84	3.34	3.25	2.55	2.46	2.52	poor decay	02080910_sp-ft
N/A	N/A	6124130.68	2198008.06	16.64	12.50	7.90	3.82	7.23	path into site (AGM area)	02080910_sp-ft
N/A	N/A	6124165.79	2198049.56	18.16	11.29	5.64	2.09	5.91	path into site (AGM area)	02080910_sp-ft
N/A	N/A	6124122.68	2198000.62	11.00	8.41	5.81	3.83	5.50	path into site (AGM area)	02080910_sp-ft
N/A	N/A	6124232.45	2198128.03	18.31	11.03	4.42	1.47	5.32	path into site (AGM area)	02080910_sp-ft
N/A	N/A	6123327.95	2197304.90	70.61	19.14	2.10	-0.08	10.70	noise; early time dominates	02080910_sp-ft
N/A	N/A	6123961.81	2197934.96	10.81	3.47	1.43	1.24	2.52	noise; early time dominates	02080910_sp-ft
N/A	N/A	6123434.67	2197484.36	42.26	31.59	16.94	6.80	16.34	GPS base station	02080910_sp-ft
N/A	N/A	6123954.51	2197968.93	6.97	4.83	3.41	1.99	3.15	flat ch1-ch3	02080910_sp-ft
N/A	N/A	6123904.58	2197898.03	6.62	4.91	3.03	1.70	2.91	flat ch1-ch3	02080910_sp-ft
N/A	N/A	6123983.04	2197973.73	6.16	4.90	3.12	1.71	2.89	flat ch1-ch3	02080910_sp-ft
N/A	N/A	6123925.23	2197829.37	6.30	4.65	3.16	1.66	2.86	flat ch1-ch3	02080910_sp-ft
N/A	N/A	6123898.41	2197971.76	5.72	4.33	2.71	1.45	2.55	flat ch1-ch3	02080910_sp-ft
N/A	N/A	6123662.50	2197642.14	5.91	4.43	2.78	1.65	2.68	flat ch1-ch2	02080910_sp-ft
N/A	N/A	6123768.20	2197767.98	9.83	7.01	4.19	1.93	3.96	edge of slope	02080910_sp-ft
N/A	N/A	6123873.17	2197716.27	6.74	5.13	3.22	1.64	2.98	edge of slope	02080910_sp-ft
N/A	N/A	6123251.29	2197166.26	6.70	4.62	3.23	1.43	2.81	edge/electronics	021010_sp1
N/A	N/A	6123259.62	2197180.71	7.87	5.53	3.28	1.55	3.14	edge/electronics	021010_sp1
N/A	N/A	6123260.44	2197342.98	6.30	4.68	3.06	1.53	2.78	edge/electronics	021010_sp1
N/A	N/A	6123287.18	2197429.94	10.22	6.92	3.73	2.09	3.93	edge/electronics	021010_sp1
N/A	N/A	6123310.89	2197340.05	6.61	5.12	3.10	1.44	2.85	edge/electronics	021010_sp1
N/A	N/A	6123311.16	2197349.52	5.05	4.44	2.92	1.66	2.64	edge/electronics	021010_sp1
N/A	N/A	6123311.22	2197340.79	10.74	8.03	5.07	2.71	4.75	edge/electronics	021010_sp1
N/A	N/A	6123311.71	2197341.92	11.45	8.64	5.29	3.06	5.12	edge/electronics	021010_sp1
N/A	N/A	6123361.15	2197374.11	10.44	7.43	4.31	2.59	4.39	edge/electronics	021010_sp1
N/A	N/A	6123425.73	2197569.22	7.46	5.08	3.24	1.75	3.10	edge/electronics	021010_sp1
N/A	N/A	6123246.16	2197287.52	5.43	4.67	3.44	2.56	3.22	poor decay	021010_sp1
N/A	N/A	6123317.47	2197387.62	5.76	4.21	3.16	2.18	2.95	poor decay	021010_sp1
N/A	N/A	6123318.81	2197422.17	7.14	5.31	3.89	2.30	3.50	poor decay	021010_sp1
N/A	N/A	6123321.46	2197320.67	5.90	4.81	3.59	2.51	3.30	poor decay	021010_sp1
N/A	N/A	6123351.55	2197386.46	7.02	5.01	3.03	1.81	3.02	poor decay	021010_sp1
N/A	N/A	6123398.10	2197478.35	5.50	3.90	2.59	1.73	2.54	poor decay	021010_sp1
N/A	N/A	6123411.45	2197495.84	6.16	4.68	3.03	1.57	2.78	poor decay	021010_sp1
N/A	N/A	6123425.26	2197536.16	6.80	5.14	3.22	2.08	3.17	poor decay	021010_sp1
N/A	N/A	6123200.38	2197238.44	8.63	5.00	1.97	0.98	2.57	poor shape	021010_sp1
N/A	N/A	6123350.78	2197385.29	5.64	4.32	2.94	1.81	2.75	poor shape	021010_sp1
N/A	N/A	6123216.56	2197249.71	12.10	9.45	5.74	2.83	5.33	same as 10	021010_sp1
N/A	N/A	6123285.29	2197393.83	6.58	5.06	3.16	2.34	3.23	same as 11	021010_sp1
N/A	N/A	6123285.65	2197339.21	13.06	9.92	6.39	3.08	5.77	same as 12	021010_sp1
N/A	N/A	6123189.48	2197231.52	5.81	4.22	2.97	1.66	2.69	same as 14	021010_sp1
N/A	N/A	6123433.40	2197529.14	11.07	8.63	5.49	2.70	4.98	same as 16	021010_sp1
N/A	N/A	6123364.45	2197464.32	12.78	7.87	3.94	1.93	4.33	same as 21	021010_sp1
N/A	N/A	6123344.02	2197394.36	11.21	8.34	4.95	2.34	4.67	same as 23	021010_sp1
N/A	N/A	6123344.65	2197395.78	9.64	6.60	3.91	2.00	3.83	same as 23	021010_sp1
N/A	N/A	6123335.29	2197450.14	6.54	4.51	3.00	1.51	2.76	same as 30	021010_sp1
N/A	N/A	6123210.07	2197240.72	10.66	8.58	5.49	2.56	4.88	same as 365	021010_sp1
N/A	N/A	6123327.17	2197442.17	6.65	4.61	3.10	1.86	2.95	same as 021010-DGM-0004	021010_sp1
N/A	N/A	6123326.63	2197342.76	9.50	6.75	4.67	2.51	4.25	duplicate	021010_sp1
N/A	N/A	6123049.99	2197618.23	11.68	5.59	1.58	0.17	2.53	poor decay; early time channels dominate	021110B_wheel
N/A	N/A	6123106.69	2197683.90	7.12	5.48	5.05	5.23	5.04	poor decay	021110B_wheel
N/A	N/A	6123108.05	2197677.88	3.68	4.26	3.79	3.91	3.63	poor decay	021110B_wheel
N/A	N/A	6123111.41	2197674.22	6.15	4.85	4.49	4.24	4.29	poor decay	021110B_wheel
N/A	N/A	6123142.12	2197660.22	18.98	12.23	5.67	2.70	6.40	same as 021110B-011	021110B_wheel
N/A	N/A	6123185.45	2197608.83	5.65	4.47	2.57	1.17	2.41	end of line spike	021110B_wheel
N/A	N/A	6123188.50	2197605.14	6.09	4.45	2.49	1.00	2.36	end of line spike	021110B_wheel
N/A	N/A	6123023.93	2197159.91	30.79	14.17	7.95	3.86	8.97	same source as 0211215A-016	021215A_021613A
N/A	N/A	6123023.99	2197149.16	35.38	13.80	5.69	1.82	7.96	same source as 0211215A-017	021215A_021613A
N/A	N/A	6123027.61	2197156.71	21.25	6.96	3.26	1.09	4.53	same source as 0211215A-016	021215A_021613A
N/A	N/A	6123030.69	2197267.20	30.38	10.69	4.47	1.77	6.64	same source as 0211215A-007	021215A_021613A

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123066.83	2197101.82	58.73	34.53	19.70	10.10	20.56	same source as 0211215A-019	021215A_021613A
N/A	N/A	6123068.73	2197161.91	69.78	36.39	17.68	7.87	20.54	same source as 0211215A-014	021215A_021613A
N/A	N/A	6123071.32	2197161.13	77.16	39.25	18.08	6.67	21.33	same source as 0211215A-014	021215A_021613A
N/A	N/A	6123075.63	2197290.63	29.95	11.22	4.55	1.28	6.49	same source as 0211215A-005	021215A_021613A
N/A	N/A	6123079.21	2197287.42	26.14	8.42	3.16	0.59	5.03	same source as 0211215A-005	021215A_021613A
N/A	N/A	6123081.15	2197225.66	38.21	16.14	7.51	3.19	9.64	same source as 0211215A-010	021215A_021613A
N/A	N/A	6123084.65	2197193.69	48.99	27.20	16.49	9.51	17.37	same source as 0211215A-012	021215A_021613A
N/A	N/A	6123085.01	2197222.72	41.44	17.41	7.50	2.70	9.96	same source as 0211215A-010	021215A_021613A
N/A	N/A	6123087.56	2197168.12	44.82	22.62	11.10	4.01	12.57	same source as 0211215A-013	021215A_021613A
N/A	N/A	6123092.09	2197273.03	25.39	9.39	4.65	2.36	6.21	same source as 0211215A-006	021215A_021613A
N/A	N/A	6123092.23	2197158.83	87.08	44.40	22.76	9.16	25.37	same source as 0211215A-015	021215A_021613A
N/A	N/A	6123094.87	2197311.29	23.57	6.92	2.53	1.08	4.58	same source as 0211215A-026	021215A_021613A
N/A	N/A	6123095.37	2197158.67	67.91	37.31	19.22	9.08	21.38	same source as 0211215A-015	021215A_021613A
N/A	N/A	6123097.56	2197268.32	37.72	18.50	11.07	5.69	11.90	same source as 0211215A-006	021215A_021613A
N/A	N/A	6123110.12	2197303.07	25.05	8.44	3.78	1.44	5.43	same source as 0211215A-002	021215A_021613A
N/A	N/A	6123165.02	2197228.17	21.26	7.16	3.20	1.78	4.84	same source as 0211215A-009	021215A_021613A
N/A	N/A	6123170.85	2197209.57	24.73	9.65	4.23	1.63	5.78	same source as 0211215A-021	021215A_021613A
N/A	N/A	6123206.11	2197220.01	17.02	8.96	6.03	3.29	6.03	same source as 0211215A-011	021215A_021613A
N/A	N/A	6122993.31	2196979.15	2.90	3.77	3.43	3.76	3.32	flat decay	021616a(grid8C)
N/A	N/A	6122998.31	2197014.12	11.18	8.87	5.95	3.55	5.50	same source as 170	021616a(grid8C)
N/A	N/A	6123000.50	2196997.46	24.02	15.42	6.79	1.67	7.26	same source as 169	021616a(grid8C)
N/A	N/A	6123018.14	2196919.49	12.03	4.88	2.70	1.28	3.20	same source as 166	021616a(grid8C)
N/A	N/A	6123034.98	2196899.61	6.85	4.34	2.54	1.39	2.60	same source as 160	021616a(grid8C)
N/A	N/A	6123035.30	2196931.25	10.54	3.38	2.03	1.66	2.81	noise; early dominates, flat decay in late time	021616a(grid8C)
N/A	N/A	6123038.96	2196922.40	11.47	3.73	1.79	0.84	2.56	noise; early dominates, flat decay in late time	021616a(grid8C)
N/A	N/A	6123039.78	2196952.11	2.47	2.90	2.72	2.71	2.52	flat decay	021616a(grid8C)
N/A	N/A	6123044.38	2197061.86	25.46	18.57	11.82	6.82	11.32	same source as 167	021616a(grid8C)
N/A	N/A	6123054.67	2197013.38	9.74	5.96	2.50	0.63	2.82	same source as 163	021616a(grid8C)
N/A	N/A	6123057.30	2196984.04	68.73	199.05	8.89	9.78	44.41	noise; early dominates, flat decay in late time	021616a(grid8C)
N/A	N/A	6123068.67	2196925.52	16.71	10.96	7.92	4.74	7.39	same source as 157	021616a(grid8C)
N/A	N/A	6123070.01	2197046.48	26.69	1.69	0.31	1.80	3.83	noise; early dominates, flat decay in late time	021616a(grid8C)
N/A	N/A	6123077.08	2197002.21	48.04	29.33	12.76	2.95	13.92	same source as 161	021616a(grid8C)
N/A	N/A	6123085.25	2197069.11	20.50	13.57	7.35	3.16	7.38	same source as 162	021616a(grid8C)
N/A	N/A	6123086.96	2196911.83	52.92	16.37	1.66	-0.55	8.15	same source as 155	021616a(grid8C)
N/A	N/A	6123087.33	2197000.22	51.21	25.40	6.84	0.82	11.26	same source as 158	021616a(grid8C)
N/A	N/A	6123088.54	2196992.05	14.23	7.31	1.99	0.49	3.30	noise; early dominates, flat decay in late time	021616a(grid8C)
N/A	N/A	6123090.40	2197000.62	91.05	44.02	12.43	0.96	19.69	same source as 158	021616a(grid8C)
N/A	N/A	6123091.41	2196997.28	39.08	19.99	6.01	1.19	9.12	same source as 158	021616a(grid8C)
N/A	N/A	6123115.58	2196984.67	12.30	6.88	4.57	2.31	4.44	same source as 156	021616a(grid8C)
N/A	N/A	6123182.09	2197339.50	12.88	8.03	3.44	0.79	3.76	same source as 324	021717e
N/A	N/A	6123184.56	2197351.21	40.15	25.67	11.29	3.35	12.34	same source as 325	021717e
N/A	N/A	6123185.72	2197335.87	58.39	36.76	15.40	3.61	17.07	same source as 324	021717e
N/A	N/A	6123185.78	2197345.16	33.89	22.77	10.85	3.09	11.03	same source as 325	021717e
N/A	N/A	6123186.29	2197285.84	15.00	10.61	6.70	3.66	6.40	same source as 326	021717e
N/A	N/A	6123215.43	2197361.86	7.44	5.44	3.16	1.31	2.95	Same source as 328	021717e
N/A	N/A	6123250.66	2197443.96	8.93	6.92	4.47	2.46	4.14	same source as 331	021717e
N/A	N/A	6123423.76	2197579.60	19.75	12.94	6.91	2.45	6.79	same source as 336	021717e
N/A	N/A	6123426.69	2197577.89	21.56	14.79	7.83	3.30	7.85	same source as 336	021717e
N/A	N/A	6123369.38	2197592.05	4.76	3.45	2.75	2.42	2.73	same as 67	021811C_021817A
N/A	N/A	6123349.19	2197569.99	11.91	7.91	4.64	2.50	4.66	same as seed#5	021811C_021817A
N/A	N/A	6123345.91	2197627.76	5.05	3.75	2.62	1.97	2.58	flat decay	021811C_021817A
N/A	N/A	6123339.35	2197641.90	6.73	5.27	3.78	2.64	3.56	flat decay	021811C_021817A
N/A	N/A	6123326.85	2197559.30	4.80	3.70	2.84	1.98	2.61	flat decay	021811C_021817A
N/A	N/A	6123326.22	2197610.92	3.03	2.98	2.81	2.80	2.65	flat decay	021811C_021817A
N/A	N/A	6123322.80	2197615.37	3.77	2.99	2.47	2.54	2.53	flat decay	021811C_021817A
N/A	N/A	6123297.93	2197568.66	4.57	3.59	2.97	2.53	2.83	flat decay	021811C_021817A
N/A	N/A	6123293.77	2197537.86	3.69	3.37	2.85	2.50	2.66	flat decay	021811C_021817A
N/A	N/A	6123287.28	2197516.89	7.27	4.81	3.10	1.63	2.95	edge of accessible area	021811C_021817A
N/A	N/A	6123272.35	2197554.05	4.08	3.34	2.89	2.19	2.58	flat decay	021811C_021817A
N/A	N/A	6123270.87	2197560.07	8.00	5.71	3.96	2.55	3.77	flat decay	021811C_021817A
N/A	N/A	6123261.86	2197564.52	6.10	4.94	4.06	2.99	3.66	flat decay	021811C_021817A
N/A	N/A	6123260.08	2197550.96	46.62	34.19	20.44	11.37	19.98	same as 69	021811C_021817A
N/A	N/A	6123256.13	2197539.06	3.17	2.81	2.72	2.81	2.62	flat decay	021811C_021817A
N/A	N/A	6123248.24	2197498.33	53.34	39.12	24.25	12.69	22.94	same as 70	021811C_021817A
N/A	N/A	6123247.43	2197497.82	55.06	40.49	24.83	13.06	23.63	same as 70	021811C_021817A
N/A	N/A	6123246.13	2197498.41	8.49	5.92	3.66	1.56	3.36	same as 70	021811C_021817A
N/A	N/A	6123234.38	2197526.07	4.89	3.53	2.56	2.11	2.58	flat decay	021811C_021817A
N/A	N/A	6123228.14	2197478.09	4.23	3.81	2.60	2.17	2.59	flat decay	021811C_021817A
N/A	N/A	6123226.26	2197475.92	3.52	3.21	2.87	2.69	2.71	flat decay	021811C_021817A
N/A	N/A	6123220.64	2197534.75	3.41	3.01	2.83	2.68	2.65	flat decay	021811C_021817A
N/A	N/A	6123220.39	2197477.49	9.09	5.33	2.62	1.04	2.85	same as 71	021811C_021817A
N/A	N/A	6123217.16	2197480.53	5.26	4.38	4.20	3.77	3.85	flat decay	021811C_021817A
N/A	N/A	6123216.79	2197440.78	2.95	3.18	2.67	2.84	2.66	flat decay	021811C_021817A
N/A	N/A	6123210.05	2197532.85	4.70	3.19	2.48	2.22	2.53	flat decay	021811C_021817A
N/A	N/A	6123204.49	2197501.90	5.58	3.81	2.92	2.48	2.94	flat decay	021811C_021817A
N/A	N/A	6123201.77	2197431.53	6.20	4.66	3.11	2.16	3.04	flat decay	021811C_021817A
N/A	N/A	6123199.39	2197460.63	6.29	4.29	2.89	1.93	2.84	same as qc_5-22	021811C_021817A
N/A	N/A	6123194.15	2197440.66	17.75	12.73	8.38	4.89	7.95	same as qc_5-12	021811C_021817A
N/A	N/A	6123182.75	2197417.56	7.57	5.40	3.22	1.47	3.04	same as 021810-039	021811C_021817A
N/A	N/A	6123168.73	2197334.68	4.04	3.36	2.49	2.32	2.53	flat decay	021811C_021817A
N/A	N/A	6123164.73	2197382.07	5.71	4.15	2.94	1.47	2.58	flat decay	021811C_021817A
N/A	N/A	6123163.79	2197466.00	8.86	5.84	3.63	1.94	3.54	same as 021810-034	021811C_021817A
N/A	N/A	6123157.88	2197389.82	6.76	4.98	3.75	3.32	3.80	flat decay	021811C_021817A
N/A	N/A	6123144.62	2197402.03	8.17	5.98	3.78	2.02	3.56	same as qc_5-19	021811C_021817A
N/A	N/A	6123138.28	2197410.47	6.71	5.04	3.00	1.42	2.82	same as 021810-032	021811C_021817A
N/A	N/A	6123130.93	2197357.61	5.24	3.93	2.71	1.66	2.52	flat decay	021811C_021817A
N/A	N/A	6123127.99	2197426.75	3.37	3.28	3.01	3.37	3.02	flat decay	021811C_021817A
N/A	N/A	6123127.25	2197385.36	8.82	6.96	4.32	2.29	4.03	same as 021810-030	021811C_021817A
N/A	N/A	6123122.69	2197353.44	4.86	3.59	2.63	2.19	2.63	flat decay	021811C_021817A
N/A	N/A	6123120.36	2197341.01	7.58	5.42	3.49	2.27	3.45	flat decay	021811C_021817A
N/A	N/A	6123119.16	2197339.23	6.63	4.80	3.15	1.92	3.02	flat decay	021811C_021817A
N/A	N/A	6123116.50	2197395.12	9.63	7.50	4.95	3.27	4.76	flat decay	021811C_021817A
N/A	N/A	6123106.39	2197310.76	20.26	15.45	10.00	5.68	9.36	same as 72	021811C_021817A
N/A	N/A	6123104.00	2197314.93	6.80	4.98	2.97	1.58	2.88	part of 72	021811C_021817A

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123103.88	2197311.12	7.65	5.43	3.60	2.38	3.53	part of 72	021811C_021817A
N/A	N/A	6123100.30	2197378.53	6.83	5.22	2.92	1.24	2.76	same as 021810-027	021811C_021817A
N/A	N/A	6123094.33	2197319.66	6.91	5.37	4.01	2.95	3.78	flat decay	021811C_021817A
N/A	N/A	6123051.60	2196801.78	5.52	3.97	2.59	1.94	2.65	flat decay	021811C_021817A
N/A	N/A	6123051.48	2196866.17	7.16	6.11	4.52	3.70	4.37	flat decay	021811C_021817A
N/A	N/A	6123050.81	2196868.37	6.88	5.09	2.87	1.48	2.84	flat decay	021811C_021817A
N/A	N/A	6123050.37	2196869.77	6.31	4.44	3.05	2.58	3.18	flat decay	021811C_021817A
N/A	N/A	6123044.78	2196845.28	5.61	3.79	3.32	3.68	3.54	flat decay	021811C_021817A
N/A	N/A	6123044.55	2196825.13	2.33	3.14	3.24	3.15	2.86	flat decay	021811C_021817A
N/A	N/A	6123044.03	2196871.15	4.58	3.49	2.57	2.58	2.74	flat decay	021811C_021817A
N/A	N/A	6123039.46	2196865.93	4.01	3.95	2.85	3.21	3.09	flat decay	021811C_021817A
N/A	N/A	6123038.97	2196867.63	4.48	4.41	3.68	3.79	3.66	flat decay	021811C_021817A
N/A	N/A	6123037.02	2196875.44	4.03	3.49	2.58	2.39	2.60	flat decay	021811C_021817A
N/A	N/A	6123036.77	2196839.34	4.06	3.11	2.83	2.78	2.77	flat decay	021811C_021817A
N/A	N/A	6123036.09	2196881.58	6.16	5.71	4.69	4.05	4.39	flat decay	021811C_021817A
N/A	N/A	6123035.91	2196883.33	7.03	5.34	3.68	2.88	3.68	flat decay	021811C_021817A
N/A	N/A	6123031.40	2196782.05	84.05	61.50	39.61	24.86	38.52	same as 76	021811C_021817A
N/A	N/A	6123029.01	2196883.12	9.86	7.39	4.47	3.55	4.77	flat decay	021811C_021817A
N/A	N/A	6123028.60	2196884.89	8.14	5.84	3.28	2.73	3.71	flat decay	021811C_021817A
N/A	N/A	6123028.37	2196885.96	6.34	4.83	2.92	2.47	3.17	flat decay	021811C_021817A
N/A	N/A	6123025.93	2196867.41	1.89	3.75	3.77	3.81	3.32	flat decay	021811C_021817A
N/A	N/A	6123025.69	2196824.62	2.61	3.22	3.22	3.21	2.92	flat decay	021811C_021817A
N/A	N/A	6123022.25	2196858.85	0.73	3.67	4.23	4.78	3.71	flat decay	021811C_021817A
N/A	N/A	6123020.96	2196888.01	8.30	6.84	5.48	4.58	5.21	flat decay	021811C_021817A
N/A	N/A	6123013.30	2196774.14	7.79	5.00	3.21	2.25	3.32	turning anomaly	021811C_021817A
N/A	N/A	6123011.85	2196897.25	2.06	3.26	3.40	3.86	3.19	flat decay	021811C_021817A
N/A	N/A	6123008.61	2196773.83	5.28	4.51	3.19	2.24	2.98	flat decay	021811C_021817A
N/A	N/A	6123005.98	2196866.96	3.40	2.92	2.25	2.81	2.54	flat decay	021811C_021817A
N/A	N/A	6123005.59	2196868.79	3.63	3.11	2.72	3.28	2.91	flat decay	021811C_021817A
N/A	N/A	6123002.11	2196860.30	2.95	2.63	2.35	3.14	2.62	flat decay	021811C_021817A
N/A	N/A	6122998.85	2196872.56	2.90	3.19	3.18	3.35	2.99	flat decay	021811C_021817A
N/A	N/A	6122998.13	2196897.95	3.38	3.40	3.01	2.70	2.76	flat decay	021811C_021817A
N/A	N/A	6122992.03	2196873.40	3.89	4.26	3.98	4.27	3.85	flat decay	021811C_021817A
N/A	N/A	6122991.61	2196835.77	3.92	2.75	2.55	2.93	2.70	flat decay	021811C_021817A
N/A	N/A	6122990.78	2196838.75	2.38	3.88	3.31	3.68	3.22	flat decay	021811C_021817A
N/A	N/A	6122990.67	2196839.22	2.49	3.88	4.07	3.87	3.50	flat decay	021811C_021817A
N/A	N/A	6122990.13	2196860.59	4.13	4.97	2.83	3.37	3.32	flat decay	021811C_021817A
N/A	N/A	6122990.07	2196880.14	4.10	3.33	2.50	2.59	2.65	flat decay	021811C_021817A
N/A	N/A	6122988.76	2196903.21	2.70	3.10	2.91	2.91	2.71	flat decay	021811C_021817A
N/A	N/A	6122987.92	2196886.57	3.26	2.41	2.40	3.32	2.70	flat decay	021811C_021817A
N/A	N/A	6122984.85	2196859.70	2.97	3.20	2.66	3.14	2.78	flat decay	021811C_021817A
N/A	N/A	6122984.70	2196860.00	2.82	2.93	2.54	2.77	2.54	flat decay	021811C_021817A
N/A	N/A	6122981.93	2196826.66	5.67	4.65	3.02	2.36	3.05	flat decay	021811C_021817A
N/A	N/A	6122980.96	2196888.01	2.51	3.62	3.16	3.94	3.26	flat decay	021811C_021817A
N/A	N/A	6122979.59	2196858.18	3.56	4.30	3.84	3.78	3.58	flat decay	021811C_021817A
N/A	N/A	6122979.46	2196892.05	2.99	3.70	3.38	3.27	3.10	flat decay	021811C_021817A
N/A	N/A	6122974.38	2196889.77	3.77	3.76	3.20	3.00	3.03	flat decay	021811C_021817A
N/A	N/A	6122973.87	2196857.30	4.14	3.97	3.59	3.98	3.61	flat decay	021811C_021817A
N/A	N/A	6122973.84	2196876.13	3.49	3.24	2.78	3.15	2.88	flat decay	021811C_021817A
N/A	N/A	6122972.90	2196893.52	3.99	3.57	2.54	2.35	2.59	flat decay	021811C_021817A
N/A	N/A	6122972.87	2196859.67	5.16	5.20	4.45	5.40	4.72	flat decay	021811C_021817A
N/A	N/A	6122972.49	2196772.74	4.58	5.58	3.88	1.97	3.14	turning anomaly	021811C_021817A
N/A	N/A	6122970.96	2196844.93	4.54	3.81	3.05	2.86	3.02	same as qc_5-13	021811C_021817A
N/A	N/A	6122967.98	2196905.98	3.41	2.54	2.35	2.91	2.55	flat decay	021811C_021817A
N/A	N/A	6122965.57	2196881.29	3.76	3.22	2.17	2.91	2.65	flat decay	021811C_021817A
N/A	N/A	6122964.95	2196897.55	3.57	2.87	2.49	3.22	2.79	flat decay	021811C_021817A
N/A	N/A	6122964.42	2196867.82	3.29	3.78	3.12	2.81	2.88	flat decay	021811C_021817A
N/A	N/A	6122964.11	2196791.63	35.19	23.80	12.71	6.10	13.05	same as 74	021811C_021817A
N/A	N/A	6122963.37	2196850.31	4.62	3.93	3.65	3.38	3.42	flat decay	021811C_021817A
N/A	N/A	6122961.88	2196890.94	4.31	4.08	3.31	3.12	3.21	flat decay	021811C_021817A
N/A	N/A	6122958.43	2196882.89	3.92	2.55	2.73	2.76	2.64	flat decay	021811C_021817A
N/A	N/A	6122954.16	2196909.60	2.10	3.17	2.94	3.24	2.80	flat decay	021811C_021817A
N/A	N/A	6122953.36	2196911.45	2.15	3.32	3.14	3.72	3.08	flat decay	021811C_021817A
N/A	N/A	6122949.44	2196932.55	2.55	2.63	2.71	3.21	2.69	flat decay	021811C_021817A
N/A	N/A	6122949.27	2196814.57	2.95	2.99	2.72	2.70	2.58	flat decay	021811C_021817A
N/A	N/A	6122948.77	2196892.19	1.63	3.57	3.38	3.00	2.83	flat decay	021811C_021817A
N/A	N/A	6122947.59	2196860.79	3.26	3.03	2.54	2.64	2.55	flat decay	021811C_021817A
N/A	N/A	6122946.88	2196937.14	14.64	8.82	4.33	2.40	4.96	turning anomaly	021811C_021817A
N/A	N/A	6122946.75	2196911.65	3.75	3.40	2.65	2.51	2.63	flat decay	021811C_021817A
N/A	N/A	6122944.78	2196915.95	4.11	3.97	3.39	3.78	3.47	flat decay	021811C_021817A
N/A	N/A	6122942.92	2196919.01	0.65	3.02	2.84	3.12	2.56	flat decay	021811C_021817A
N/A	N/A	6122940.88	2196909.40	5.85	2.91	2.25	2.44	2.64	flat decay	021811C_021817A
N/A	N/A	6122939.60	2196761.72	5.96	4.98	3.76	2.67	3.45	flat decay	021811C_021817A
N/A	N/A	6122937.54	2196811.38	3.06	3.13	2.75	2.88	2.70	flat decay	021811C_021817A
N/A	N/A	6122937.00	2196875.69	1.46	3.15	3.06	3.23	2.76	flat decay	021811C_021817A
N/A	N/A	6122934.96	2196909.63	85.35	55.92	29.90	14.26	30.91	same as 73	021811C_021817A
N/A	N/A	6122934.29	2196874.96	8.04	4.75	2.66	2.00	3.07	flat decay	021811C_021817A
N/A	N/A	6122933.60	2196877.50	13.80	8.21	3.92	1.65	4.36	same as 021810-019	021811C_021817A
N/A	N/A	6122930.69	2196906.83	12.94	7.46	3.68	1.67	4.11	same as 73	021811C_021817A
N/A	N/A	6122926.07	2196785.46	10.46	6.75	2.29	-0.08	2.66	same as 021810-018	021811C_021817A
N/A	N/A	6122911.88	2196895.77	6.37	4.36	2.83	1.45	2.65	same as 021810-016	021811C_021817A
N/A	N/A	6122910.44	2196895.33	6.59	5.08	3.09	1.62	2.92	turning anomaly	021811C_021817A
N/A	N/A	6122881.64	2196822.12	4.36	4.02	3.50	3.02	3.21	flat decay	021811C_021817A
N/A	N/A	6122876.43	2196802.96	2.45	2.45	2.39	3.21	2.58	flat decay	021811C_021817A
N/A	N/A	6122876.17	2196888.35	12.73	9.78	5.94	3.16	5.64	turning anomaly	021811C_021817A
N/A	N/A	6122866.88	2196787.01	60.94	42.94	24.85	12.25	24.28	same as 75	021811C_021817A
N/A	N/A	6122792.45	2197404.84	6.57	5.22	3.24	1.88	3.08	same as 021810-013	021811C_021817A
N/A	N/A	6122783.66	2197405.51	38.89	16.52	4.79	0.63	8.02	same as qc_5-24	021811C_021817A
N/A	N/A	6122782.23	2197404.50	53.85	35.90	19.31	8.30	19.42	same as qc_5-24	021811C_021817A
N/A	N/A	6122780.06	2197052.34	4.29	3.56	2.40	1.60	2.27	low amplitude; poor decay	021910_sp
N/A	N/A	6122780.93	2197050.65	4.40	3.55	2.67	1.86	2.45	low amplitude; poor decay	021910_sp
N/A	N/A	6122782.72	2197058.31	4.19	4.10	3.20	2.04	2.72	low amplitude; poor decay	021910_sp
N/A	N/A	6122782.74	2197045.06	10.49	8.79	5.77	3.74	5.46	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6122783.02	2197047.26	6.18	4.81	3.21	1.24	2.71	flat decay	021910_sp

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6122784.29	2197042.78	11.66	9.50	6.57	4.18	6.07	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6122819.95	2197028.36	5.78	4.28	2.49	1.42	2.48	same as 77	021910_sp
N/A	N/A	6122835.62	2196998.13	5.51	4.69	3.36	2.74	3.28	low amplitude; poor decay	021910_sp
N/A	N/A	6122857.70	2196980.48	5.29	4.16	2.83	1.60	2.57	low amplitude; poor decay	021910_sp
N/A	N/A	6122872.14	2196966.83	6.40	4.71	2.58	1.33	2.59	low amplitude; poor decay	021910_sp
N/A	N/A	6122877.10	2196977.69	41.01	10.70	1.16	0.44	6.34	noise; early time dominating	021910_sp
N/A	N/A	6122887.69	2196978.68	5.71	3.30	2.32	1.43	2.28	low amplitude; poor decay	021910_sp
N/A	N/A	6122902.29	2196965.44	5.07	3.49	2.50	1.88	2.48	low amplitude; poor decay	021910_sp
N/A	N/A	6123000.32	2197011.06	6.22	4.52	2.93	1.60	2.74	flat decay	021910_sp
N/A	N/A	6123044.68	2197097.15	6.91	4.61	2.74	1.15	2.59	low amplitude; poor decay in early time	021910_sp
N/A	N/A	6123045.93	2197100.20	6.90	3.98	2.57	1.07	2.42	flat decay	021910_sp
N/A	N/A	6123159.61	2197905.80	5.56	4.09	2.26	1.04	2.21	flat decay	021910_sp
N/A	N/A	6123215.43	2197827.46	4.26	3.48	2.70	1.48	2.27	low amplitude; poor decay	021910_sp
N/A	N/A	6123222.12	2197821.73	5.75	4.07	2.60	1.56	2.53	low amplitude; poor decay	021910_sp
N/A	N/A	6123223.44	2197818.27	15.92	12.22	6.97	3.13	6.59	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123229.78	2197810.77	4.99	3.64	2.60	1.39	2.31	flat decay	021910_sp
N/A	N/A	6123230.65	2197809.72	7.24	5.81	4.25	2.60	3.80	flat decay	021910_sp
N/A	N/A	6123237.75	2197798.12	5.40	4.19	2.88	1.75	2.66	flat decay	021910_sp
N/A	N/A	6123241.53	2197791.40	10.27	7.31	4.35	2.09	4.16	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123253.57	2197768.19	6.80	5.39	3.56	2.09	3.30	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123259.87	2197753.53	13.87	10.92	7.45	4.07	6.69	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123265.66	2197724.03	13.05	9.84	6.13	3.28	5.78	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123270.65	2197717.35	5.48	3.88	2.25	1.04	2.16	flat decay	021910_sp
N/A	N/A	6123281.00	2197701.97	9.42	7.33	4.40	2.58	4.29	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123284.84	2197691.50	10.21	7.95	5.26	2.68	4.72	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123287.94	2197688.96	10.35	7.48	4.47	1.89	4.14	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123293.87	2197775.78	36.25	19.79	7.56	2.08	9.56	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123303.65	2197655.03	8.99	6.05	3.37	1.82	3.47	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123304.09	2197676.20	17.10	9.72	4.13	1.20	4.80	turning anomaly (in AGM Area)	021910_sp
N/A	N/A	6123322.39	2197736.05	4.77	4.15	2.93	1.81	2.63	flat decay	021910_sp
N/A	N/A	6122761.77	2196951.98	4.01	3.47	2.76	2.04	2.50	poor decay	022213a
N/A	N/A	6122771.80	2196914.27	3.85	2.78	2.06	1.43	1.94	poor decay	022213a
N/A	N/A	6122777.49	2196920.27	3.98	3.22	2.42	1.88	2.30	poor decay	022213a
N/A	N/A	6122799.04	2196988.46	4.88	4.25	3.23	2.31	2.94	poor decay	022213a
N/A	N/A	6122807.87	2196846.02	3.51	2.74	1.85	1.41	1.84	poor decay	022213a
N/A	N/A	6122829.11	2196911.65	3.76	3.85	2.78	2.16	2.59	poor decay	022213a
N/A	N/A	6122880.64	2196918.35	3.98	3.71	3.17	2.36	2.77	poor decay	022213a
N/A	N/A	6122882.84	2196948.46	3.35	2.68	2.41	2.02	2.21	poor decay	022213a
N/A	N/A	6122883.84	2196928.38	2.98	2.88	2.50	2.41	2.39	poor decay	022213a
N/A	N/A	6122886.83	2196935.11	5.08	3.95	3.31	3.14	3.28	poor decay	022213a
N/A	N/A	6122766.41	2197421.98	27.55	18.91	10.44	5.31	10.61	same as 101	022310_sp-1
N/A	N/A	6122768.27	2197422.40	7.57	5.71	3.65	2.33	3.55	same as 101	022310_sp-1
N/A	N/A	6122774.82	2197480.18	170.53	107.13	54.88	23.07	57.55	same as 100	022310_sp-1
N/A	N/A	6122788.22	2197458.51	4.48	3.26	2.88	3.02	2.95	flat decay	022310_sp-1
N/A	N/A	6122801.93	2197380.82	28.98	21.97	13.81	7.81	13.12	same as 99	022310_sp-1
N/A	N/A	6122824.22	2197405.92	7.28	4.91	3.19	1.64	3.00	same as 98	022310_sp-1
N/A	N/A	6122827.03	2197408.23	72.19	45.76	24.17	10.81	25.10	same as 98	022310_sp-1
N/A	N/A	6122829.15	2197492.52	3.88	3.32	2.98	3.13	2.97	flat decay	022310_sp-1
N/A	N/A	6122833.38	2197480.83	25.36	15.12	6.99	2.33	7.68	same as 97	022310_sp-1
N/A	N/A	6122836.46	2197480.34	49.37	30.30	15.50	6.44	16.35	same as 97	022310_sp-1
N/A	N/A	6122843.67	2197483.56	3.17	3.17	2.71	3.17	2.83	flat decay	022310_sp-1
N/A	N/A	6122861.95	2197355.06	6.34	4.83	2.79	1.83	2.86	same as 145	022310_sp-1
N/A	N/A	6122873.05	2197444.49	3.00	3.27	2.72	2.73	2.64	flat decay	022310_sp-1
N/A	N/A	6122879.98	2197469.00	4.15	3.55	2.80	3.02	2.94	flat decay	022310_sp-1
N/A	N/A	6122880.66	2197504.64	3.28	3.17	2.61	2.61	2.58	flat decay	022310_sp-1
N/A	N/A	6122884.02	2197456.49	3.15	2.99	2.92	3.15	2.84	same as 142	022310_sp-1
N/A	N/A	6122899.19	2197411.40	21.61	16.76	11.11	6.46	10.31	same as 94	022310_sp-1
N/A	N/A	6122914.82	2197472.55	4.27	3.17	2.62	2.63	2.69	flat decay	022310_sp-1
N/A	N/A	6122921.94	2197393.00	9.77	6.08	2.86	0.72	2.96	poor decay late time	022310_sp-1
N/A	N/A	6122924.88	2197451.81	20.03	14.95	9.14	4.83	8.69	same as 92	022310_sp-1
N/A	N/A	6122934.74	2197392.40	20.99	15.69	10.16	5.88	9.60	same as 91	022310_sp-1
N/A	N/A	6124088.09	2198411.75	36.36	25.56	15.25	8.25	14.98	same as 142	022410_spft
N/A	N/A	6124155.90	2198268.28	66.25	38.25	13.58	2.66	17.25	same as 120	022410_spft
N/A	N/A	6124155.01	2198269.26	48.48	28.39	10.38	1.56	12.64	same as 022410-038	022410_spft
N/A	N/A	6124163.74	2198359.59	225.69	167.66	106.78	63.04	102.38	same as 127	022410_spft
N/A	N/A	6123989.26	2198330.22	3.76	3.36	3.08	3.44	3.12	poor decay	022410_spft
N/A	N/A	6124002.00	2198330.96	4.68	3.94	3.76	3.94	3.69	poor decay	022410_spft
N/A	N/A	6124003.37	2198325.20	5.50	4.51	3.97	4.42	4.11	poor decay	022410_spft
N/A	N/A	6124054.95	2198309.95	4.33	3.63	2.59	2.68	2.78	poor decay	022410_spft
N/A	N/A	6124061.23	2198304.94	5.01	4.73	4.56	4.56	4.30	poor decay	022410_spft
N/A	N/A	6124068.22	2198403.37	4.21	3.71	3.25	3.69	3.37	poor decay	022410_spft
N/A	N/A	6124085.59	2198327.66	30.74	17.68	6.71	1.21	8.09	same as 133	022410_spft
N/A	N/A	6124085.96	2198414.75	31.18	21.94	13.41	7.34	13.04	same as 144	022410_spft
N/A	N/A	6124088.82	2198324.16	298.71	186.78	84.01	24.23	90.86	same as 133	022410_spft
N/A	N/A	6124089.79	2198299.31	4.15	3.86	3.29	3.20	3.19	poor decay	022410_spft
N/A	N/A	6124090.79	2198411.25	4.49	3.56	3.20	3.22	3.17	poor decay	022410_spft
N/A	N/A	6124110.24	2198306.94	3.47	3.47	3.10	2.91	2.89	poor decay	022410_spft
N/A	N/A	6124126.32	2198259.38	3.86	2.95	2.76	2.38	2.54	poor decay	022410_spft
N/A	N/A	6124137.29	2198419.23	3.86	3.46	2.68	2.38	2.60	poor decay	022410_spft
N/A	N/A	6124153.16	2198270.66	18.90	12.51	5.06	1.48	5.77	same as 120	022410_spft
N/A	N/A	6124153.40	2198234.82	7.64	5.73	3.63	2.08	3.46	same as 114	022410_spft
N/A	N/A	6124161.66	2198358.03	204.34	151.66	97.06	57.33	92.87	same as 129	022410_spft
N/A	N/A	6124167.50	2198329.37	4.01	3.45	2.89	2.52	2.73	poor decay	022410_spft
N/A	N/A	6124169.78	2198198.47	4.09	3.92	2.94	2.13	2.66	same as 108	022410_spft
N/A	N/A	6124173.47	2198365.90	5.11	4.89	4.32	4.05	4.06	poor decay	022410_spft
N/A	N/A	6124177.19	2198322.46	2.78	3.34	3.06	2.78	2.74	poor decay	022410_spft
N/A	N/A	6123521.95	2198247.39	25.88	18.33	11.24	5.38	10.57	same as 191	022510(sp)
N/A	N/A	6123528.99	2198243.42	19.45	12.67	6.52	2.45	6.62	same as 191	022510(sp)
N/A	N/A	6123585.15	2198215.18	7.06	5.22	3.13	1.43	2.92	same as 189	022510(sp)
N/A	N/A	6123629.07	2198337.39	25.49	13.34	3.99	0.36	5.84	same as 194	022510(sp)
N/A	N/A	6123629.58	2198340.20	9.24	5.09	2.18	0.92	2.67	same as 194	022510(sp)
N/A	N/A	6123634.99	2198364.41	2.11	2.97	2.74	2.83	2.55	poor decay	022510(sp)
N/A	N/A	6123647.88	2198312.81	3.11	3.39	3.37	3.40	3.12	same as 201	022510(sp)
N/A	N/A	6123651.58	2198323.58	3.53	3.30	2.94	3.04	2.89	poor decay	022510(sp)

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123654.40	2198346.23	5.18	2.83	2.31	2.78	2.71	poor decay	022510(sp)
N/A	N/A	6123657.84	2198156.36	3.27	3.14	2.79	2.90	2.74	poor decay	022510(sp)
N/A	N/A	6123667.84	2198320.77	110.41	76.49	44.36	21.96	43.53	same as 193	022510(sp)
N/A	N/A	6123671.71	2198321.62	126.74	83.78	45.68	21.32	46.40	same as 193	022510(sp)
N/A	N/A	6123673.93	2198320.45	33.33	21.98	12.74	6.06	12.56	same as 193	022510(sp)
N/A	N/A	6123676.44	2198145.72	3.63	3.74	3.46	4.00	3.50	poor decay	022510(sp)
N/A	N/A	6123677.13	2198151.73	5.62	4.59	2.81	1.95	2.81	same as 184	022510(sp)
N/A	N/A	6123680.53	2198149.20	3.47	3.19	2.62	2.71	2.64	poor decay	022510(sp)
N/A	N/A	6123797.53	2198374.37	6.52	4.41	2.52	1.28	2.52	same as 182	022510(sp)
N/A	N/A	6123800.28	2198374.29	9.46	6.21	3.15	1.15	3.21	same as 182	022510(sp)
N/A	N/A	6123886.56	2198366.96	4.36	3.54	2.90	2.93	2.95	poor decay	022510(sp)
N/A	N/A	6123937.14	2198378.60	7.06	5.10	4.28	4.38	4.42	poor decay	022510(sp)
N/A	N/A	6123937.45	2198382.00	1.86	2.75	2.99	3.72	2.93	poor decay	022510(sp)
N/A	N/A	6123940.28	2198382.77	5.24	4.74	4.36	4.71	4.34	same as 196	022510(sp)
N/A	N/A	6123942.79	2198392.97	3.22	2.81	2.54	2.81	2.58	poor decay	022510(sp)
N/A	N/A	6123959.74	2198345.41	10.19	6.45	5.27	5.17	5.53	poor decay	022510(sp)
N/A	N/A	6123967.28	2198341.38	7.88	5.71	3.75	1.58	3.30	same as 174	022510(sp)
N/A	N/A	6123989.69	2198350.92	4.56	3.41	2.70	2.35	2.66	same as 173	022510(sp)
N/A	N/A	6123994.20	2198385.09	10.51	7.72	5.09	3.24	4.91	same as 175	022510(sp)
N/A	N/A	6123997.39	2198380.01	734.83	488.15	263.66	126.48	270.29	same as 175	022510(sp)
N/A	N/A	6123998.38	2198378.76	78.69	50.27	27.72	13.25	28.38	same as 175	022510(sp)
N/A	N/A	6124067.69	2198418.38	3.65	3.41	3.05	2.72	2.81	same as 172	022510(sp)
N/A	N/A	6123544.80	2198262.00	65.30	0.46	0.03	-0.02	6.75	noise; all the signal is in channel 1	022610a(sp)
N/A	N/A	6123551.87	2198265.77	3.45	3.35	2.80	3.17	2.91	same as 266	022610a(sp)
N/A	N/A	6123565.38	2198239.29	3.59	3.44	3.26	3.72	3.28	flat decay	022610a(sp)
N/A	N/A	6123567.51	2198249.60	3.13	3.43	3.15	3.79	3.23	flat decay	022610a(sp)
N/A	N/A	6123572.23	2198243.39	17.48	13.24	8.24	3.98	7.58	same as 252	022610a(sp)
N/A	N/A	6123575.74	2198271.36	348.44	1.26	0.33	0.17	36.00	noise; all the signal is in channel 1	022610a(sp)
N/A	N/A	6123590.82	2198246.42	65.58	-0.65	0.65	0.54	7.00	noise; all the signal is in channel 1	022610a(sp)
N/A	N/A	6123605.30	2198250.24	3.42	2.94	2.58	2.76	2.61	flat decay	022610a(sp)
N/A	N/A	6123615.31	2198256.39	3.65	3.46	3.19	3.00	2.97	flat decay	022610a(sp)
N/A	N/A	6123623.75	2198272.41	4.01	3.26	2.63	2.63	2.68	flat decay	022610a(sp)
N/A	N/A	6123120.53	2197427.19	6.98	3.77	2.34	2.33	2.86	flat decay	030110(sp1)
N/A	N/A	6123123.87	2197452.77	19.68	15.07	10.08	6.71	9.70	same source as 207	030110(sp1)
N/A	N/A	6123133.95	2197441.93	4.59	3.76	3.13	2.95	3.08	flat decay	030110(sp1)
N/A	N/A	6123137.97	2197904.52	5.49	4.29	3.04	2.05	2.85	flat decay	030110(sp1)
N/A	N/A	6123141.85	2197925.43	5.41	4.36	3.21	2.31	3.00	flat decay	030110(sp1)
N/A	N/A	6123162.05	2197493.84	5.02	3.63	2.65	2.09	2.62	flat decay	030110(sp1)
N/A	N/A	6123162.35	2197485.68	26.11	17.42	10.29	6.40	10.65	same source as 204	030110(sp1)
N/A	N/A	6123164.28	2197490.28	2.02	2.53	2.55	3.07	2.53	flat decay	030110(sp1)
N/A	N/A	6123165.72	2197483.18	30.82	18.59	8.71	3.61	9.74	same source as 204	030110(sp1)
N/A	N/A	6123168.77	2197971.52	4.19	3.91	3.03	2.14	2.69	flat decay	030110(sp1)
N/A	N/A	6123175.79	2197923.76	6.28	5.41	3.90	2.76	3.62	flat decay	030110(sp1)
N/A	N/A	6123185.82	2197918.56	146.74	58.73	12.67	0.79	27.67	same source as 202	030110(sp1)
N/A	N/A	6123189.38	2197921.15	2227.53	1000.18	247.30	24.65	456.07	same source as 202	030110(sp1)
N/A	N/A	6123189.63	2197922.38	125.80	47.62	8.77	0.00	22.49	same source as 202	030110(sp1)
N/A	N/A	6123211.07	2197954.47	5.19	3.58	2.50	2.59	2.80	flat decay	030110(sp1)
N/A	N/A	6123276.09	2197869.83	3.41	3.36	3.01	2.57	2.70	flat decay	030110(sp1)
N/A	N/A	6123297.02	2197892.27	3.31	3.13	2.69	2.60	2.59	flat decay	030110(sp1)
N/A	N/A	6123308.85	2197852.21	17.76	11.42	5.98	3.03	6.36	same source as 208	030110(sp1)
N/A	N/A	6123386.19	2197807.84	4.57	4.31	2.87	1.61	2.53	flat decay	030110(sp1)
N/A	N/A	6124213.85	2198227.36	3.94	3.31	2.87	2.77	2.80	flat decay	030110(sp1)
N/A	N/A	6124215.81	2198221.97	3.33	3.51	2.59	2.53	2.60	flat decay	030110(sp1)
N/A	N/A	6124216.12	2198225.73	2.26	3.14	2.87	2.78	2.60	flat decay	030110(sp1)
N/A	N/A	6124218.60	2198215.49	4.19	3.31	2.68	2.86	2.81	flat decay	030110(sp1)
N/A	N/A	6124219.63	2198222.80	3.81	3.32	2.33	2.51	2.54	flat decay	030110(sp1)
N/A	N/A	6124219.87	2198223.14	3.00	3.04	2.52	2.79	2.58	flat decay	030110(sp1)
N/A	N/A	6124222.95	2198203.26	58.02	33.36	12.57	2.69	15.41	same source as 205	030110(sp1)
N/A	N/A	6124224.32	2198159.17	7.08	5.16	3.35	2.08	3.24	flat decay	030110(sp1)
N/A	N/A	6124224.92	2198120.87	17.01	10.14	3.44	1.00	4.60	same source as 210	030110(sp1)
N/A	N/A	6124225.14	2198233.43	4.45	3.77	2.96	2.61	2.88	same source as 318	030110(sp1)
N/A	N/A	6124227.57	2198231.38	3.56	3.23	2.69	2.87	2.74	same source as 209	030110(sp1)
N/A	N/A	6124227.65	2198210.10	3.80	3.32	2.95	2.95	2.88	flat decay	030110(sp1)
N/A	N/A	6124228.24	2198221.86	3.06	3.42	2.96	2.78	2.75	flat decay	030110(sp1)
N/A	N/A	6124228.90	2198129.30	18.80	8.97	2.53	0.62	4.22	same source as 209	030110(sp1)
N/A	N/A	6124229.58	2198216.03	3.68	3.24	2.79	2.43	2.60	flat decay	030110(sp1)
N/A	N/A	6124233.78	2198146.80	6.27	4.45	3.26	2.00	2.99	same source as 312	030110(sp1)
N/A	N/A	6124233.83	2198221.45	7.12	5.58	4.33	3.52	4.16	flat decay	030110(sp1)
N/A	N/A	6124237.86	2198240.55	3.04	2.86	2.69	3.49	2.89	flat decay	030110(sp1)
N/A	N/A	6124238.20	2198219.21	3.82	2.45	2.35	3.04	2.64	flat decay	030110(sp1)
N/A	N/A	6124242.44	2198247.90	4.47	3.50	3.14	3.24	3.15	flat decay	030110(sp1)
N/A	N/A	6124242.60	2198209.88	4.19	2.95	2.51	2.78	2.68	flat decay	030110(sp1)
N/A	N/A	6124252.63	2198216.20	2.75	2.84	2.96	2.64	2.57	flat decay	030110(sp1)
N/A	N/A	6124257.24	2198183.61	3.80	3.72	3.27	2.08	2.66	flat decay	030110(sp1)
N/A	N/A	6124262.34	2198213.33	4.18	3.64	3.00	2.82	2.93	flat decay	030110(sp1)
N/A	N/A	6124262.56	2198167.05	188.30	135.23	82.33	47.55	80.88	same source as 203	030110(sp1)
N/A	N/A	6124268.47	2198189.72	1.71	2.90	3.27	3.62	2.96	same source as 315	030110(sp1)
N/A	N/A	6124271.58	2198193.80	3.57	3.45	2.82	3.26	2.98	flat decay	030110(sp1)
N/A	N/A	6124280.43	2198189.02	9.40	6.61	4.07	2.27	3.96	same source as 309	030110(sp1)
N/A	N/A	6124293.45	2198206.95	4.52	3.54	2.45	2.35	2.61	flat decay	030110(sp1)
N/A	N/A	6122956.01	2197476.07	18.70	12.65	7.80	4.08	7.55	same source as 214	030310(sp)
N/A	N/A	6122958.86	2197471.63	18.62	13.43	8.15	4.42	7.89	same source as 214	030310(sp)
N/A	N/A	6123009.41	2197530.22	4.32	3.89	3.38	3.20	3.24	flat decay	030310(sp)
N/A	N/A	6123012.17	2197516.50	5.65	4.76	3.64	3.21	3.58	flat decay	030310(sp)
N/A	N/A	6123028.14	2197528.94	3.22	2.61	2.43	2.79	2.51	flat decay	030310(sp)
N/A	N/A	6123040.36	2197485.43	3.58	2.93	2.59	2.86	2.67	flat decay	030310(sp)
N/A	N/A	6123048.55	2197480.58	3.12	3.08	2.61	2.53	2.51	flat decay	030310(sp)
N/A	N/A	6123049.69	2197541.68	4.04	3.82	3.03	2.86	2.97	flat decay	030310(sp)
N/A	N/A	6123051.03	2197557.25	5.41	4.50	2.94	1.99	2.83	flat decay	030310(sp)
N/A	N/A	6123052.80	2197555.88	6.54	5.18	3.28	2.33	3.27	flat decay	030310(sp)
N/A	N/A	6123052.80	2197532.80	4.02	3.21	3.03	3.21	3.02	flat decay	030310(sp)
N/A	N/A	6123058.87	2197503.49	3.13	2.77	2.86	2.94	2.70	flat decay	030310(sp)
N/A	N/A	6123059.83	2197500.86	3.83	4.07	2.96	2.25	2.71	flat decay	030310(sp)
N/A	N/A	6123062.81	2197500.28	4.76	2.85	2.41	2.41	2.54	same source as 217	030310(sp)

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123064.03	2197498.09	3.62	3.16	2.71	2.53	2.60	same source as 217	030310(sp)
N/A	N/A	6123067.79	2197470.79	5.21	3.69	2.79	2.16	2.71	flat decay	030310(sp)
N/A	N/A	6123075.97	2197575.97	3.36	4.07	3.71	3.89	3.54	flat decay	030310(sp)
N/A	N/A	6123080.32	2197573.47	2.33	2.24	2.94	3.88	2.95	flat decay	030310(sp)
N/A	N/A	6123082.55	2197519.60	4.66	4.06	3.52	3.44	3.43	flat decay	030310(sp)
N/A	N/A	6123083.17	2197541.36	3.49	3.11	2.42	2.68	2.57	flat decay	030310(sp)
N/A	N/A	6123083.27	2197578.08	4.75	2.88	2.35	2.37	2.52	flat decay	030310(sp)
N/A	N/A	6123085.62	2197560.26	3.29	3.08	3.24	3.83	3.23	flat decay	030310(sp)
N/A	N/A	6123085.68	2197512.38	4.79	3.43	2.44	2.17	2.55	flat decay	030310(sp)
N/A	N/A	6123089.00	2197538.94	4.75	3.73	3.04	3.04	3.10	flat decay	030310(sp)
N/A	N/A	6123091.11	2197559.39	2.46	2.76	2.86	3.61	2.91	flat decay	030310(sp)
N/A	N/A	6123091.97	2197568.53	3.81	3.04	2.67	2.85	2.73	flat decay	030310(sp)
N/A	N/A	6123092.31	2197532.48	5.18	3.19	2.51	2.50	2.70	flat decay	030310(sp)
N/A	N/A	6123096.11	2197538.33	4.05	3.49	3.14	3.06	3.03	flat decay	030310(sp)
N/A	N/A	6123097.23	2197461.15	2.92	2.89	2.72	2.90	2.65	flat decay	030310(sp)
N/A	N/A	6123097.46	2197534.86	6.31	4.24	3.25	3.61	3.63	flat decay	030310(sp)
N/A	N/A	6123100.14	2197545.90	3.41	3.38	3.28	3.71	3.25	flat decay	030310(sp)
N/A	N/A	6123113.02	2197499.82	4.57	3.16	2.63	2.46	2.65	flat decay	030310(sp)
N/A	N/A	6123117.56	2197504.65	4.60	4.39	4.03	3.87	3.79	flat decay	030310(sp)
N/A	N/A	6123120.14	2197519.94	4.04	3.24	2.72	2.63	2.70	flat decay	030310(sp)
N/A	N/A	6123120.43	2197560.50	6.92	4.51	3.30	2.78	3.40	flat decay	030310(sp)
N/A	N/A	6123121.32	2197511.85	4.37	3.18	2.47	2.29	2.52	flat decay	030310(sp)
N/A	N/A	6123125.91	2197481.17	4.44	3.15	2.71	2.64	2.73	flat decay	030310(sp)
N/A	N/A	6123139.76	2197515.43	2.84	2.89	2.71	2.81	2.60	flat decay	030310(sp)
N/A	N/A	6123145.89	2197534.29	3.77	3.33	2.72	2.72	2.73	flat decay	030310(sp)
N/A	N/A	6123148.54	2197518.33	3.79	3.50	3.06	3.14	3.02	flat decay	030310(sp)
N/A	N/A	6123167.02	2197512.55	4.32	3.66	3.49	3.40	3.31	flat decay	030310(sp)
N/A	N/A	6122925.95	2197557.47	4.74	4.55	3.03	2.23	2.89	flat decay	030410-spft
N/A	N/A	6122932.74	2197518.39	4.83	3.15	2.53	2.44	2.64	flat decay	030410-spft
N/A	N/A	6122958.66	2197526.73	6.45	4.79	2.96	1.39	2.73	same source as 227	030410-spft
N/A	N/A	6122961.65	2197549.98	8.16	6.55	4.02	2.09	3.74	same source as 223	030410-spft
N/A	N/A	6122981.55	2197661.14	2.44	3.13	2.61	2.88	2.60	flat decay	030410-spft
N/A	N/A	6122982.08	2197666.68	4.45	3.58	2.61	2.34	2.65	flat decay	030410-spft
N/A	N/A	6122991.19	2197662.31	4.27	3.47	2.87	2.43	2.71	flat decay	030410-spft
N/A	N/A	6122992.82	2197683.05	3.81	3.23	2.97	2.97	2.88	flat decay	030410-spft
N/A	N/A	6122996.04	2197646.97	2.88	2.61	2.69	2.78	2.54	flat decay	030410-spft
N/A	N/A	6123001.07	2197633.98	3.91	3.10	2.57	2.58	2.61	flat decay	030410-spft
N/A	N/A	6123005.47	2197544.46	6.33	4.15	2.86	2.26	2.96	same source as 222	030410-spft
N/A	N/A	6123005.55	2197680.80	5.16	3.74	2.87	2.52	2.89	flat decay	030410-spft
N/A	N/A	6123007.04	2197676.29	4.92	3.65	3.04	2.69	2.96	flat decay	030410-spft
N/A	N/A	6123008.21	2197655.55	6.16	4.50	3.46	2.95	3.43	flat decay	030410-spft
N/A	N/A	6123008.91	2197704.14	4.54	3.50	2.62	2.19	2.58	flat decay	030410-spft
N/A	N/A	6123009.21	2197659.39	6.68	4.08	2.69	2.08	2.86	flat decay	030410-spft
N/A	N/A	6123009.35	2197703.50	5.09	3.59	2.89	3.06	3.09	flat decay	030410-spft
N/A	N/A	6123009.75	2197712.27	4.26	3.24	2.36	2.36	2.52	flat decay	030410-spft
N/A	N/A	6123012.54	2197708.88	4.78	4.02	3.34	3.39	3.37	flat decay	030410-spft
N/A	N/A	6123015.09	2197593.00	3.40	3.23	2.88	2.88	2.78	flat decay	030410-spft
N/A	N/A	6123015.42	2197640.46	4.73	3.99	3.37	3.37	3.36	flat decay	030410-spft
N/A	N/A	6123016.07	2197647.77	3.55	3.01	2.75	2.75	2.67	flat decay	030410-spft
N/A	N/A	6123020.02	2197620.05	1.42	2.81	3.42	3.68	2.98	flat decay	030410-spft
N/A	N/A	6123021.16	2197629.39	5.22	4.41	3.35	2.92	3.28	flat decay	030410-spft
N/A	N/A	6123021.66	2197701.41	6.04	4.37	2.97	2.08	2.91	flat decay	030410-spft
N/A	N/A	6123022.86	2197647.16	3.54	3.19	2.66	2.57	2.60	flat decay	030410-spft
N/A	N/A	6123024.75	2197676.86	3.09	3.48	3.48	3.03	3.00	flat decay	030410-spft
N/A	N/A	6123027.59	2197583.53	16.40	11.37	6.78	3.56	6.64	same source as 221	030410-spft
N/A	N/A	6123029.21	2197692.47	4.74	3.48	2.60	2.09	2.55	flat decay	030410-spft
N/A	N/A	6123029.22	2197588.28	4.35	3.72	3.03	2.34	2.76	flat decay	030410-spft
N/A	N/A	6123029.85	2197611.23	3.09	2.97	2.70	2.79	2.62	flat decay	030410-spft
N/A	N/A	6123031.89	2197606.73	6.55	6.20	5.58	6.02	5.56	flat decay	030410-spft
N/A	N/A	6123036.83	2197685.11	3.03	2.35	2.69	2.95	2.59	flat decay	030410-spft
N/A	N/A	6123037.69	2197688.28	4.24	3.98	3.38	3.04	3.17	flat decay	030410-spft
N/A	N/A	6123039.52	2197686.20	5.95	3.91	2.87	2.35	2.92	flat decay	030410-spft
N/A	N/A	6123039.63	2197610.66	4.58	3.32	2.53	2.18	2.53	flat decay	030410-spft
N/A	N/A	6123044.81	2197683.68	5.38	3.99	3.47	3.39	3.46	flat decay	030410-spft
N/A	N/A	6123064.10	2197656.32	4.66	3.44	2.82	2.65	2.83	flat decay	030410-spft
N/A	N/A	6123073.13	2197651.12	5.33	3.77	3.06	2.63	3.00	flat decay	030410-spft
N/A	N/A	6123753.63	2197740.30	6.92	4.40	2.64	1.85	2.83	flat decay	030510_sp
N/A	N/A	6123752.87	2197743.93	7.49	3.96	2.02	1.50	2.52	flat decay	030510_sp
N/A	N/A	6123755.04	2197748.34	4.86	3.93	3.41	3.32	3.36	flat decay	030510_sp
N/A	N/A	6123754.40	2197751.75	4.90	3.22	3.05	2.97	3.01	flat decay	030510_sp
N/A	N/A	6123682.97	2197766.19	7.28	4.38	2.24	1.70	2.70	flat decay	030510_sp
N/A	N/A	6123571.14	2197882.69	1.65	3.12	3.13	3.22	2.79	flat decay	030510_sp
N/A	N/A	6123676.92	2197753.41	21.22	12.30	5.71	2.21	6.44	same source as 229	030510_sp
N/A	N/A	6123676.59	2197753.95	23.70	13.69	6.30	2.80	7.31	same source as 229	030510_sp
N/A	N/A	6123677.45	2197756.09	36.06	22.50	9.86	4.49	11.55	same source as 229	030510_sp
N/A	N/A	6123666.19	2197755.35	12.24	8.34	3.41	0.90	3.78	same source as 230	030510_sp
N/A	N/A	6123596.90	2197837.88	6.65	4.93	2.51	1.58	2.74	same source as 234	030510_sp
N/A	N/A	6123692.17	2197751.97	8.93	5.49	2.99	0.91	2.90	same source as 235	030510_sp
N/A	N/A	6123597.80	2197837.97	9.66	5.67	2.84	1.36	3.15	same source as 235	030510_sp
N/A	N/A	6123629.87	2197811.39	9.33	6.34	3.49	1.79	3.57	same source as 237	030510_sp
N/A	N/A	6123589.29	2197853.02	8.52	5.85	2.93	1.00	2.94	same source as 241	030510_sp
N/A	N/A	6123756.50	2197744.08	5.31	4.65	4.12	4.31	4.11	flat decay	030510_sp
N/A	N/A	6123582.53	2197908.00	5.06	5.05	4.22	4.04	4.05	flat decay	030510_sp
N/A	N/A	6123581.36	2197910.22	1.84	3.49	3.31	3.77	3.14	flat decay	030510_sp
N/A	N/A	6123442.86	2198004.94	11.97	7.10	2.52	0.96	3.36	same source as 267	030810_sp
N/A	N/A	6123453.86	2197991.36	8.84	6.38	3.82	2.11	3.74	same asource as 269	030810_sp
N/A	N/A	6123453.91	2198017.96	8.07	6.18	3.67	1.60	3.38	same source as 268	030810_sp
N/A	N/A	6123444.134	2198003.348	24.17	12.91	4.57	1.17	6.12	duplicate - 030810-001	030810_sp2
N/A	N/A	6123454.887	2198015.832	13.35	10.16	6.20	3.09	5.80	duplicate - 030810-002	030810_sp2
N/A	N/A	6123453.858	2197991.365	8.84	6.38	3.82	2.11	3.74	duplicate - 030810-003	030810_sp2
N/A	N/A	6123420.025	2197953.864	7.94	5.28	3.92	1.73	3.34	duplicate - 030810-004	030810_sp2
N/A	N/A	6123418.076	2197977.466	8.48	5.22	2.34	1.09	2.72	duplicate - 030810-005	030810_sp2
N/A	N/A	6123469.342	2198007.586	5.17	4.38	2.92	1.63	2.63	duplicate - 030810-006	030810_sp2
N/A	N/A	6123442.863	2198004.935	11.97	7.10	2.52	0.96	3.36	same source as 339	030810_sp2

Table 5. Identified Anomalies, IRP Site 1, Adjacent Property

Anomaly Number	Anomaly Identification Within Data File	Easting	Northing	Channel 1	Channel 2	Channel 3	Channel 4	Weighted Sum	Anomaly Result/Rationale for non-inclusion	Dataset Name
N/A	N/A	6123451.417	2197957.353	6.88	5.05	3.03	1.72	2.97	same source as 340	030810_sp2
N/A	N/A	6123453.906	2198017.960	8.07	6.18	3.67	1.60	3.38	same source as 342	030810_sp2
N/A	N/A	6123472.082	2197920.362	20.15	13.52	6.53	1.63	6.49	same source as 3347	030810_sp2
N/A	N/A	6123474.726	2197914.423	15.81	11.51	6.21	2.61	6.06	same source as 347	030810_sp2
N/A	N/A	6123475.754	2197973.863	4.94	3.95	2.87	2.24	2.78	flat decay	030810_sp2
N/A	N/A	6123480.256	2197977.826	5.64	4.76	3.41	2.34	3.15	flat decay	030810_sp2
N/A	N/A	6123490.121	2197907.503	1.17	0.90	2.50	4.90	2.94	flat decay	030810_sp2
N/A	N/A	6123509.200	2197991.728	5.62	4.48	3.32	3.05	3.38	flat decay	030810_sp2
N/A	N/A	6123527.462	2197917.086	8.29	5.67	2.71	0.89	2.78	same source as 352	030810_sp2
N/A	N/A	6123564.575	2197886.626	1.69	17.30	0.00	-0.42	2.70	noise	030810_sp2
N/A	N/A	6123567.907	2197918.442	14.19	8.37	3.84	1.22	4.23	same source as 357	030810_sp2
N/A	N/A	6123322.57	2198108.17	16.91	5.08	0.93	0.65	3.03	noise; early time dominates	030910_sp
N/A	N/A	6123331.39	2198029.37	5.04	3.72	2.54	1.90	2.53	flat decay	030910_sp
N/A	N/A	6123332.40	2198113.38	3.18	2.88	2.51	2.78	2.57	flat decay	030910_sp
N/A	N/A	6123353.01	2198070.68	4.55	4.61	4.60	5.15	4.49	flat decay	030910_sp
N/A	N/A	6123353.28	2198066.70	3.73	3.48	2.84	3.30	3.02	flat decay	030910_sp
N/A	N/A	6123362.97	2198092.28	0.74	0.45	0.09	8.71	3.82	noise	030910_sp
N/A	N/A	6123371.84	2198049.02	3.76	3.08	2.98	3.17	2.94	flat decay	030910_sp
N/A	N/A	6123374.67	2198045.31	3.26	3.07	2.99	2.71	2.70	flat decay	030910_sp
N/A	N/A	6123376.91	2198003.96	5.83	3.70	2.74	2.20	2.78	flat decay	030910_sp
N/A	N/A	6123376.98	2198025.26	4.62	3.81	3.10	3.01	3.10	flat decay	030910_sp
N/A	N/A	6123380.32	2198001.93	62.64	41.35	22.15	10.09	22.63	same source as 273	030910_sp
N/A	N/A	6123381.49	2197998.09	10.59	6.28	2.92	0.71	3.09	same source as 273	030910_sp
N/A	N/A	6123389.09	2198041.81	6.83	4.86	3.19	2.04	3.11	flat decay	030910_sp
N/A	N/A	6123391.40	2198017.11	5.71	3.67	2.68	1.88	2.62	same source as 286	030910_sp
N/A	N/A	6123396.55	2198018.48	4.80	4.50	4.51	5.13	4.47	flat decay	030910_sp
N/A	N/A	6123400.39	2198018.70	3.50	3.29	2.76	2.70	2.69	flat decay	030910_sp
N/A	N/A	6123400.74	2198059.54	3.00	3.73	3.72	4.35	3.64	flat decay	030910_sp
N/A	N/A	6123412.69	2198045.22	6.68	5.17	3.13	1.61	2.95	flat in late time	030910_sp
N/A	N/A	6123427.00	2198032.36	4.15	3.37	2.84	2.57	2.74	flat decay	030910_sp
N/A	N/A	6123428.74	2198034.48	4.76	4.00	2.84	2.30	2.79	flat decay	030910_sp
N/A	N/A	6123139.09	2197759.82	-4.29	-1.49	-0.37	9.56	3.25	Spurious spike	031010_sp
N/A	N/A	6123144.85	2197762.32	-9.14	-5.72	-1.60	19.80	6.08	Spurious spike	031010_sp
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N/A	N/A	6123151.88	2197748.66	5.16	4.00	3.34	3.33	3.38	poor decay	031010_sp
N/A	N/A	6123153.28	2197745.08	4.03	2.76	2.94	2.48	2.62	poor decay	031010_sp
N/A	N/A	6123155.20	2197742.33	4.11	3.58	3.58	3.27	3.25	poor decay	031010_sp
N/A	N/A	6122755.73	2197000.15	10.25	8.85	1.14	1.15	3.20	poor decay	031510_sp
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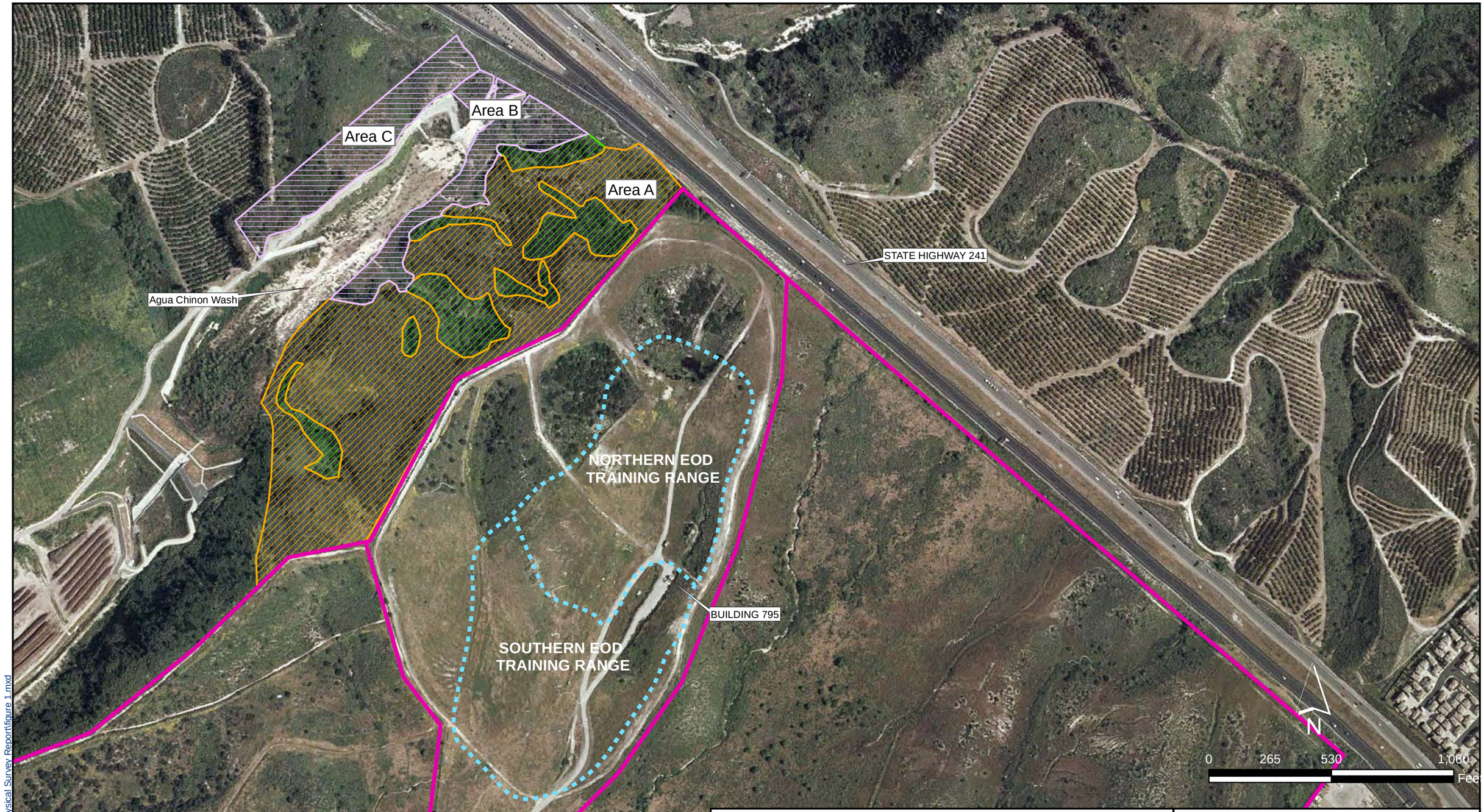
N/A	N/A	6123006.15	2197604.80	3.42	2.95	2.85	3.03	2.79	poor decay	031510_sp
N/A	N/A	6123020.36	2197641.66	4.74	4.28	3.44	3.34	3.41	poor decay	031510_sp
N/A	N/A	6123256.81	2197838.54	8.26	3.39	2.22	2.23	2.86	poor decay	031510_sp
N/A	N/A	6123426.04	2197502.57	3.01	2.78	2.68	2.64	2.52	poor decay	031510_sp
N/A	N/A	6123811.19	2198352.33	7.88	5.57	3.83	2.10	3.51	early time flat	031510_sp
N/A	N/A	6123883.47	2198358.74	3.39	3.91	4.27	4.82	4.05	poor decay	031510_sp
N/A	N/A	6123889.03	2198367.14	3.99	3.64	3.01	2.64	2.84	poor decay	031510_sp
N/A	N/A	6123944.62	2197932.05	8.97	2.33	1.89	4.02	3.44	poor decay	031510_sp
N/A	N/A	6123954.09	2198402.83	4.51	3.22	2.46	2.30	2.54	poor decay	031510_sp
N/A	N/A	6123962.54	2198337.92	3.16	3.19	2.64	2.75	2.63	poor decay	031510_sp
N/A	N/A	6124024.02	2198410.71	2.78	2.68	3.05	3.15	2.79	poor decay	031510_sp
N/A	N/A	6124072.03	2198421.75	3.73	3.08	3.00	3.74	3.18	poor decay	031510_sp
N/A	N/A	6123063.73	2196995.89	3.69	3.03	2.57	2.48	2.53	flat decay	031610_sp

Figures



LEGEND

- FORMER MCAS EL TORO AND IRP SITE 1 BOUNDARY
- EOD TRAINING RANGE BOUNDARY
- AREA A - RELATIVELY HIGH PROBABILITY AREAS DUE TO PROXIMITY TO IRP SITE 1, PLANNED TO BE GEOPHYSICALLY INVESTIGATED WITH EM-61 ELECTROMAGNETIC DETECTORS
- AREA A - AREAS WITH STEEP TERRAIN PRONE TO GRAVITATIONAL TRANSPORT; GULLY AREAS PLANNED TO BE GEOPHYSICALLY INVESTIGATED WITH DETECTOR-AIDED VISUAL METHODS TO THE MAXIMUM EXTENT PRACTICABLE
- AREAS B AND C - RELATIVELY LOW PROBABILITY AREAS, PLANNED TO BE INVESTIGATED WITH DETECTOR-AIDED VISUAL METHODS

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

Geophysical Survey Report — Final

Geophysical Survey Areas

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	1

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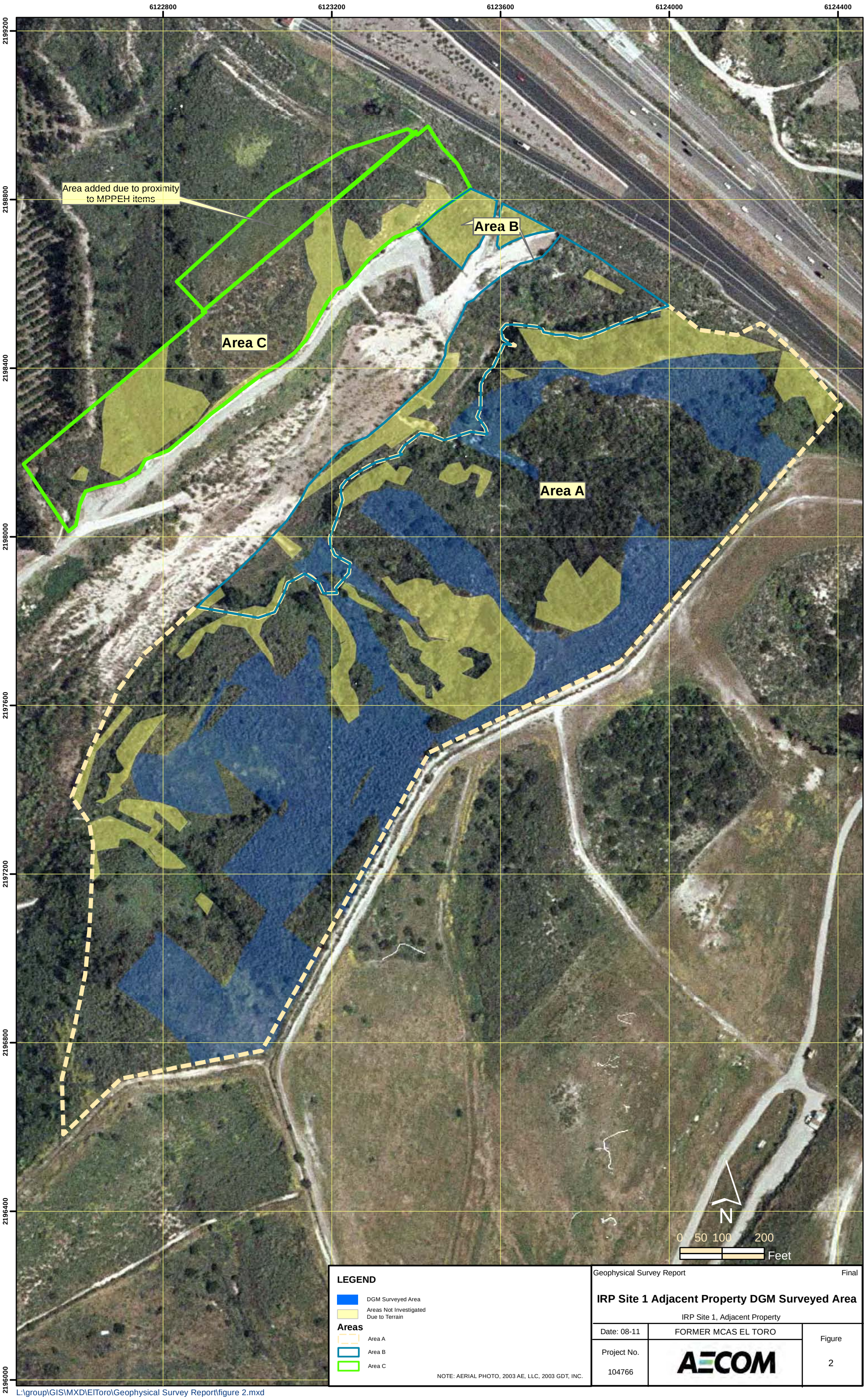

LEGEND

DGM Surveyed Area

Areas Not Investigated Due to Terrain

Areas

Area A

Area B

Area C

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

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IRP Site 1 Adjacent Property DGM Surveyed Area

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	2

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LEGEND

- DGM Surveyed Area
- Areas Not Investigated Due to Terrain
- DGM Anomaly Location

Areas

- Area A
- Area B
- Area C

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

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IRP Site 1 Adjacent Property DGM Anomaly Locations

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	3

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LEGEND

DGM Surveyed Area

Areas Not Investigated Due to Terrain

Areas

Area A

Area B

Area C

DGM Anomaly Results

Material Documented as Safe (MDAS)

Material Documented as Explosive Hazard (MDEH)

NOTE: AERIAL PHOTO, 2003 AE, LLC, 2003 GDT, INC.

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IRP Site 1 Adjacent Property Investigation Results, Area 4

IRP Site 1, Adjacent Property

Date: 08-11	FORMER MCAS EL TORO	Figure
Project No. 104766	AECOM	4

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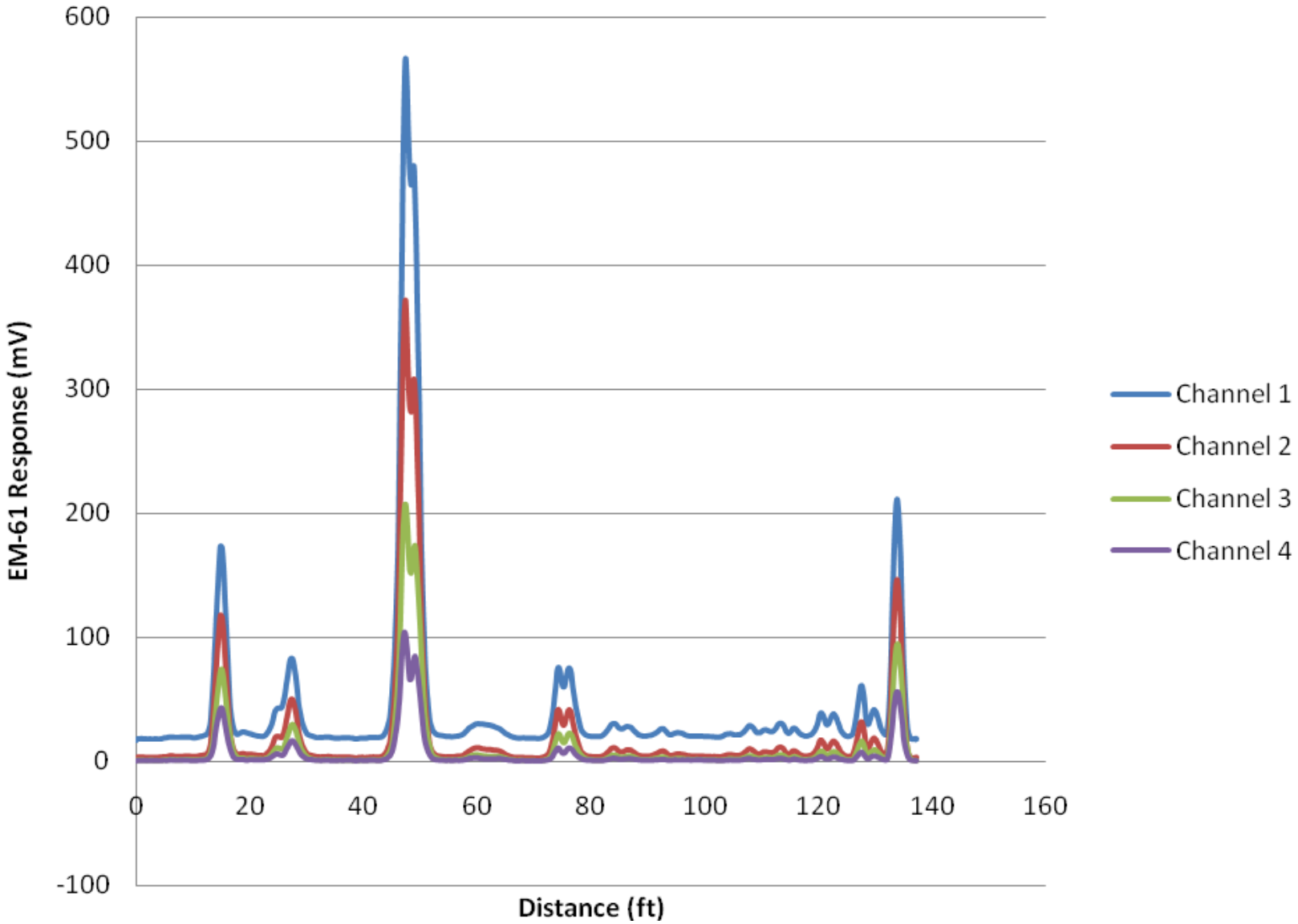
Geophysical Survey Report | Final

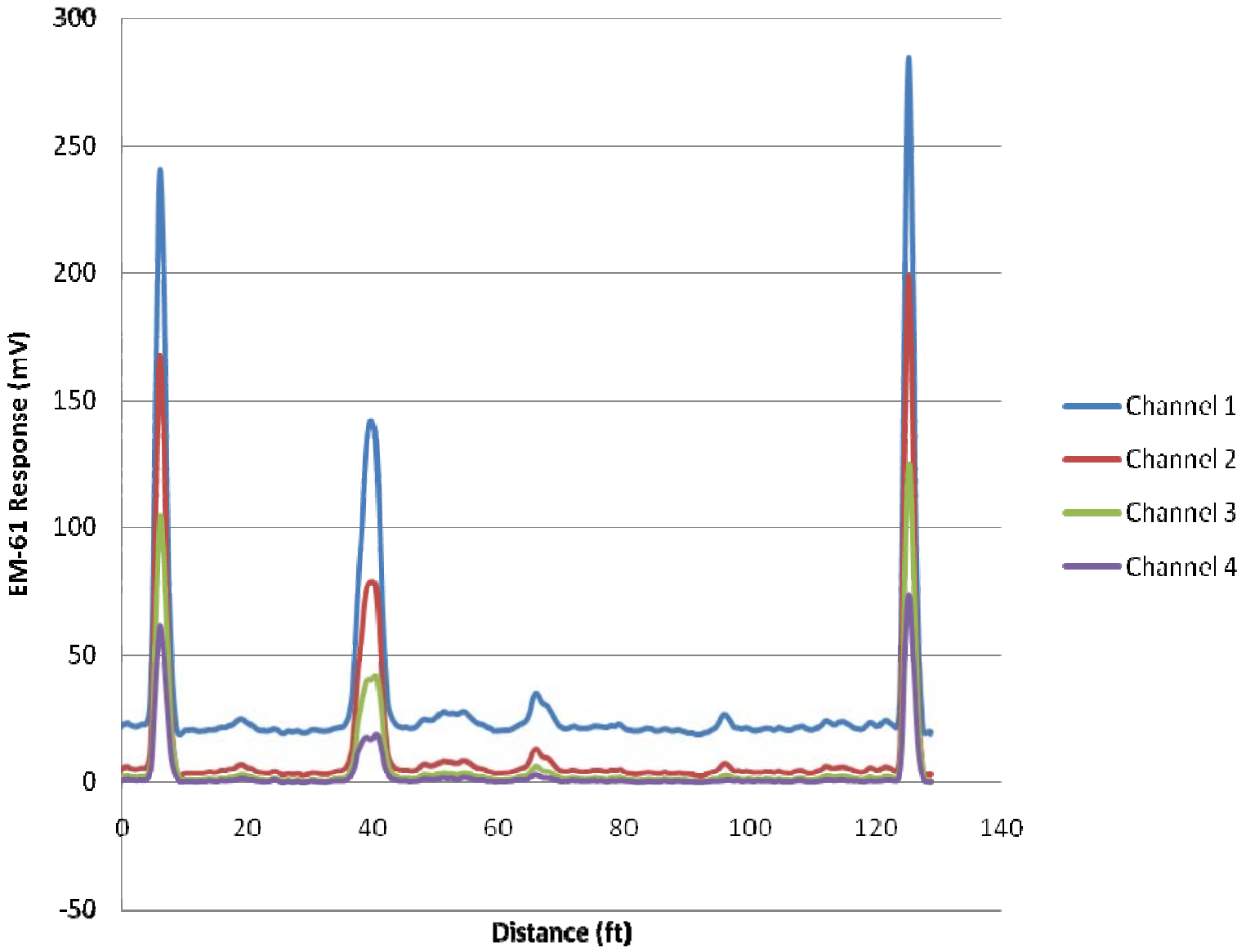
EM-61 Mk2 System as Deployed

IRP Site 1, Adjacent Property

Date: 08-11	Former MCAS El Toro	Figure 5
Project No. 104766	AECOM	



Geophysical Survey Report		Final
IVS Target Line IRP Site 1, Adjacent Property		
Date: 08-11	Former MCAS El Toro	Figure 6
Project No. 104766	AECOM	

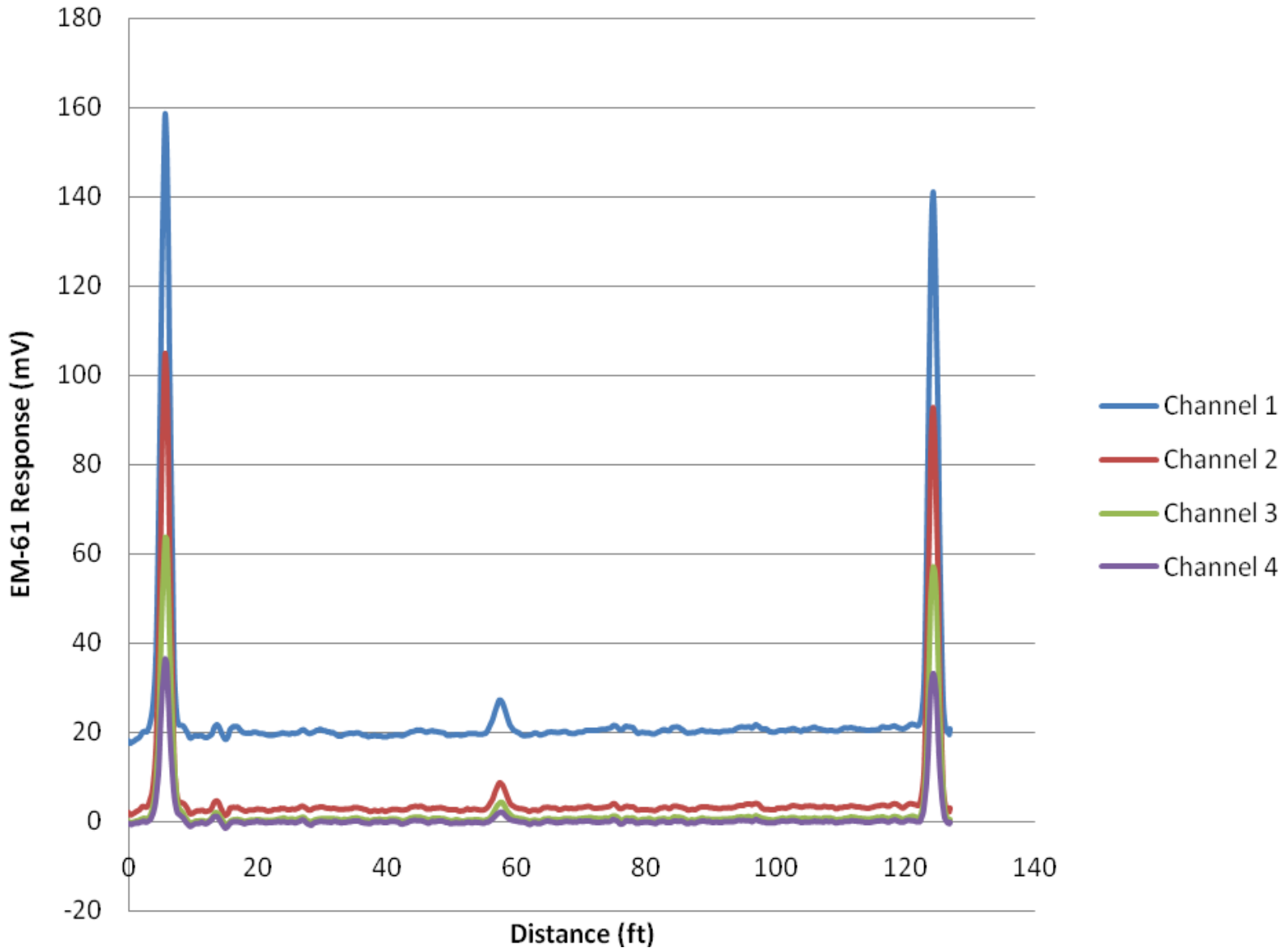


Geophysical Survey Report | Final

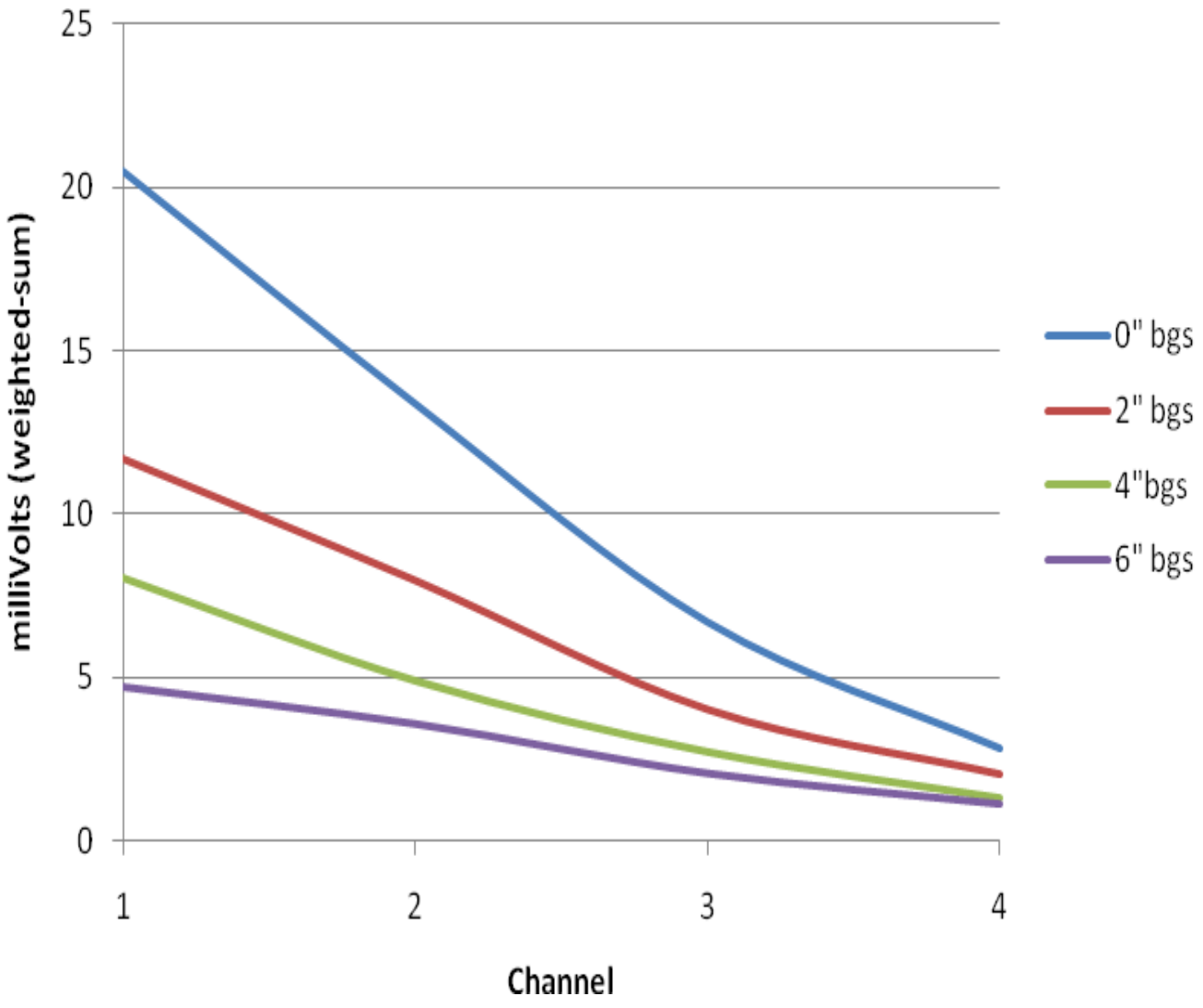
IVS 0.5-Meter Offset Response

IRP Site 1, Adjacent Property

Date: 08-11	Former MCAS El Toro	Figure 7
Project No. 104766	AECOM	



Geophysical Survey Report		Final
IVS Noise/Background Response		
IRP Site 1, Adjacent Property		
Date: 08-11	Former MCAS El Toro	Figure 8
Project No. 104766	AECOM	

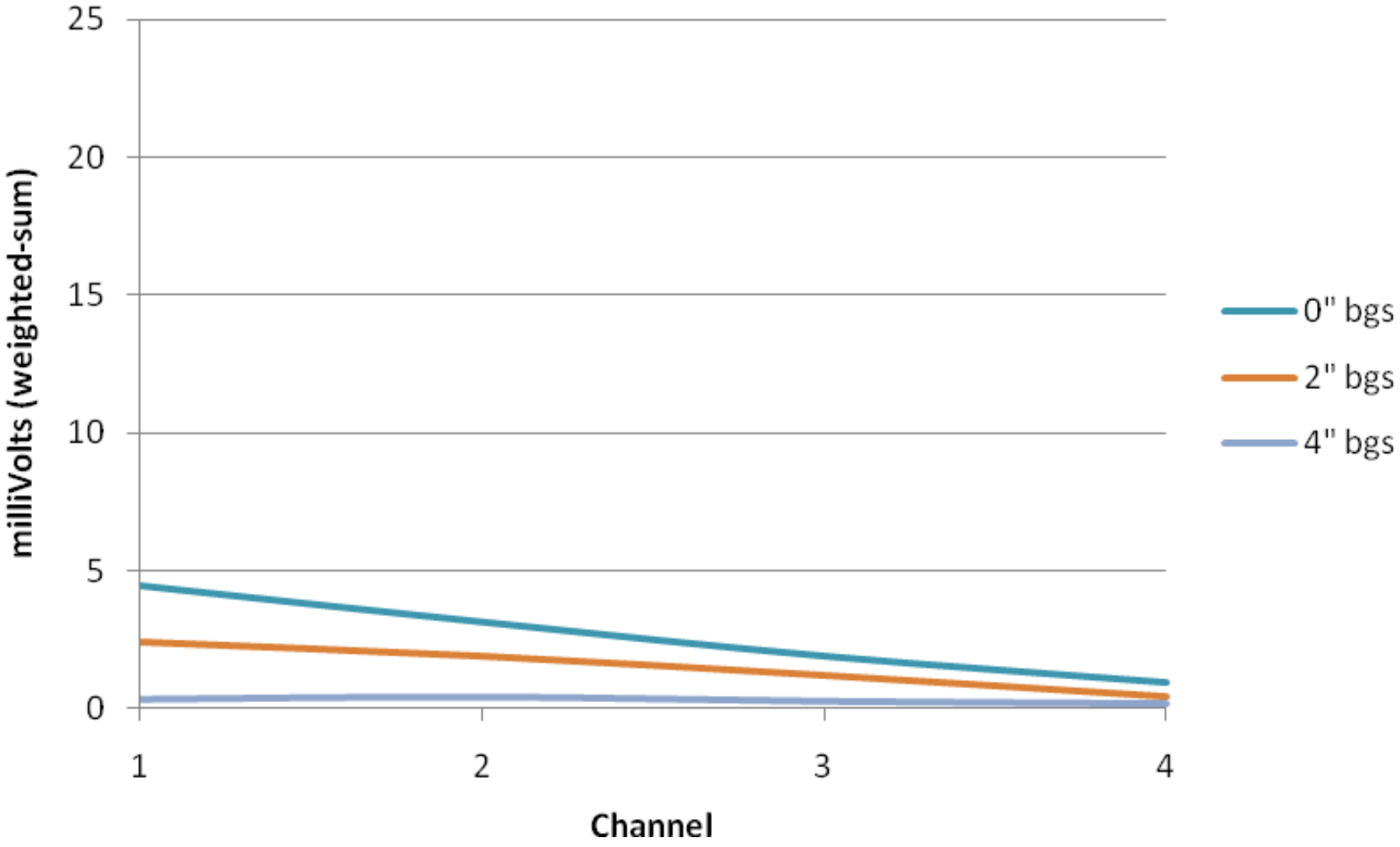


Geophysical Survey Report | Final

IVS 20 mm Response (Optimal Coupling)

IRP Site 1, Adjacent Property

Date: 08-11	Former MCAS El Toro	Figure 9
Project No. 104766	AECOM	



Geophysical Survey Report | Final

IVS 20 mm Response (Minimal Coupling)

IRP Site 1, Adjacent Property

Date: 08-11	Former MCAS El Toro	Figure 10
Project No. 104766	AECOM	

Attachment 1
Quality Control Review of Digital Geophysical Mapping Survey Processes

November 5, 2010

Project Manager
AECOM
999 Town and Country Road
Orange, CA 92868
(714) 567-2400

Re: Results of Geophysical QC Review of El Toro Marine Base DGM Data

ARM Geophysics (ARM) has prepared this memo for AECOM Incorporated to provide the general results and description of a geophysical Quality Control (QC) Review performed on the Digital Geophysical Mapping (DGM) Data from El Toro Marine Base near Santa Ana, Orange County, California. DGM data was obtained over approximately 12 acres of property adjacent to the former Explosive Ordnance Disposal (EOD) Training Range at the former base. The former EOD Training Range was used for munitions training. The survey was conducted by AECOM in early 2010.

The QC review was conducted separately from the project and consisted of inspecting any pertinent documents, procedures, and DGM data that were used during the project by AECOM. The QC Review was conducted from May through July of 2010.

Work Plan

The first step of the QC process was to read and become familiar with the AECOM Removal Action Work Plan. This was conducted by Martin Miele (PGp, PG) who is a California Professional (Registered) Geophysicist. Mr. Miele also managed and conducted the QC effort. In general, the work plan was found to be appropriate for the project and outlined the scope of work to be conducted by AECOM geophysicists. Although the Work Plan was deemed to be appropriate it did lack some detailed information regarding DGM data quality objectives (DQO's). DQO's are typically included in work plans to assure that the survey is conducted with the highest quality coverage so anomalies do not go undetected during the process. One of the most important QC objectives is to focus on and enforce the DQO's. Therefore, general assumptions were made regarding DQO's during the QC process. DQO's typical of USACE projects were assumed to be appropriate. In all, approximately 12 acres were surveyed with DGM and the data was used to produce target lists for the dig teams to excavate the target anomalies.

Target List Generation

The next step was to inspect the target list for the project. In all, 1085 anomalies were selected using the selection criteria outlined by the AECOM Senior Geophysicist. The target Munitions and Explosives of Concern (MEC) object for the El Toro Facility was the 20 millimeter (mm) projectile. Therefore, a low threshold had to be utilized due to the size of the target MEC. Twenty millimeter projectiles generally generate anomalies that are slightly above background values. They are difficult to discern from other subtle sources in DGM data. The selection threshold was 2.5 millivolts (mV) (weighted sum of four channels) for the anomalies selected by AECOM. This threshold is consistent with MEC projects where the targets are 20 mm projectiles. They are small MEC objects and, as discussed above, require a subtle threshold for detection.

Of the 1085 anomalies that were detected and selected approximately 452 were originally selected for excavation by AECOM. Anomalies were eliminated from the list based on several criteria. Anomalies were eliminated if

- They were associated with a known surface object;
- The anomaly decay was not representative of a small elongated metal object. That is the progression of values from Ch1 to Ch4 had to be approximately one-half of the value of the preceding channel (i.e, the value for Ch4 would be one-half of that for Ch3, etc.). This is approximate and depends highly on the orientation and depth of the conductor;
- The anomaly was known to be caused by the coils bouncing from the terrain (ergo bumps and turnarounds etc).

These decisions to eliminate anomalies were made by the AECOM Geophysicists. Mr Miele's original review of the target lists resulted in the opinion that there were several anomalies that were eliminated which qualified to be included on the target lists.

Review of Target Lists (95 anomalies)

At this point of the project it was communicated to Mr. Miele that a separate review was previously conducted by Brian Damiata (PGp). His review was cursory and was primarily focused on the processed data. Mr. Miele read the report resulting from this review. Mr. Damiata only touched on the methods used to process the data. However he expressed that there were additional anomalies that could be selected and were not included on the target lists. Mr. Miele concurred with Mr. Damiata as he came to the same conclusion after reviewing the anomaly list separately. Inspection of the anomalies by both reviewers resulted in a list of 95 anomalies. These additional anomalies were then included on a separate target list and were excavated.

Review of Data Processing

At this point it was requested of the AECOM Project Geophysicist to outline the general processing steps that AECOM utilized for the DGM data. The information was then furnished for QC review. It should be noted here that during the first round review of the data, things were

not consistently done from dataset to dataset during the project. Therefore, a specific and in depth review of the data was required.

The DGM data for the El Toro Marine base was processed by AECOM using two software packages. The raw data was corrected for lag and was median filtered (establish common background) by using Oasis Montaj (Geosoft) which is the industry standard software for all DGM data processing. The El Toro data was then gridded and contoured in Surfer where the anomalies were somehow picked and put onto an Excel spreadsheet. This is an unusual approach to processing data as the industry standard is to use Geosoft for all data processing. That is the software endorsed by the Army Corps of Engineers and is used on all removal action projects.

Data was processed by date, that is, each dataset was a days worth of DGM data. As discussed above, they were processed by using a weighted mean rather than by using a single channel (using channel 3 is common). A weighted mean is an industry approach to take into account all channels and has shown to be an effective way to process DGM data. It should be noted that some of the data processing methods used by AECOM were not totally common across all of the datasets. There were differences. For example, not all datasets had the same coordinate system associated with the data. Also, the weighted mean differed slightly between some of the datasets. The most common formula used was

- Weighted Sum (Wtd_sum) = (0.1023 * Ch1 Reading) + (0.156 * Ch2 Reading) + (0.25 * Ch3 Reading) + (0.4194 * Ch4 Reading)

As discussed above, AECOM established an anomaly threshold of 2.5 millivolts (mV) for picking the anomalies for possible excavation and constructing the target lists. This low threshold is appropriate since 20mm projectiles are the smallest MEC item in the project. AECOM then constructed the target lists and picked anomalies to be eliminated from the lists based on the criteria cited above.

Of the 452 anomalies that were originally chosen as targets and excavated, a false positive rate of 41% was encountered during the excavation process. A high false positive rate is common for 20 mm projectiles because the threshold (2.5 mV) is very close to background EM values. A simple bounce of the EM coils can generate an anomaly of that magnitude. However, 41% is a high false positive rate.

ARM Processing of Data

ARM Geophysics (ARM) obtained all of the raw datasets and processed the data in Oasis Montaj since it is the industry standard process. Each of the datasets was lag corrected and median filtered first. They were then gridded and maps were generated for each dataset. The maps were generated by using the same weighted mean for each dataset rather than using a single channel. A similar weighted mean to the one used by AECOM was used by ARM. The same threshold (2.5 mV) was used to select anomalies for each data set. Anomalies were merged if they were very close to each other. This is due to a given anomaly that may have 2 peaks but is truly the

same anomaly. One dataset was not processed by ARM. ARM resolved 722 anomalies after merging anomalies and without the missing dataset.

During the processing of the AECOM data it was noted that there was an apparent across track sampling issue. The issue was likely not addressed by AECOM since DQO's were not specifically addressed in the Work Plan. Across track sampling is the lateral distance between each EM61 Mk2 traverse. Typically surveys are designed to have some overlap to assure that all of the field area is covered and to maximize the potential for the detection of all items. There appears to be some data gaps between some of the EM61 Mk2 traverses. They became observable after processing the data in Geosoft. The outcome would be that some items may not be detected if they are located in areas with a data gap. If the terrain is moderately steep and hummocky, the data gaps may be apparent and may be caused by a "leaning" GPS antenna.

Figure 1 is a map of the anomaly selections made by ARM and AECOM superimposed upon each other. In general, there is a good correlation regarding anomaly location where both ARM and AECOM anomalies exist. The great majority of anomalies are co-picked by ARM and AECOM. However, at several locations there are multiple AECOM anomalies where there is one ARM anomaly selection. This may be due to the inability of Surfer to merge multiple peaked anomalies. In addition, there are a large number of AECOM anomaly selections where there is no ARM anomaly selection. This may be due to the difference between Surfer and Oasis Montaj regarding the algorithms used to generate anomalies. There are very few anomalies selected by ARM that are not selected by AECOM. This may also be due to the same reason.

Figure 2 is essentially Figure 1 with the no finds (false positive locations) superimposed on the map. The majority of the no finds occur in areas on the periphery of the site (field area boundary) or in areas where the terrain may have been difficult. That may be the reason for the high no find percentage. Some of the anomalies (no find) may also be due to the difference between Surfer and Oasis Montaj regarding the algorithms used to generate anomalies.

Respectfully submitted,

Martin Miele PGp, PG
California Professional Geophysicist
GP-941

Site Coverage Map

EM Geophysical Survey

GPS Positioned Single Coil EM61

El Toro Marine Corps Air Station

El Toro, CA

Legend

25	Anomaly Number
+	Interpreted Anomaly - ARM (722)
△	Interpreted Anomaly - AECOM (1082)
▭	Area of missing data

EM61 Weighted Sum

mV

0.5 2.1 3.6 5.1 6.7 8.2 9.7 11.3 13.3 15.4 17.4 19.5

Scale 1:2000

100 0 100 200 300

US survey foot

NAD83 / California CS83 zone 6

CLIENT:	**AECOM**		
PROJECT:	**UXO, El Toro, CA**		
CONTRACTOR:	**ARM Geophysics**		
Created By:	JW	Verified By:	
Date:	May-20-2010	File:	Merged Databases
Coordinate System:	NAD83, California State Plane, Zone 6, feet		

AECOM

ARM GEOPHYSICS Surface & Borehole Services

Site Coverage Map

EM Geophysical Survey

GPS Positioned Single Coil EM61

El Toro Marine Corps Air Station

El Toro, CA

Legend

25	Anomaly Number
+	Interpreted Anomaly - ARM (722)
△	Interpreted Anomaly - AECOM (1082)
▭	Area of missing data
0	No Finds (w/ target-id)

EM61 Weighted Sum

mV

0.5 2.1 3.6 5.1 6.7 8.2 9.7 11.3 13.3 15.4 17.4 19.5

Scale 1:2000

100 0 100 200 300

US survey foot

NAD83 / California CS83 zone 6

CLIENT:	**AECOM**
PROJECT:	**UXO, El Toro, CA**
CONTRACTOR:	**ARM Geophysics**
Created By: JW	Verified By:
Date: May-20-2010	File: Merged Databases
Coordinate System:	NAD83, California State Plane, Zone 6, feet

AECOM

ARM GEOPHYSICS Surface & Borehole Services

Appendix E
Demolition Notification Forms and Certificates of Destruction

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NAVFAC SW Navy Notification for Demo Operation
Site 1 - former EOD Range, MCAS El Toro (Contract Number: N62742-03-D-1837 CTO 32)

Prepared by Chris Cavers **Date/Time** 3/22/10 - 0900 **Tel:** 562-824-9795

Personnel On Site		
Frank Hack, SUXOS	Chris Cavers, SSO/PM	James Fisher, UXOTII
Terry Phelps, Blaster	Richard Fisher, UXOTIII	Jed Scott, UXOTII

MPPEH Item Description

Date/Time Encountered	N/A (consolidation shot at completion of project)
Date/Time Identified as Unsafe-To-Move	N/A
Location (Coordinates/Description of Area and Security Measures)	IRP Site 1 consolidation shot detonation location
Condition (buried, partially buried, exposed)	N/A
Type of Munition (rocket, grenade, projectile)	See attached list (m103 bomb fuze, 40 mm projectile x 2, nose fuze x 3, nail gun cartridges, and 20 mm projectiles x106)
Estimated size of Munition (length, width, height)	See above
Distinctive features of Munition (shape, color, markings)	See above

Proposed Blow-In-Place or Consolidation Shot Schedule

Date/Time of BIP or Consolidation Shot	23 March 2010, 1000 hours
Engineering Controls Information	Buried Explosion Module per approval letter from MARCORSYSCOM dated 16 March 2010
Exclusion Zone Information	200 feet for essential personnel
Explosives Quantity/Type Required	½-pound boosters x 30

Required Notifications by ATS

Individual/Organization Notified	Notifier Name	Signature	Date/Time/Mode of Notifica
Scott Kehe//NAVFAC-SW-FEAD (562-572-5876)	Chris Cavers	Chris Cavers	3/22 0845 phone
Content Arnold/Lead RPM (619-532-0790)	Chris Cavers	Chris Cavers	3/22 0905 phone
Randy Sterett/OC Sheriff's Bomb Squad (714-538-2694) Alt.	Chris Cavers	Chris Cavers	3/22 0910 phone
Jennifer Bower/OC Fire Authority (Fire Marshall's Office) (Tel:714-573-6252)	N/A (OCSO Bomb Squ notify)		
Tom Brown/FBI/FAA (Tel: 714-538-1864)	Content Arnold		
LT. Henry Boggs/Irvine Police (949-254-1669 Alt. CDR Mike Hamel (949.795.9406)	Chris Cavers	Chris Cavers	3/22 0850 phone
TIC Security (949-533-9870 or 949-922-7264) TVI 949-856-6424	Content Arnold		

NAVFAC-SW Review and Acknowledgement (Fax to ATS, Attn: C. Wanyoike at 714-689-7351)

Proceed ☐ Proceed with noted comments* ☐ Hold – Provide additional info ☐

*Comments/Remarks

BCT/Stakeholder Notification

DTSC ☐ EPA Region IX ☐ RWQCB ☐ TIC ☐ OCFCD ☐ ☐ ☐

Name/Designation:_____ Signature:_____ Date/Time:_____

AECOM

MDEH \ MPPEH

AECOM ORDNANCE ACCOUNTABILITY LOG

Project Site: FmCAS EL Toro CA Contract #: 62742-03-D-1837 Log Page: 1 of

Date (m/d/y)	Qty/ Unit	Descriptive Nomenclature[1]	Fuze Type and Condition[2]	Location[3]	Depth	Disposition[4]	Verified By[5]	Photo Y/N
2/10/10	2ea	20mm TP	MDEH \ MPPEH	0435862-5727968 0435911 3722924	S		JH	1
2/10/10	1	M103 (163) bomb Fuze	MDEH \ MPPEH	20 4.35917 3728291	1'		JH	2
2/12/10	1	40mm AA Round Rojo	MDEH \ MPPEH	0435870 3728057	S		JH	3
2/12/10	1	20mm TP	MDEH \ MPPEH	0435888 3728045	S		JH	4
2-23-10	4	20mm TP	MDEH \ MPPEH	Area B	S		JH	5
2-23-10	3	20mm TP	MDEH \ MPPEH	Area A	S		JH	6
2-23-10	4	20mm TP	MDEH \ MPPEH	Area A	S		JH	7
2-23-10	1	20mm TP	MDEH \ MPPEH	Area C	S		JH	8
2-23-10	1	20mm TP	MDEH \ MPPEH	Area A	1'+		JH	9
25/2/10	4ea	20mm	MDEH MPPEH	Area B	1'+		JH	10
25/2/10	12ea	20mm	MDEH \ MPPEH	Area A	1'+		JH	11
25/2/10	1	20mm	MDEH \ MPPEH	Range	1'+		JH	12
25/2/10	9	20mm	MDEH \ MPPEH	Area A	1'+		JH	13
25/2/10	1	20mm	MDEH \ MPPEH	Area A	1'+		JH	14
26/2/10	5	20mm	MDEH \ MPPEH	Area	1'+		JH	15
26/2/10	1	20mm	MDEH \ MPPEH	Range	1'+		JH	16
26-2/10	3	20mm	MDEH \ MPPEH	Area B	1'+		JH	17

1 Description, with MK numbers, M number and Mods as applicable.

2 Use M number, MK numbers and Mods as applicable, UNK = "Unknown"; None or N/A = "No fuzing present."

3 Include: Area Sub-area designation or map reference.

4 Enter Heading(s) and Date. Headings: DST = "Destroyed," MAG = "Magazine Holding Area," EOD = "Turned over to local EOD for disposal," DRMO = "Scrap turned into Defense Reutilization," BIP = "Blown-in-place."

5 Initials – Site Supervisor/Sr. UXO Supervisor to verify Recovery/Disposal.

Office Copy

MPPEH \ MDEH

AECOM ORDNANCE ACCOUNTABILITY LOG

Project Site: FmCAS EL TORO CA Contract #: 62742-03-D-1837 Log Page: 2 of

Date (m/d/y)	Qty/ Unit	Descriptive Nomenclature[1]	Fuze Type and Condition[2]	Location[3]	Depth	Disposition[4]	Verified By[5]	Photo Y/N
1MAR		20 mm	MDEH MPPEH	Area A	S		FH	18
1MAR	2	20 mm	MDEH	Area B			FH	19
1MAR	2	Nose Fuze	MPPEH/MDEH	Area A			FH	20
3MAR	1	40 mm Projo	MPPEH/MDEH	Area A			FH	21
3 MAR	9	20mm Projo	MPPEH\MDEH	Area A			FH	22
4MAR	2	20 mm Projo	MPPEH\MDEH	Area B			FH	23
5MAR	1	Fuze Nose	MPPEH\MDEH	Area A	S		FH	24
5MAR	2	20mm Projo	MPPEH\MDEH	Area A			FH	25
5MAR	1	20 mm Projo	MPPEH\MDEH	Area			FH	26
7MAR	4	20mm Projo	MPPEH\MDEH	Area A			FH	27
12MAR	2	20mm Projo	MPPEH MDEH	Area A			FH	28
15MAR	1	2 round Nail Gun Ammo	MPPEH\MDEH	Area A			FH	29
15MAR	1	20mm Projo	" "	Area A			FH	30
16MAR	1	20mm Projo	MPPEH\MDEH	Area A			FH	31
16MAR	1	20mm Projo	" "	" "			FH	32
16MAR	5	20mm Projo	" "	" "			FH	33
16MAR	1	20 mm Projo	" "	" "			FH	34

1 Description, with MK numbers, M number and Mods as applicable.

2 Use M number, MK numbers and Mods as applicable, UNK = "Unknown"; None or N/A = "No fuzing present."

3 Include: Area Sub-area designation or map reference.

4 Enter Heading(s) and Date. Headings: DST = "Destroyed," MAG = "Magazine Holding Area," EOD = "Turned over to local EOD for disposal," DRMO = "Scrap turned into Defense Reutilization," BIP = "Blown-in-place."

5 Initials – Site Supervisor/Sr. UXO Supervisor to verify Recovery/Disposal.

MPPEK\ MDEH

AECOM ORDNANCE ACCOUNTABILITY LOG

Project Site: FMCAS El Toro CA Contract #: L2742-03-D-1837 Log Page: 3

Date (m/d/y)	Qty/ Unit	Descriptive Nomenclature[1]	Fuze Type and Condition[2]	Location[3]	Depth	Disposition[4]	Verified By[5]	Photo Y/N
18 MAY	4	20 mm MDEH	NA	Area A				35
18 MAY	8	20 mm MDEA	NA	Area A				36
18 MAY	1	20 mm MDEH	NA	Area A				37

1 Description, with MK numbers, M number and Mods as applicable.

2 Use M number, MK numbers and Mods as applicable, UNK = "Unknown"; None or N/A = "No fuzing present."

3 Include: Area Sub-area designation or map reference.

4 Enter Heading(s) and Date. Headings: DST = "Destroyed," MAG = "Magazine Holding Area," EOD = "Turned over to local EOD for disposal," DRMO = "Scrap turned into Defense Reutilization," BIP = "Blown-in-place."

5 Initials – Site Supervisor/Sr. UXO Supervisor to verify Recovery/Disposal.

NAVFAC SW Navy Notification for Demo Operation
Site 1 - former EOD Range, MCAS El Toro (Contract Number: N62742-03-D-1837 CTO 32)

Prepared by Chris Cavers **Date/Time** 6/8/2010 - 1530 **Tel:** 562-824-9795

Personnel On Site		
Frank Hack, SUXOS	Chris Cavers, SSO/PM	Ron Vanderford, UXOQCS
Earl Dennis, Blaster	Scotty Cook, UXOTII	Dean Houseknect, UXOTII

MPPEH Item Description

Date/Time Encountered	N/A (consolidation shot at completion of project)
Date/Time Identified as Unsafe-To-Move	N/A
Location (Coordinates/Description of Area and Security Measures)	IRP Site 1 consolidation shot detonation location
Condition (buried, partially buried, exposed)	N/A
Type of Munition (rocket, grenade, projectile)	20 mm Projectile x 47
Estimated size of Munition (length, width, height)	See above
Distinctive features of Munition (shape, color, markings)	See above

Proposed Blow-In-Place or Consolidation Shot Schedule

Date/Time of BIP or Consolidation Shot	9 June 2010, 1000 hours & 1100 hours
Engineering Controls Information	Buried Explosion Module per approval letter from MARCORSYSCOM dated 16 March 2010
Exclusion Zone Information	200 feet for essential personnel
Explosives Quantity/Type Required	½-pound boosters x 20

Required Notifications by ATS

Individual/Organization Notified	Notifier Name	Signature	Date/Time/Mode of Notifica
Scott Kehe//NAVFAC-SW-FEAD (562-572-5876)	Chris Cavers	[signature]	6/7/10 1200 Email
Jackie Dunn/RPM (619-532-0943)	Chris Cavers	[signature]	6/8/10 1520 Telephone
Randy Sterett/OC Sheriff's Bomb Squad (714-538-2694) Alt. Investigator Domingues 714-912-1711	Chris Cavers	[signature]	6/8/10 1510 Telephone
Jennifer Bower/OC Fire Authority (Fire Marshall's Office) (Tel:714-573-6252)	N/A (OCSO Bomb Squ notify)	N/A	N/A
Tom Brown/FBI/FAA (Tel: 714-538-1864)	Jackie Dunn	[signature] for Jackie Dunn	6/8/10 1540 Telephone
LT. Henry Boggs/Irvine Police (949-254-1669 Alt. CDR Mike Hamel (949.795.9406)	Chris Cavers	[signature]	6/8/10 1505 Voicemail
TIC Security (949-533-9870 or 949-922-7264) TVI 949-856-6424	~~Jackie Dunn~~ Jim Callian	[signature] for Jim Callian	6/8/10 1540 Telephone

NAVFAC-SW Review and Acknowledgement (Fax to ATS, Attn: C. Wanyoike at 714-689-7351)

Proceed ☒ Proceed with noted comments* ☐ Hold – Provide additional info ☐

*Comments/Remarks

BCT/Stakeholder Notification

DTSC ☐ EPA Region IX ☐ RWQCB ☐ TIC ☐ OCFCD ☐ ☐ ☐

Name/Designation: Signature: Date/Time:

AECOM

TIMBERLINE Environmental Services

Certificate of Destruction

Releasing Generator AE Com, El Toro

Gross Weight 368 lbs

[I certify that the items/assets listed were demilitarized in accordance with guidelines in DoD 4160.21-M-1 and have been smelted or shredded and are only identifiable by their basic content.]

COD # 32410 ***Date*** 4/1/10

Name Terry Northcutt ***Title*** CEO

Signature

DEMILITARIZATION CHAIN OF CUSTODY CERTIFICATION FOR UXO/OE SCRAP

Date: 3/23/2010

1. Releasing Generators (RG) Name and Mailing Address AECOM	1a. RG's Phone No. 562-824-9795	2. RG's Site Manager Chris Cavers
3. Releasing Generators (RG) Project Name and Location El Toro Irvine Blvd and Magazine Road, Irvine, CA	3a. RG Project Phone No.	4. RG's SUXOS
5. Transportation Company Timberline Environmental Services	5a. Transporter Phone No. 209-304-6081	6. Transporter Name Mike Harper
7. Demil Processor Timberline Environmental Services 29925 Highway 108, Cold Springs, CA 95335	7a. Demil Processor Phone No. 209-965-3118	8. Demil Processor Manager Terry Northcutt

9. # Of Containers	10. Seal No.'s	11. Estimated Weight	11a. Actual Weight
2		100 lbs	368 lbs

12. Freight Classification Nomenclature	13. Item Nomenclature
Ordnance Related Scrap	

14. Material Released to the Transporter By RG's Site Manager

"This certifies that the material listed here has been 100% properly inspected and to the best of my knowledge and belief is free of explosive hazards."

Print/Type Name	Signature	Time and Date
	[illegible]	3-24-2010

15. Received for Transport By (Receiving Signature Verifies that Seals are Intact)

Print/Type Name	Signature	Time and Date
Mike Harper	[illegible]	3-24-10

16. TES Site Manager: I ACKNOWLEDGE THE RECEIPT OF MATERIAL (Receiving Signature Verifies that Seals are Intact)

RECEIVED BY:	# of Containers/Weight	Date
[illegible]	2 368 lbs	3/24/10

17. Material Demilitarized

"I certify that the materials listed here have been demilitarized/destroyed so as to no longer resemble AEDA/ordnance beyond DOD requirements 4160.21.M.1"

Processed By: Print/Type Name	Signature	Date
Terry Northcutt	[illegible]	4/1/10

18. Material Recycled in Accordance with DOD Guidelines

Shipped By: Print/Type Name	Recycling Facility	Date

19. Documents sent to RG

Print/Type Name	Documents	Month/Day/Year
		___/___/___

20. Discrepancies

8-12-04 Rev 1

DD FORM 1348-1A, JUL 91 ISSUE RELEASE/RECEIPT DOCUMENT

1–7 DOCUMENT	8–9 IDENT	10–14 RI FROM	15–17 M&S	18–22 UNIT	23–29 ISS QUANTITY	30 SER	31–45 SUPPLEMENTARY ADDRESS	46–47 SIG	48–52 FUND	53–54 DISTRIBUTION	55–58 PROJECT	59 PRI	60–61 REQD	62–63 DELD	64 DATE	65–66 ADV	67–68 RI	69 OP	70 CONDITION	71–73 MGT

74–80 UNIT PRICE		1. TOTAL PRICE	2. SHIP FROM	3. SHIP TO
DOLLARS	CTS	DOLLARS / CTS	Former MCAS El Toro, IRP Site 1	
			4. MARK FOR	

5. DOC DATE	6. NMFC	7. FRT RATE	8. TYPE CARGO	9. PS

10. QTY REC'D	11. UP	12. UNIT WEIGHT	13. UNIT CUBE	14. UFC	15. SL

16. FREIGHT CLASSIFICATION NOMENCLATURE

17. ITEM NOMENCLATURE

18. TY CONT	19. NO CONT	20. TOTAL WEIGHT	21. TOTAL CUBE
		87.5	

22. RECEIVED BY	23. DATE RECEIVED
	24-Mar-10

24 DOCUMENT NUMBER & SUFFIX (26-44)

25. NATIONAL STOCK NO. & ADD (8-22)

26. REC (4-8) U (23-24) QTY (25-29) CONT CODE (71) DIST (55-58) UP (74-80)

27 ADDITIONAL DATA

This certifies that the material potentially presenting an explosives hazard listed has been 100% properly inspected and to the best of our knowledge and belief, is inert and/or free of explosives or related materials.

Certified by: Frank Hack — Signature — 24 Mar 2010
Name — Signature — Date

Verified by: Ron Vaderford — William R. Vanderford — 24 Mar 2010
Name — Signature — Date

MDAS List

ITEM	Numbers	Weight
M 118 Prac	12 ea	15 lbs
Frag		35 lbs
Jato Venturi	1ea	11 lbs
Tail Fuze/FLT control arm	1 ea	4 lbs
Rocket noze cone/control arm	1 ea	6 lbs
Small Arms assorted shot gun shells		12 lbs
brass & rifle brass		
40mm AA round empty		1 lbs
noze fuze PTTF spent	1 ea	. 5 lbs
75mm base plate	1 ea	3 lbs
		87.5 total

MDAS Tracking Log

	Date	Item	Team	Picture	Grid	Anomaly	Weight	Signature
1	2/10/10	M118 (2ea)	2	yes	100 111	0436223 3728169	½	[illegible]
2	2/10/10	M105 Frag	2	yes	100	0436223 3728169	2	[illegible]
[redacted]								
4	2/10/10	SMALL ARMS (21)	1	YES	CHARLIE		.2	[illegible]
5	2/11/2010	Small ARMS	2	5	" 4		.25	[illegible]
6	2/12/2010	Small ARMS	2	6	0435881 140141		.1	[illegible]
7	2/12/2010	Small ARMS	1	7	191 192 118 187	0435877 3728273	.1	[illegible]
[redacted]								
	23/2/2010	FRAG A.	1	9	AREA A		.1	[illegible]
	23/2/2010	Frag 10 P.	2	10	AREA B		.1	[illegible]
	23/2/2010	Frag 1 P	1	11	AREA C		.1	[illegible]
	23/2/2010	Small ARMS	1 / 2	12	Area ABC		6 lbs	[illegible]
	25/2/2010	Fuze Frag	2	13	Area A/B		2 lbs	[illegible]
	25/2/2010	M118 Preac	2	14	" "		3 lbs	[illegible]
[redacted]								
	25/2/2010	~~105~~ 75 Frag. 2ea	2	16	" "		4 lbs	[illegible]
	25/2/2010	Fuze Nose leg. Tip	2	17	" "		1 lbs	[illegible]
[redacted]								
	25/2/2010	M118 Preac	1	19	" "		.5	[illegible]
	25/2/2010	Nose Fuze Frag	1	20	" "		.1	[illegible]
	25/2/2010	Small ARMS	1 / 2	21	AB		[illegible]	[illegible]
[redacted]								

0435412
3727553

MDAS Tracking Log

Date	Item	Team	Picture	Grid	Anomaly	Weight	Signature
25-Feb 10	M 118 Pract	Team 2	24	Area			7H
25-Feb 10	Trail Fuze	Team 2	25	" "			7H
25 Feb 10	Frag	Team 2	26	" "			7H
25 Feb 10	Trail Fuze	Team 2	27	Team 1			7H
26 Feb 10	M118 3 ea	Team	28	Team A			7H
[redacted]							
[redacted]							
26 Feb 10	Frag 5 ea	" "	31	" "			7H
26 Feb 10	Frag 7 ea	Team 1	32	" "			7H
1 MAR 10	SMALL ARMS	Team 12	33	" "			7H
1 MAR 10	Frag	Team 1 & 2	34	Area A			7H
[redacted]							
2 MAR 10	Frag	Team 1	36	Area B			7H
3 MAR 10	5" Rocket JATO	Team 1	37	Area B	1		7H
3 MAR 10	Frag	Team 1	38	" "	.25		7H.
[redacted]							
[redacted]							
3 MAR 10	Small Arms	Team 1	41	Area B	.1		7H
4 MAR 10	Frag	Team 1	42	Area B	4.		7H
4 MAR 10	Small Arms	Team 1	43	Area B	.5		7H
5 MAR 10	Frag	Team 2	44	Area A	.5		7H
5 MAR 10	Small Arms	Team 1	45	Area A-B	.		7H
[redacted]							

MDAS Tracking Log

Date	Item	Team	Picture	Grid	Anomaly	Weight	Signature
[redacted]							
[redacted]							
9 MAR	~~Small Arms~~ Rocket	Team 2	49	Area A			7H
9 MAR	Small Arms	" "	50	Area A			7H
9 MAR	Frag	" "	51	Area A			7H
[redacted]							
11 MAR	Small Arms	" "	53	Area A			7H
12 MAR	Frag	" "	54	Area A			7H
12 MAR	Small Arm	" "	55	Area A			7H
15 MAR	Frag	Team 1	56	Area A			7H
[redacted]							
15 MAR	M117 Proc	Team 2	58	Area A			7H
15 MAR	Frag	Team 2	59	Area A			7H
15 MAR	Small Arms	1 / 2	60	A / B			7H
[redacted]							
16 MAR	Frag	Team 2	62	" "			7H
16 MAR	Frag	Team 1	63	" "			7H
16 MAR	Small Arms	1 / 2	64	Area A			7H
16 MAR	Frag		65	" "			7H
[redacted]							
18 MAR	Frag	1	67	Area A		5165	7H
[redacted]							
18 MAR	Small Arms		69	Area A			7H

TIMBERLINE Environmental Services

Certificate of Destruction

Releasing Generator AECOM/El Toro

Gross Weight 26 lbs

[I certify that the items/assets listed were demilitarized in accordance with guidelines in DoD 4160.21-M-1 and have been smelted or shredded and are only identifiable by their basic content.]

COD # 61010 ***Date*** 6/18/10

Name Terry Northcutt ***Title*** COO

Signature

TES Inc. 29925 Hwy 108, Cold Springs, CA 95335 209-965-3118 caoffice@timberlineenvsv.com

Appendix F
Quality Control Documentation

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First Phase TCRA 3-Phase Quality Control Reports

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Quality Control Report Log for El Toro First Phase TCRA

1. Mobilization Prep (Jan. 31, 2009)
2. Mobilization Initial (Feb. 01, 2009)
3. Site Preparation Prep (Feb. 01, 2010)
4. Site Preparation Initial (Feb. 01, 2010)
5. Vegetation Trimming Prep (Feb. 02, 2010)
6. Vegetation Trimming Initial (Feb. 02, 2010)
7. Vegetation Trimming FU (Feb. 03, 2010)
8. Site Survey Prep (Feb. 04, 2010)
9. Site Survey Initial (Feb. 04, 2010)
10. Vegetation Trimming FU (Feb. 04, 2010)

11A. Intrusive Prep (Feb. 5, 2010) TM 1 – Mag & Flag

11B. Site Survey FU (Feb. 05, 2010)

12. Vegetation Trimming FU (Feb. 05, 2010)
13. Site Survey FU (Feb. 08, 2010)
14. Vegetation Trimming FU (Feb. 08, 2010)
15. Intrusive Initial (Feb. 9, 2010) TM 1
16. Surface Clearance Prep (Feb. 09, 2010)
17. Vegetation Trimming FU (Feb. 09, 2010)
18. Intrusive FU (Feb. 10, 2010) TM 1
19. Vegetation Trimming FU (Feb. 10, 2010)
20. MPPEH Processing Prep (Feb. 10, 2010) TM 1 & 2
21. MPPEH Processing Initial (Feb. 10, 2010) TM 1 & 2
22. MPPEH Processing FU (Feb. 10, 2010) TM 1 & 2
23. Vegetation Trimming FU (Feb. 11, 2010)
24. Intrusive FU (Feb. 11, 2010) TM 1
25. Intrusive FU (Feb. 12, 2010) TM 1
26. MPPEH Processing FU (Feb. 12, 2010) TM 1
27. Vegetation Trimming FU (Feb. 12, 2010)
28. Intrusive Prep (Feb. 17, 2010) TM 2 - Reacquisition
29. Intrusive Initial (Feb. 17, 2010) TM 2 – Reacquisition
30. Intrusive Follow-Up (Feb. 18, 2010) TM 2 – Mag & Flag
31. Intrusive Follow-Up (Feb. 19, 2010) TM 2 – Mag & Flag
32. Intrusive Follow-Up (Feb. 22, 2010) TM 1 – Mag & Flag
33. Intrusive Follow-Up (Feb. 23, 2010) TM 2 – Mag & Flag
34. Intrusive Follow-Up (Feb. 24, 2010) TM 2 – Mag & Flag
35. MPPEH Processing FU (Feb. 25, 2010) TM 2
36. Intrusive Follow-Up (Feb. 26, 2010) TM 2 – Mag & Flag, Reac
37. Intrusive Follow-Up (Mar. 1, 2010) TM 1 – Mag & Flag
38. Intrusive Follow-Up (Mar. 3, 2010) TM 1 – Mag & Flag
39. Intrusive Follow-Up (Mar. 4, 2010) TM 1 – Mag & Flag
40. MPPEH Processing FU (Mar. 5, 2010)
41. Intrusive Follow-Up (Mar. 8, 2010) TM 1 – Mag & Flag
42. Intrusive Follow-Up (Mar. 9, 2010) TM 1 – Mag & Flag
43. Intrusive Follow-Up (Mar. 10, 2010) TM 2 – Mag & Flag

44. Intrusive Follow-Up (Mar. 11, 2010) TM 2 – Mag & Flag
45. Intrusive Follow-Up (Mar. 12, 2010) TM 2 – Mag & Flag
46. Intrusive Follow-Up (Mar. 15, 2010) TM 2 – Mag & Flag
47. MPPEH Disposition Prep (Mar. 15, 2010)
48. Intrusive Follow-Up (Mar. 16, 2010) TM 1 – Mag & Flag
49. Intrusive Follow-Up (Mar. 17, 2010) TM 1 – Mag & Flag
50. Intrusive Follow-Up (Mar. 18, 2010) TM 1 – Mag & Flag
51. Intrusive Follow-Up (Mar. 19, 2010) TM 1 – Mag & Flag
52. Intrusive Follow-Up (Mar. 22, 2010) TM 1 – Mag & Flag
53. MEC Disposition Prep (Mar. 23, 2010)
54. MEC Disposition Initial (Mar. 23, 2010)
55. MEC Disposition Follow-Up (Mar. 23, 2010)
56. Demobilization Prep (Mar. 23, 2010)
57. MPPEH Disposition Initial (Mar. 24, 2010)
58. MPPEH Disposition Follow-Up (Mar. 24, 2010)
59. Demobilization Initial (Mar. 24, 2010)

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

MOBILIZATION

REPORT NO 001
DATE: Jan 31, 2009
TASK ORDER: 0032
SITE SUPERVISOR: chri cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Confirm Hotel Reservations for Personnel 2. Finalize Team Roster 3. Personnel arrival briefing	
Equipment to be used in task performance	**Personnel**
None	Team Designation: N/A Personnel Assigned: N/A
Remarks:	

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

Name _____ Date Jan 31 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

MOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF DIRECT BILLING IS IN PLACE	Yes	
CONFIRM ROOM RESERVATIONS ARE IN PLACE	Yes	
OBTAIN LOCAL MAPS FOR USE OF INCOMING PERSONNEL	Yes	
PROVIDE CONTACT NUMBER TO UXO PROGRAM MANAGER	Yes.	

No comments

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

MOBILIZATION

REPORT NO 002
DATE: Feb 1, 2010
TASK ORDER: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Verify personnel qualifications 2. Review of Work and Safety Plans 3. Receipt Inspection of Equipment 4. Safety Briefing 5. Site Orientation	
Equipment to be used in task performance	**Personnel** Team Designation: N/A Personnel Assigned: N/A
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 1, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

MOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	No	Draft work Plan
VERIFY PLANS ARE PEER REVIEWED	Yes	Draft work Plan
PROJECT PLANS REVIEWED BY PROJECT PERSONNEL	Yes	
AUDIT MEDICAL CLEARANCE FOR COMPLETENESS AND CURRENCY	Yes	
VERIFY PERSONNEL TRAINING RECORDS ARE COMPLETE AND VERIFIED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PROJECT INITIATION KICK-OFF SAFETY BRIEFING	Yes	
VERIFY SITE ORIENTATION IS CONDUCTED	Yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE PREPARATION

REPORT NO 003
DATE: Feb 1, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Carrs

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site preparation 4. Insure site facilities are set-up according to Project Plans	
Equipment to be used for task performance Pickup trucks Hand Held Magnetometers. Personal Protective clothing	**Personnel** Team Designation: Personnel Assigned: See Daily Report
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 1, 2010
Quality Control Specialist

SITE PREPARATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY LOCAL AGENCY COORDINATION PROCEDURES ARE IN PLACE	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY OPERATING SCHEDULES ARE FINIALIZED	Yes	
ENSURE SECURE STORAGE FOR EQUIPMENT IS PLANNED	Yes	
VERIFY INITIAL SITE SPECIFIC TRAINING IS PERFORMED	Yes	
VERIFY THAT SECURE STORAGE FOR EQUIPMENT	Yes	
VERIFY EXPLOSIVE STORAGE AND PROCESSING AREAS ARE IDENTIFIED IAW WITH EXPLOSIVE SAFETY SUBMISSION PLAN	No	Awaiting Delivery
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
ENSURE RECEIPT AND STORAGE PROCEDURES IN PLACE TO COMPLY WITH ATF GUIDANCE	No	Awaiting Delivery
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY VEHICLES ARE RECIEPT INSPECTED	Yes	
VERIFY THAT MOBILIZATION OF EQUIPMENT AND PLACEMENT IAW PROJECT PLANS	Yes	
VERIFY RECEIPT GEOPHYSICAL EQUIPMENT IS IAW PROJECT PLANS	Yes	Held Held
VERIFY THAT EQUIP IS CALIBRATED OR CHECK DURING RECEIPT	Yes	
VERIFY LICENSED LAND SURVEYOR WILL INSTALL THE GRID SYSTEM	No	Pending
VERIFY TEST SECTOR LOCATIONS ARE SELECTED IAW PLAN	No	Pending
VERIFY TEST SECTOR LAYOUT IS IAW PROJECT PLANS	No.	Pending
VERIFY SECTOR LAY-OUT IAW FIELD SAMPLING PLAN	No	Pending
VERIFY TEST SECTOR BLIND SEED ITEMS ARE PROPERLY PLACE.	No	Pending
VERIFY PROCEDURES FOR DAILY EQUIP FUNCTION CHECKS TO BE PERFORMED AND RECORDED	Yes	
VERIFY PLANS FOR ESTABISHING EXCLUSION ZONES ARE ESTABLISHED IAW SSHP	Yes	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Yes	

QUALITY CONTROL REPORT
INITIAL PHASE

SITE PREPARATION

REPORT NO 004
DATE: Feb 1, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Carers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site preparation 4. Insure site facilities are set-up according to Project Plans	
Equipment to be used for task performance	**Personnel** Team Designation: Personnel Assigned: See Daily Report
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name [signature] Date Feb 1 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

SITE PREPARATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM PREPARATORY PHASE STEPS ARE COMPLETED	Yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES	yes	
VERIFY LOCAL AGENCY COORDINATION	yes	
VERIFY SECURE STORAGE FOR EQUIPMENT	yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY EXPLOSIVE STORAGE AND PROCESSING AREAS ARE SET-UP IAW WITH EXPLOSIVE SAFETY SUBMISSION	No.	Awaiting Delivery
VERIFY EXPLOSIVE STORAGE IS ACCOMPLISHED IAW ATF GUIDANCE		
VERIFY VEHICLES ARE INSPECTED	yes	
VERIFY GEOPHYSICAL EQUIPMENT IS IN PLACE IAW PROJECT PLANS	yes	Hand Held Instruments
VERIFY THAT EQUIP IS CALIBRATED TESTED UPON RECEIPT	yes	
VERIFY LICENSED LAND SURVEYOR HAS INSTALLED THE GRID SYSTEM	No	Pending
VERIFY TEST SECTOR LOCATIONS ARE SELECTED IAW PLAN	No	pending
VERIFY TEST SECTOR LAYOUT IS IAW PROJECT PLANS	No	pending
VERIFY SECTOR LAY-OUT IAW FIELD SAMPLING PLAN	No.	Pending
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	No	Pending
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	yes	
VERIFY HAND HELD GEOPHYSICAL INTRUMENTS ARE CHECKED ON TEST AREA	yes.	

QUALITY CONTROL REPORT
PREPARATORY PHASE

VEGETATION TRIMMING

REPORT NO 005
DATE: Feb 2, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance weed whackers Bobcat with mowing/cutting decks Personal Protective clothing 2 pick up trucks	**Personnel** Team Designation: Vegetation clearance Personnel Assigned: Chris Scoville Jose Garcia Mike Harper
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 4, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
Project Plans/Field Procedures Review	Yes	Draft Plans
Verify approved and current work plan on-site Applicable sections of the work plan have been reviewed	Yes Yes	Draft workplans
Verify communications system is set-up and operational	Yes	
Verify vehicles inspection procedures are in place. Mechanical inspection forms filled out	Yes	
Work Execution process	Yes	
Access Agreements in place	N/es	
Verify equipment guards are in place where appropriate	Yes	
Verify refueling precautions are in place	No	No Spill control Kit on Hand
Review Vegetation trimming team UXO requirements	Yes	3 uxo Personnel Assigned as Escorts
Health and Safety		
Verify that personnel have proper personnel protective equipment available	Yes	
Ensure procedures for equipping motorized equipment with fire extinguisher and first aid kits	Yes	
Verify exclusion zones and site control procedures are in place per APP/HSP	Yes	
Emergency Response Procedures have been reviewed.	Yes	
Other		
Review of Biological Resource Considerations	Yes	

QUALITY CONTROL REPORT
INITIAL PHASE

VEGETATION TRIMMING

REPORT NO 006
DATE: Feb 2, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chmer

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance weed whacker Bobcat with mowing/cutting deck Pick-up trucks	**Personnel** Team Designation: Vegetation TRIMMING Personnel Assigned: Chris Scoville Jose Garica Mike Harper
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name [signature] Date Feb 2 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM PREPARATORY STEPS HAVE BEEN COMPLETED	Y	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY VEHICLES ARE INSPECTED	Y	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Y	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Y	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Y	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Y	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Y	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Y	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Y	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Y	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 007
DATE: Feb 3
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavas

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance	**Personnel**
weed whacker Bobcat with mowing cutting deck Pickup trucks	Team Designation: veg trimming Personnel Assigned: chris Scoville Jose Garcia mike Harper
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name [signature] Date Feb 3, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM INITIAL STEPS HAVE BEEN COMPLETED AND DESCREPANCIES CORRECTED	Yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY VEHICLES ARE INSPECTED	Yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE SURVEY

REPORT NO 008
DATE: 2/4/2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site survey preparation	
Equipment to be used for task performance Survey equipment Schoenedt Pickup truck	**Personnel** Team Designation: Survey team Personnel Assigned: Robert Dupuy James Pikolecky UXO Escort: David Tyler
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date 2/4/2010
Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Yes	
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Yes	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS WILL BE PLOTTED ON FIELD MAPS	Yes	
ENSURE SURVEY PARTY WILL ESCORTED BY A UXO TECHNICIAN	Yes	
VERIFY THAT GRID CORNERS WILL BE PLOTTED ON FIELD MAPS	Yes	
VERIFY THAT THE GRID SYSTEMS WILL BE SURVEYED IN BY LICENSED SURVEYOR.	Yes	

QUALITY CONTROL REPORT
INITIAL PHASE

SITE SURVEY

REPORT NO 009
DATE: 2/4/2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chuck

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site survey preparation	
Equipment to be used for task performance Survey equipment Schonsedt Pickup truck	**Personnel** Team Designation: Survey team Personnel Assigned: Robert Dupuy James Pekuleky UXO Escort - David Tyree
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date 2/4/2010
Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
ENSURE PREPARATORY STEPS HAVE BEEN ACCOMPLISHED	Yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
ENSURE SURVEY PARTY IS ESCORTED BY A UXO TECHNICIAN	Yes	
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS USED IN AREAS WITH GROUND COVER AS A SAFETY STEP	Yes	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS ARE PLOTTED ON FIELD MAPS	Yes	Pending Delivery
VERIFY THAT GRID CORNERS ARE PLOTTED ON FIELD MAPS	Yes	Pending Delivery
VERIFY THAT THE GRID SYSTEMS IS SURVEYED IN BY LICENSED SURVEYOR.	Yes.	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 010
DATE: Feb 4, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chvers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance weedwackers Bobcat mower/cutter/shredder	**Personnel** Team Designation: Veg trimming Personnel Assigned: Chris Scoville Jose Garica Mike Harper UXO Escort: James Fisher Mike Lambert
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date 2/4/2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM INITIAL STEPS HAVE BEEN COMPLETED AND DESCREPANCIES CORRECTED	yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY VEHICLES ARE INSPECTED	yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

REPORT NO 011
DATE: Feb 5, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation preparation

Equipment to be used for task performance	**Personnel**
Pickup Pin Flags Schonsedt whites Shovels GPS Guidelines	Team Designation: team #1 Personnel Assigned: Earl Dennis Scotty Cook David Tyree Mark Atherton

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 5, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	Draft
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Y	
VERIFY THAT THE GRID SYSTEMSS HAS BEEN SURVEYED IN BY LICENSED SURVEYOR.	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE PRIMARY MGFD	Y	
VERIFY THE TEAM LEADER WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS DESIGNED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
EXPLOSIVE STORAGE TYPE II MAGAZINES ON SITE	NO	Pending Delivery
EXPLOSIVES ON HAND TO SUPPORT OPERATION	NO	Pending Delivery
ENSURE MINIATURE OPEN-FRONT BARRICADE (MOFD) AVAIABLE	Y	
ENSURE SANDBAGS ARE AVAILABLE AS AN ENGINEERING CONTROL	Y	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

SITE SURVEY

REPORT NO 011
DATE: Feb 5 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chvers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site survey preparation	
Equipment to be used for task performance Survey equipment Pickup truck Schonsedt	**Personnel** Team Designation: Survey team Personnel Assigned: Robert Dupuy James Pikulsky UXO Escort: David Hyre
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date 2/5/2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	Draft
VERIFY NOTIFICATIONS ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
ENSURE SURVEY PARTY IS ESCORTED BY A UXO TECHNICIAN	Yes	
VERIFY THAT GEOPHYSICAL PERFORMEND ON TEST STRIP AND RECORDED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS USED IN AREAS WITH GROUND COVER AS A SAFETY STEP	Yes	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS ARE PLOTTED ON FIELD MAPS	Yes	In Progress
VERIFY THAT GRID CORNERS ARE PLOTTED ON FIELD MAPS	Yes	In Progress
VERIFY THAT THE GRID SYSTEMS IS SURVEYED IN BY LICENSED SURVEYOR.	Yes	In Progress

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 012
DATE: Feb 5, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance	**Personnel** Team Designation: Veg Trimming Personnel Assigned: Chris Scoville Jose Garcia Mike Harper UXO Escort: James Fisher Myra Lambert
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 5, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM INITIAL STEPS HAVE BEEN COMPLETED AND DESCREPANCIES CORRECTED	yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY VEHICLES ARE INSPECTED	yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

SITE SURVEY

REPORT NO 013
DATE: Feb 8, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Carvis

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site survey preparation	
Equipment to be used for task performance	**Personnel**
Survey equipment Pickup truck Schonstedt	Team Designation: Survey Personnel Assigned: Robert Dupuy James PIKucky NO ESCORTS Donatyron
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 8, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY NOTIFICATIONS ACCOMPLISHED IAW SSHP	yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	yes	
ENSURE SURVEY PARTY IS ESCORTED BY A UXO TECHNICIAN	yes	
VERIFY THAT GEOPHYSICAL PERFORMEND ON TEST STRIP AND RECORDED	yes	
VERIFY GEOPHYSICAL EQUIPMENT IS USED IN AREAS WITH GROUND COVER AS A SAFETY STEP	yes	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS ARE PLOTTED ON FIELD MAPS	yes	Readings
VERIFY THAT GRID CORNERS ARE PLOTTED ON FIELD MAPS	yes	Readings
VERIFY THAT THE GRID SYSTEMS IS SURVEYED IN BY LICENSED SURVEYOR.	yes	Readin

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 014
DATE: Feb 5 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Davis

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance	**Personnel** Team Designation: veg trimming Personnel Assigned: Chris Scoville Jose Garcia mike Harper Escort James Fisher Lambert
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 5, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM INITIAL STEPS HAVE BEEN COMPLETED AND DESCREPANCIES CORRECTED	Yes	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY VEHICLES ARE INSPECTED	Yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Yes	

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

REPORT NO 015
DATE: Feb 9, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: chris Covers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during surface clearance preparation

Equipment to be used for task performance	**Personnel**
Pickup Schossadl white's shovels PPE Guidelines Pinflags GPS	Team Designation: team #1 Personnel Assigned: Earl Dennis Scotty cook David Tyree Marc Atterton

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 9, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Yes	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Yes	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Yes	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Yes	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Yes	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Yes	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Yes	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Yes	verbal Discussion
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

SURFACE CLEARANCE

REPORT NO 016
DATE: Feb 9
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Chvez

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during surface clearance preparation	
Equipment to be used for task performance Pickup Schmidt Pin Flags PPE	**Personnel** Team Designation: Team # 2 Personnel Assigned: Richard Fisher James Fisher Myers Lamont Justin Lordy
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date 2/9/2010
Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

SURFACE CLEARANCE

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Yes	
VERIFY THAT THE GRID SYSTEMSS HAS BEEN SURVEYED IN BY LICENSED SURVEYOR.	Yes	
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Yes	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP	Yes	
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
VERIFY THAT ONLY ITEMS LOCATED ON THE SURFACE WILL BE REMOVED	Yes	
VERIFY THAT NO INTRUSIVE ACTIVITES WILL BE UNDERTAKEN DURING THE SURFACE REMOVAL ACTION	Yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Yes	
ENSURE THAT MEC/MPPEH WILL BE MARKED WITH CROSSED PIN FLAG FOR FOLLOW-ON INVESTIGATION	Yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 017
DATE: Feb 9 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Eacers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team while preparing vegetation equipment for operation

Equipment to be used for task performance	**Personnel**
weeawakers Bobcat Brush Hog & chipper Pick-up trucks PPE	Team Designation: Veg trimming Personnel Assigned: Chris Scoville Jose Garcia Mike Harper Escod Fisher Lambert

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 9 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY VEHICLES ARE INSPECTED	yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO 018
DATE: Feb 10, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Covers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during surface clearance preparation	
Equipment to be used for task performance	**Personnel**
Pickup Schussedk whites Shovels PPE Guidelines Pin Flags GPS	Team Designation: team 1 Personnel Assigned: Earl Dennis Scotty Cook David Tyler Mark Atherton
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 10, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	yes	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	yes	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	yes	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	yes	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	yes	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	yes	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	yes	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	yes	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	yes	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	yes	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 0019
DATE: Feb 10 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while conducting vegetation trimming	
Equipment to be used for task performance	**Personnel**
weedeaters Bobcat Brush Hog & chipper PPE	Team Designation: Veg trimming Personnel Assigned: Chris Scoulle Jose Garcia Mike Harper Oxo Scout: Lambert Grally
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 10, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY VEHICLES ARE INSPECTED	Yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH PROCESSING

REPORT NO 020
DATE: Feb 10, 2010
TASK ORDER NO: 6037
SITE SUPERVISOR: Chris Cmrer

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during MPPEH processing preparation

Equipment to be used for task performance	**Personnel**
PPE Camera Plastic Bags	Team Designation: team 1 team 2 Personnel Assigned: Earl Dennis Richard Fisher Frank Hack

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 10 2010
Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Yes	
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
CONFIRM SUXOS WILL SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	Yes	
CONFIRM UXO TECHNICIAL III WILL SUPERVISE THE MPPEH PROCESSING TASK	Yes	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Yes	
VERIFY THE TEAM SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Yes	
VERIFY THAT THE MPPEH WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
ENSURE PERSONNEL HANDLING MPPEH HAS APPROPRIATE PPE	Yes	
ENSURE LOCKABLE CONTAINERS ARE PRESENT ON SITE TO STORE MDAS.	Yes	
VERIFY CHAIN OF CUSTODY FORM IS AVAILABLE	Yes	
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE WILL BE EQUIPPED TO TRANSPORT MPPEH	Yes	

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH PROCESSING

REPORT NO 021
DATE: Feb 10 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Carrs

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during MPPEH processing preparation	
Equipment to be used for task performance PPE Camera Plastic bags	**Personnel** Team Designation: Team 1+2 Personnel Assigned: Frank Hack Ronald Dennis Richard Fisher David Tyen
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 10, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT NON-COMPLIANCE ITEMS DISCOVERED DURING THE PREPARATORY PHASE HAVE BEEN CORRECTED	Yes	
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	Yes	
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK	Yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Yes	
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK	Yes	
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE	Yes	
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.	Yes	
VERIFY CHAIN OF CUSTODY FORM IS BEING USED	Yes	
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH	Yes	
VERIFY THAT NO MORE THAT 2 PERSONNEL ARE RIDE IN MPPEH TRANSPORT VEHICLE	Yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

REPORT NO 022
DATE: Feb 11, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Carers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during MPPEH processing preparation	
Equipment to be used for task performance PPE Camera Plastic Bags	**Personnel** Team Designation: TEAM #1 Personnel Assigned: Earl Perry Frank Hack David Tyson
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 11, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	Yes	
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK	Yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Yes	
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK	Yes	
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE	Yes	
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.	Yes	
VERIFY CHAIN OF CUSTODY FORM IS BEING USED	Yes	
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH	Yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 023
DATE: Feb 11, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while conducting vegetation trimming	
Equipment to be used for task performance weedwackers Bobcat Brush hog & chipper PPE	**Personnel** Team Designation: veg trimmer Personnel Assigned: chris scavillo Jose Garcia mike Harper UXO escort: Lambert Gually
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 11, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY VEHICLES ARE INSPECTED	YES	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	YES	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	YES	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	YES	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	YES	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	YES	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	YES	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	YES	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	YES	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	YES	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO 024
DATE: Feb 11, 2010
TASK ORDER NO: 0632
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
PicKup Schowedt whites Shovels GPS Guidelines Pin Flags	Team Designation: team 1 Personnel Assigned: Earl Dennis Scotty Cook David Tyree

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 11, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	yes	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	yes	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	yes	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	yes	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	yes	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	yes	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	yes	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	yes	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	yes	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	yes	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO 025
DATE: Feb 12, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Owens

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during intrusive investigation tasks	
Equipment to be used for task performance	**Personnel**
Pick up Pin Flags Schnorsedt whites shovels GPS Guideline	Team Designation: team 1 Personnel Assigned: Earl Dennis Scotty Cook David Tyler
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 12, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Yes	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Yes	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Yes	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Yes	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Yes	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Yes	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Yes	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Yes	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

REPORT NO 026
DATE: Feb 12, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during MPPEH processing preparation	
Equipment to be used for task performance	**Personnel** Team Designation: Team #1 Personnel Assigned: Earl Dennis Frank Hack David Tyler
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 12, 2010
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	Yes	
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK	Yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Yes	
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK	Yes	
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE	Yes	
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.	Yes	
VERIFY CHAIN OF CUSTODY FORM IS BEING USED	Yes	
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH	Yes	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO 027
DATE: Feb 12, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while conducting vegetation trimming	
Equipment to be used for task performance	**Personnel** Team Designation: Veg trimming Personnel Assigned: Chris Scoville Jose Garica Mike Harper UXO Escort: Lambert Quilly
Remarks:	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name _____ Date Feb 12, 2010
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY VEHICLES ARE INSPECTED	Yes	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Yes	
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Yes	
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Yes	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Yes	
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Yes	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Yes	
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Yes	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Yes	
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Yes	

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

REPORT NO
DATE: Feb 17, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chis Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation preparation

Equipment to be used for task performance	**Personnel**
Truck White Schonstedt Shovels PPE GPS Pin Flags	Team Designation: Team 2 Personnel Assigned: Richard Fisher James Fisher Justin Lordy Cooper Qually Marya Lambert

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name William R. Vandorf
Quality Control Specialist

Date Feb 17, 2010

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	AREA A
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	YES	"
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	"
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	"
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	YES	"
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	"
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	"
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	"
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	YES	"
VERIFY THAT THE GRID SYSTEMSS HAS BEEN SURVEYED IN BY LICENSED SURVEYOR.	YES	"
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	"
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE PRIMARY MGFD	YES	"
VERIFY THE TEAM LEADER WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	YES	"
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	YES	"
VERIFY DIG SHEET IS DESIGNED TO CAPTURE REQUIRED DATA	YES	"
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	N/A	REACQUIRE GEO PTS.
EXPLOSIVE STORAGE TYPE II MAGAZINES ON SITE	YES	
EXPLOSIVES ON HAND TO SUPPORT OPERATION	NO	HE ON ORDER
ENSURE MINIATURE OPEN-FRONT BARRICADE (MOFD) AVAIABLE	YES	
ENSURE SANDBAGS ARE AVAILABLE AS AN ENGINEERING CONTROL	YES	

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

REPORT NO:
DATE: Feb 17, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during initial intrusive investigation

Equipment to be used for task performance	**Personnel**
Truck White Schonstedt Shovels PPE GPS Pin Flags	Team Designation: Team 2 Personnel Assigned: Richard Fisher James Fisher Justin Lordy Cooper Qually Marya Lambert

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name William R Vandufal
Quality Control Specialist

Date Feb 17, 2010

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO 30
DATE: 18 Feb, 2010
TASK ORDER NO: 0032
SITE SUPERVISOR: Chris Caver

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications ✓
2. Reviewed Work and Safety Plans ✓
3. Observed team during intrusive investigation tasks ✓

Mag & Flag grid pts (124, 125, 144, 145)

Equipment to be used for task performance	**Personnel**
Truck Whites Schonstedts Shovel Guidelines	Team Designation: TM2 Personnel Assigned: Richard Fisher Marya Lambert Justin Lardy Cooper Qually

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

Name William R. Vandenfort
Quality Control Specialist

Date 18 Feb, 2010

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	yes	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	yes	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	N/A	Mag + flag operation
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	yes	Schonstedts/Whites
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	yes	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	yes	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	yes	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	yes	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	yes	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	yes	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	yes	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	yes	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	yes	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	yes	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 31

DATE: 2-19-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level D) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Earl Dennis Dave Tyrer Scotty Cook Jack Munroe

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 2-19-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 32

DATE: 2-22-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during intrusive investigation tasks	
Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level D) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Earl Dennis Dave Tyrer Scotty Cook Jack Munroe Don Haley
Remarks: Team 2 continues mag & flag in Area C. Note that intrusive activities have been cancelled since 1400 hours for UXO Teams due to explosives not being available on site (per Navy instructions).	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 2-22-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 33

DATE: 2-23-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks
4. QC of following grids: (144,145,124,125), (145, 146, 123, 124), (117, 118, 124, 123)

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level D) Pin flags, lathe	Team Designation: TM 2 Personnel Assigned: Richard Fisher Cooper Qually Marya Lambert Justin Lordy

Remarks: Team 2 continues mag & flag in Area C.
* Note that intrusive activities have resumed.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 2-23-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 34

DATE: 2-24-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks
4. QC of grids: (117, 102, 101, 118), (196, 185, 195), (194, 184, 183, 182, 186, 193)

Equipment to be used for task performance	**Personnel**
	Team Designation: TM 2
Truck	Personnel Assigned:
Magnetometers: White/Schonstedt	Richard Fisher
Guidelines	Marya Lambert
Shovels	Cooper Qually
PPE (Level D)	Justin Lordy
Pin flags, lathe	

Remarks: Team 2 mag & flag in Area A. Area C sweep complete with QC proceeding.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 2-24-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

REPORT NO: 35

DATE: Feb 25, 2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MPPEH processing preparation
4. Safe to move MEC/MPPEH transported by hand/vehicle to storage
5. MEC/MPPEH items documented

Equipment to be used for task performance	**Personnel**
Digital Camera Whiteboard PPE Plastic bags	Team Designation: Team 2 Personnel Assigned: Frank Hack Richard Fisher Marya Lambert

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date __25 Feb, 2010_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH		
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP		
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE		
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED		
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL		
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED		
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT		
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK		
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT		
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK		
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL		
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE		
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.		
VERIFY CHAIN OF CUSTODY FORM IS BEING USED		
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH		

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 36

DATE: 2-26-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks
4. QC of grids: (192, 193, 186, 182, 181)

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level D) Pin flags, lathe	Team Designation: TM 2 Personnel Assigned: Richard Fisher Marya Lambert Cooper Qually Justin Lordy

Remarks: Team 2 mag & flag in Area A. Area C QC complete. Reviewing geophysical dig sheets and reacquisition efforts.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 2-26-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 37

DATE: 3-01-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level D) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jack Munroe

Remarks: Team 1 mag & flag in Area A. Review of reacquisition efforts continued.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-01-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 38

DATE: 3-03-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
	Team Designation: TM 1
Truck	Personnel Assigned:
Magnetometers: White/Schonstedt	Don Haley
Guidelines	David Tyrer
Shovels	Jack Munroe
PPE (Level C – Tyvex, over-boots, nitrile gloves)	Scotty Cook
Pin flags, lathe	

Remarks: Team 1 mag & flag in Area B. QC of grids: (167. 168.165.166), (165,166,163,164), (163,164,159,160), (161,162,160,159)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-03-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 39

DATE: 3-04-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks (UXO TM 1)

Equipment to be used for task performance	**Personnel**
	Team Designation: TM 1
Truck	Personnel Assigned:
Magnetometers: White/Schonstedt	Don Haley
Guidelines	David Tyrer
Shovels	Jack Munroe
PPE (Level C – Tyvex, over-boots, nitrile gloves)	Scotty Cook
Pin flags, lathe	

Remarks: QC of grids: (116,117,124,125), (115,116,125,126), (125,126,143,144)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-04-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

REPORT NO: 40

DATE: Mar 5, 2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Review of dig sheets and data entry of Mapsource GPS map to ensure proper MEC/MPPEH disposition and documentation.

Equipment to be used for task performance	**Personnel**
Dig sheets, computer, Mapsource software	Team Designation: Personnel Assigned: Ron Vanderford

Remarks:

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __5 Mar, 2010_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	YES	
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	YES	
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK	YES	
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL	YES	
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE	YES	
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.	YES	
VERIFY CHAIN OF CUSTODY FORM IS BEING USED	YES	
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 41

DATE: 3-08-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks (UXO TM 1)

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: QC of grids: (159,160,157,158), (141,142,160,161), (144,145,152,154)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-08-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 42

DATE: 3-09-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks (UXO TM 1)

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: QC of grid: (143,144,154,157)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-09-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 43

DATE: 3-10-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks (UXO TM 2)

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 2 Personnel Assigned: Richard Fisher Jack Munroe Justin Lordy

Remarks: QC of grid: (134,133,108), (134,135,133), (133,135,136,137,132)
Safety surveillance of UXO Team 2

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date 3-10-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 44

DATE: 3-11-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
   ---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 2 Personnel Assigned: Richard Fisher Jack Munroe Justin Lordy

Remarks: Review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-11-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 45

DATE: 3-12-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Safety surveillance of TM 2
   ---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 2 Personnel Assigned: Richard Fisher Jack Munroe Justin Lordy

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-12-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 46

DATE: 3-15-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Safety surveillance of TM 1
   ---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking). Produced "No Finds" list for EM-61 reacquire per the Time Critical Removal Action Work Plan 2.5.8.4 paragraph 2.
QC of grids (145,146,151,152) & (136,137,138,168,169) Pass

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeyford

Name_____ Date 3-15-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH DISPOSITION

REPORT NO: 47

DATE: 3/15/2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Audited team during MPPEH disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp)	Team Designation: AECOM Site Mgmt.
Trucks w. wooden liner (explosives transport)	Personnel Assigned:
Demo material (Pentex, det cord, lead in line, shotgun primers)	Crispin Waynyoike
Explosives placards	Chris Cavers
Scorpion blasting machine	Frank Hack
	William Vanderford

Remarks: A preparatory meeting was held on 3/15/10 to plan demolition of materials held in the MPPEH magazine at the El Toro site. Initial demo will be composed of three demo holes filled with earth tamp on top of the items to be disposed of per the approved BEM measure. These sites will be cleared first with White/Schonstedt magnetometer before digging the holes. After initial demolition, the demo holes will be first declared safe after a 5 minute wait and then cleared with White/Shonstedts to locate possible MPPEH debris. Follow on demolition may be required to fully dispose or demilitarize the MPPEH debris. All recovered debris will be certified as safe and documented on 1348-1A forms before final disposition to recycler (Timberline).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___3-15-10_____

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Yes	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Yes	
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Yes	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Yes	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Yes	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Yes	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Yes	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Yes	
CONFIRM SUXOS WILL SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	Yes	
CONFIRM UXO TECHNICIAL III WILL SUPERVISE THE MPPEH DISPOSITION TASK	Yes	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Yes	
VERIFY THE TEAM SUPERVISOR WILL SUPERVISE THE LOAD OUT OF EQUIPMENT FOR THE TASK	Yes	
VERIFY THAT THE MPPEH WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Yes	
ENSURE PERSONNEL HANDLING MPPEH HAS APPROPRIATE PPE	Yes	
VERIFY CHAIN OF CUSTODY WILL BE MAINITAINED	Yes	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	Yes	
VERIFY THE CONTAINERS WILL BE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	Yes	
VERIFY CHAIN OF CUSTODY WILL BE PROVIDED TO THE RECYCLER	Yes	
VERFIY DD FORM 1348-1A WILL IS AVAILABLE TO DOCUMENT TRANSFER OF MDAS	Yes	
VERIFY THAT DD FORM WILL BE ANNOTATED IAW SOP 2-19	Yes	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 48

DATE: 3-16-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Surveillance of UXO Team 1

---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking). Cross-referencing data between Geo dig sheets and UXO TM2 reacquisition dig sheets.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date 3-16-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 49

DATE: 3-17-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Surveillance of UXO Team 1

---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking). Cross-referencing data between Geo dig sheets and UXO TM2 reacquisition dig sheets.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date 3-17-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 50

DATE: 3-18-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Surveillance of UXO Team 1

---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking). Cross-referencing data between Geo dig sheets and UXO TM2 reacquisition dig sheets. Created Trimble map (MapSource) showing location of Geo anomalies.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date __3-18-2010_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	YES	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	YES	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	YES	
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 51

DATE: 3-19-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Surveillance of UXO Team 1

---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Guidelines Shovels PPE (Level C – Tyvex, over-boots, nitrile gloves) Pin flags, lathe	Team Designation: TM 1 Personnel Assigned: Don Haley David Tyrer Jed Scott

Remarks: Continued review of geophysical records and data entry for GPS maps/Excel spreadsheets (dig sheet tracking). Cross-referencing data between Geo dig sheets and UXO TM2 reacquisition dig sheets. Created Trimble map (MapSource) showing location of Geo anomalies. Possible discrepancy – Geo cannot account for three blind seeds in their "picks".
QC of grids (123,122,146,147), (146,147,148,151), (131,132,137,138), (109,110,131,132)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date __3-19-2010_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 52

DATE: 3-22-2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans

---see remarks---

Equipment to be used for task performance	**Personnel**
Truck Magnetometers: White/Schonstedt Shovels-Hoematic PPE (Level C – Tyvex, over-boots, nitrile gloves)	Team Designation: QC Personnel Assigned: William Vanderford

Remarks: Data entry for dig sheets into Exel spreadsheets & Trimble map (MapSource) showing location of Geo anomalies. Begin Quality Deficiency Notice (QDN ET002 – Geo failure to pick 3 bliind seeds).
QC of geophysical grids: (116,117,102,103), (115,116,103,104), (104,114,115), (114,115,126,127), (126,127,142,143), (142,143,157,160), (113,114,104), (113,114,127,128), (112,113,128,129), (111,112,129,130), (128,129,140,141), (129,130,139,140)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 3-22-2010

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	YES	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	YES	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	YES	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	YES	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	YES	

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

MEC DISPOSITION

REPORT NO: 53

DATE: 3/23/2010

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp)	Team Designation: AECOM Site Mgmt.
Trucks w. wooden liner (explosives transport)	Personnel Assigned:
Demo material (Pentex, det cord, lead in line, shotgun primers)	Crispin Waynyoike
	Chris Cavers
Explosives placards	Frank Hack
Scorpion blasting machine	William Vanderford

Remarks: A preparatory meeting was held on 3/15/10 to plan demolition of materials held in the MPPEH magazine at the El Toro site. Initial demo will be composed of three demo holes filled with earth tamp on top of the items to be disposed of per the approved BEM measure. These sites will be cleared first with White/Schonstedt magnetometer before digging the holes. After initial demolition, the demo holes will be first declared safe after a 5 minute wait and then cleared with White/Shonstedts to locate possible MPPEH debris. Follow on demolition may be required to fully dispose or demilitarize the MPPEH debris. All recovered debris will be certified as safe and documented on 1348-1A forms before final disposition to recycler (Timberline).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 3-23-10

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE		
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN		
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-4, MEC DEMOLITION OPERATIONS		
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP		
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE		
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED		
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL		
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED		
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR		
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS		
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND		
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT		
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK		
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL		
EXPLOSIVE STORAGE TYPE II MAGAZINES ON SITE		
EXPLOSIVES ON HAND TO SUPPORT OPERATION		
VERIFY ORDNANCE ACCOUNTABILITY LOG IS AVAILABLE		
VERFIY DEMOLITION SHOT RECORD IS AVAILABLE		
ENSURE SANDBAGS ARE AVAILABLE AS AN ENGINEERING CONTROL		
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES		
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE		

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

MEC DISPOSITION

REPORT NO: 54

DATE: 3-23-10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
	Team Designation: Demo Team
Backhoe (demo hole & tamp)	Personnel Assigned:
Trucks w. wooden liner (explosives transport)	Frank Hack
Demo material (Pentex, det cord, lead in line, shotgun primers)	Terry Phelps
	Dave Tyrer
Explosives placards	Jed Scott
Scorpion blasting machine	Richard Fisher
Sand bags	James Fisher

Remarks:
Three demolition shots were detonated at 10:00 a.m. on 3/23/2010 to safe or demil the MPPEH held in the El Toro MPPEH magazine. The majority of the MPPEH was destroyed in the first shot. A clean up shot was conducted at 15:00 p.m. and no additional material was recovered. Conclusion is that all MPPEH was destroyed or consumed.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandeford

Name_____ Date __3-23-10_____

Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
HAVE DESCREPANCIES NOTED DURING PREPARATORY PHASE BEEN CORRECTED	N/A	No discrepancies noted
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-4, MEC DEMOLITION OPERATIONS	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	YES	
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR	YES	
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS	YES	
CONFIRM EXPLOSIVES ON HAND TO SUPPORT OPERATION	YES	
VERIFY DEMOLITION SUPERVISOR CONDUCTS THE OPERATION BRIEFING	YES	
VERIFY DEMOLITION SURPERVISOR CONDUCTS THE PRE-DEMOLITION SAFETY BRIEFING	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	White/Schonstedts
VERIFY DEMOLITION SUPERVISOR IS MONITORING WEATHER CONDITIONS	YES	
VERIFY TEAM MEMBERS REPORT COMPETION OF ASSIGNED TASKS TO THE DEMOLITION SUPERVISOR	YES	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT	YES	
CONFIRM SITE CONTROL MEASURES ARE IN PLACE AND ENFORCED	YES	
IS ADEQUATE FIRST AID AND FIRE PROTECTION EQUIPMENT AVAILABLE	YES	
VERIFY THAT THE MEC IS HANDLED ONLY BY UXO QUALIFIED PERSONNEL	YES	
CONFIRM THAT ENGINEERING CONTROLS ARE USED TO REDUCE MSD AND CONTROL FRAGMENTS	YES	
VERIFY ORDNANCE ACCOUNTABILITY LOG IS ANNOTATED	YES	
VERFIY DEMOLITION SHOT RECORD IS ANNOTATED	YES	

QUALITY CONTROL REPORT
INITIAL PHASE

VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES	YES	
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE	YES	
VERIFY PREPARATION OF THE EXPLOSIVE CHARGE IS IN ACCORDANCE WITH DEMOLITION OPERATIONS SOP	YES	
CONFIRM POST DEMOLITION PROCEDURES ARE CONDUCTED IAW DEMOLITION OPERATIONS SOP	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MEC DISPOSITION

REPORT NO: 55

DATE: 0032

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp) Trucks w. wooden liner (explosives transport) Demo material (Pentex, det cord, lead in line, shotgun primers) Explosives placards Scorpion blasting machine Sand bags	Team Designation: Demo Team Personnel Assigned: Frank Hack Terry Phelps Dave Tyrer Jed Scott Richard Fisher James Fisher

Remarks: Three demolition shots were detonated at 10:00 a.m. on 3/23/2010 to safe or demil the MPPEH held in the El Toro MPPEH magazine. The majority of the MPPEH was destroyed in the first shot. A clean up shot was conducted at 15:00 p.m. and no additional material was recovered. Conclusion is that all MPPEH was destroyed or consumed.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vandyford

Name_____ Date _3-23-10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
HAVE DESCREPANCIES NOTED DURING INITIAL PHASE BEEN CORRECTED	N/A	No discrepancies were noted
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-4, MEC DEMOLITION OPERATIONS	YES	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	YES	
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR	YES	
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS	YES	
CONFIRM EXPLOSIVES ON HAND TO SUPPORT OPERATION	YES	
VERIFY DEMOLITION SUPERVISOR CONDUCTS THE OPERATION BRIEFING	YES	
VERIFY DEMOLITION SURPERVISOR CONDUCTS THE PRE-DEMOLITION SAFETY BRIEFING	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	
VERIFY DEMOLITION SUPERVISOR IS MONITORING WEATHER CONDITIONS	YES	
VERIFY TEAM MEMBERS REPORT COMPETION OF ASSIGNED TASKS TO THE DEMOLITION SUPERVISOR	YES	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT	YES	
CONFIRM SITE CONTROL MEASURES ARE IN PLACE AND ENFORCED	YES	
IS ADEQUATE FIRST AID AND FIRE PROTECTION EQUIPMENT AVAILABLE	YES	
VERIFY THAT THE MEC IS HANDLED ONLY BY UXO QUALIFIED PERSONNEL	YES	
CONFIRM THAT ENGINEERING CONTROLS ARE USED TO REDUCE MSD AND CONTROL FRAGMENTS	YES	
VERIFY ORDNANCE ACCOUNTABILITY LOG IS ANNOTATED	YES	
VERFIY DEMOLITION SHOT RECORD IS ANNOTATED	YES	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES	YES	
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE	YES	
VERIFY PREPARATION OF THE EXPLOSIVE CHARGE IS IN ACCORDANCE WITH DEMOLITION OPERATIONS SOP	YES	
CONFIRM POST DEMOLITION PROCEDURES ARE CONDUCTED IAW DEMOLITION OPERATIONS SOP	YES	

AECOM

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

DEMOBILIZATION

REPORT NO. 56

DATE: 3-23-10

TASK ORDER: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1.Personnel departure briefing 2.Contact vendors to pickup equipment	
Equipment to be used in task performance	**Personnel**
	Team Designation: Personnel Assigned: Frank Hack Chris Cavers Ron Vanderford
Remarks: One U-Haul truck was rented to transport all equipment back to the home office in Richmond, VA. Half of crew has been de-mobilized and travel arrangements made for the remainder. Arrangements have been made for pickup of the office trailer, explosive magazines, and portable toilets.	

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __3-23-10_____

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

DEMOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF PERSONNEL CHECKING OUT AND DEPARTURE DATES DIRECT BILLING IS IN PLACE	YES	
VERIFY VENDOR IS NOTIFIED OF REQUIREM ENT TO PICK UP PORTABLE TOILETS, SITE TRAILER, GENERATORS ETC.	YES	
VERIFY RENTAL VEHICLES ARE WASHED AND REFUELED TO THE LEVEL THEY WERE RECEIVED	YES	
VERIFY PLANS TO HAVE A CLOSE-OUT SITE WALK WITH THE CLIENT TO CONFIRM SITE RESTORATION REQUIREMENTS	YES	
VERIFY PLANS TO ENSURE COLLECT SOLID WASTE AND TRASH FROM FOR DISPOSAL OFF SITE.	YES	

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH DISPOSITION

REPORT NO: 57

DATE: 3-24-10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Audited team during initial performance of MPPEH disposition	
Equipment to be used for task performance 1348-1 form Two dumpsters (one for cultural debris, another for munition related debris)	**Personnel** Team Designation: El Toro Site Mgmt. Personnel Assigned: Frank Hack Ron Vanderford Chris Cavers
Remarks: Material was re-inspected on 3-23-2010 with 3rd party QA. Chain of custody was documented on 1348-1 form as MDAS as suitable for recycling.	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __3/24/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	YES	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	YES	
CONFIRM UXO TECHNICIAL III IS SUPERVISING THE MPPEH DISPOSITION TASK	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	N/A	No explosive hazard present in cultural debris or MDAS.
VERIFY THE TEAM SUPERVISOR HAS SUPERVISED THE LOAD OUT OF EQUIPMENT FOR THE TASK	YES	Forklift for placing dumpsters onto Timberlines trailer.
VERIFY THAT THE MPPEH IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
ENSURE PERSONNEL HANDLING MPPEH ARE WEARING APPROPRIATE PPE	YES	
VERIFY CHAIN OF CUSTODY IS MAINITAINED	YES	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	YES	
VERIFY THE CONTAINERS ARE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	YES	
VERIFY CHAIN OF CUSTODY IS BE PROVIDED TO THE RECYCLER	YES	
VERFIY DD FORM 1348-1A IS USED TO DOCUMENT TRANSFER OF MDAS	YES	
VERIFY THAT DD FORM IS ANNOTATED IAW SOP 2-19	YES	

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH DISPOSITION

REPORT NO: 58

DATE: 3-24-10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Audited team during MPPEH disposition follow-on

Equipment to be used for task performance	**Personnel**
1348-1 form Two dumpsters (one for cultural debris, another for munition related debris) Forklift	Team Designation: Personnel Assigned: Frank Hack Ron Vanderford Chris Cavers

Remarks: Form 1348-1 was filled out to complete the chain of custody. Two dumpsters picked up by forklift and placed on trailer owned by Timberline (scrapper/recycler). One dumpster contained only cultural debris and the other contained the MDAS (munition related debris).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __3-24-10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	YES	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	YES	
CONFIRM UXO TECHNICIAL III IS SUPERVISING THE MPPEH DISPOSITION TASK	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	N/A	No explosive hazard present in cultural debris or MDAS.
VERIFY THE TEAM SUPERVISOR HAS SUPERVISED THE LOAD OUT OF EQUIPMENT FOR THE TASK	YES	Forklift for placing dumpsters onto Timberlines trailer.
VERIFY THAT THE MPPEH IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
ENSURE PERSONNEL HANDLING MPPEH ARE WEARING APPROPRIATE PPE	YES	
VERIFY CHAIN OF CUSTODY IS MAINITAINED	YES	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	YES	
VERIFY THE CONTAINERS ARE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	YES	
VERIFY CHAIN OF CUSTODY IS BE PROVIDED TO THE RECYCLER	YES	
VERFIY DD FORM 1348-1A IS USED TO DOCUMENT TRANSFER OF MDAS	YES	
VERIFY THAT DD FORM IS ANNOTATED IAW SOP 2-19	YES	

AECOM

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

DEMOBILIZATION

REPORT NO. 59

DATE: 3-24-10

TASK ORDER: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1.Personnel departure briefing
2.Contact vendors to pickup equipment

Equipment to be used in task performance	**Personnel**
U-Haul vehicle	
Rental vehicles	Team Designation:
Timberline dumpsters (cultural debris/MDAS)	Personnel Assigned:
Office trailer	Chris Cavers
Portable toilets	Frank Hack
3ea. Type II magazine	Ron Vanderford

Remarks: One U-Haul truck was rented to transport all equipment back to the home office in Richmond, VA. With the exception of site management, the site crew has been de-mobilized and travel arrangements have been completed. The office trailer and Timberline dumpsters have been picked up by the vendors and pick up arrangements have been made for the explosive magazines, backhoe, forklift, portable toilets and portable generator. Rental vehicles returned.

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 3-24-10

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

DEMOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF PERSONNEL CHECKING OUT AND DEPARTURE DATES DIRECT BILLING IS IN PLACE	YES	
VERIFY VENDOR IS NOTIFIED OF REQUIREM ENT TO PICK UP PORTABLE TOILETS, SITE TRAILER, GENERATORS ETC.	YES	
VERIFY RENTAL VEHICLES ARE WASHED AND REFUELED TO THE LEVEL THEY WERE RECEIVED	YES	
VERIFY PLANS TO HAVE A CLOSE-OUT SITE WALK WITH THE CLIENT TO CONFIRM SITE RESTORATION REQUIREMENTS	YES	
VERIFY PLANS TO ENSURE COLLECT SOLID WASTE AND TRASH FROM FOR DISPOSAL OFF SITE.	YES	

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	2/8/10 X	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**			**YES**	**NO**	**NA**
	EQUIPMENT AND SUPPLIES					
	(2) Bound logbooks			✓✓		
	Cell phone (1 per person)			✓✓		
JD	Fire extinguisher on-site as of 2/3/10			✓✓	~~✓~~ D	
BZ	First Aid kits			✓	✓	
	Survey/Traffic vests (high visibility – 1 per person)			✓✓		
	Laptop computer (w/EM61Mk2; Trimble TerraSync; Pathfinder Office; SURFER; Oasis *montaj*; and GSV Calculator software loaded)			✓✓		
	Geonics Limited EM61-MK2 system;			✓✓		
	Console containing transmitter and receiver electronics;			✓✓		
	Cable to connect receiver to Allegro data logger;			✓✓		
	Cable to connect transmitter to bottom coil;			✓✓		
	Pig tail cable to connect bottom and top coils;			✓✓		
	Non-conductive sled/cart;			✓✓		
	Push-cart handle or towing assembly, and,			✓✓		
	GPS tripod/antenna mount.			✓✓		
	Allegro data logger with battery charger;			✓✓		
EC	Standard response target (steel sphere or spike) (rebar)			✓	✓	
EC	Standardization jig (if not incorporated into sled design);			✓	✓	
	(2) 8-ft steel tow chains using 8-inch nails instead			—	✓	NA
	Tow vehicle			—	—	NA NA
	Traffic cones/fiducial markers			✓✓	~~✓~~ D	
	Extra batteries for the transmitter ~~and data logger;~~ D			✓✓		
	Compass (pocket transit)			✓✓		
	Battery chargers (for 12-volt car batteries)			✓✓		
EC	(1) ~~(2)~~ 12-volt lead-acid batteries			✓	✓	
	(2) Survey tripods			✓✓	~~✓~~ D	in vehicle
	(6) Sand bags			✓✓	~~✓~~ I	at site

JDickinson 2/4/10
John Dickinson 2/8/10

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	X	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	RTK GPS system (base station and rover- e.g., Trimble 5700);				✓ ✓		
	WAAS-capable GPS (handheld)				✓ ✓		
	Handheld All-metals detector (e.g., Whites PI Surfmaster or XLT)				✓ ✓		
	Magnetic locator (e.g., Schonstedt Ga-52cx)				✓ ✓		
JD	(2) 100m survey measuring tape			D	✓ 2/5/10	✓	
	150m (or 500 ft) surveyor string or rope				✓ ✓		NA
JD	5lb hammer				2/5/10	X D	NA
EC	(8) steel spike (8-inch nails)				—	✓	NA
	Shovel and/or clam-shell post hole digger				✓		
EC	(2) 1.0-inch ID x 4-inch steel pipe nipples			D	2/5/10	✓	NA
EC	(2) 4.0-inch ID x 12-inch steel pipe nipples			D	2/5/10	✓	NA
EC	(5) 0.5-inch ID x 3.5-inch steel pipe nipples			D	2/5/10	✓	NA
EC	(4) Wood laths for staking corners			D	2/5/10	✓	NA
	PERSONNEL AND DOCUMENTATION						
	Project Geophysicist on-site				✓ ✓		
	Site/Staff Geophysicist on-site				✓ ✓		
	Geophysical Equipment Operator (GEO) on-site				✓ ✓		
	UXO Technician (II or III) on-site for MEC avoidance				✓ ✓		
CW	Approved Work Plan			D	2/5/10	✓	
CW	Safety Plan or Safe Work Procedure			D	2/5/10	✓	
	SOP MRG-2009-002 Digital Geophysical Mapping w/EM61 Mk2				✓ ✓		
	EM61 Mk2 User Manual				✓ ✓		
	GPS User manuals; Electronically				✓ ✓		
	SET-UP AND FIELD PROCEDURES						
	GSV IVS plot area located and prepared (as needed)				✓		

J Dickinson 2/4/10
J Dickinson 2/8/10

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	X	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	Task-Specific training provided to DGM surveys personnel.				✓		
	Data-processing personnel understand geophysical principles underlying the TDEM method.				✓		
	Geonics, Ltd., EM61 Mk2 system deployed as an array of a single transceiver coil coupled with a real-time kinematic (RTK) GPS receiver.				✓		**NA**
	Data from four time gates are recorded.				✓		**NA**
	Data acquisition and recording with Allegro CX field computer.				✓		**NA**
	Survey speed nominally limited to collect data at <0.8-foot (0.25 meter) intervals.				✓		**NA**
	Local positioning and geo-referencing of the geophysical system accomplished using a Trimble 5700 RTK GPS system.				✓		**NA**
	The GPS antenna mounted on the cart where it does not adversely affect the EM measurements and the data streamed directly into the data logger used to capture the geophysical data.				✓		**NA**
	Data logger configured to collect DGM data at 10 Hz				✓		**NA**
	Navigation data collected at 1 Hz.				✓		**NA**
	The project coordinate system referenced to WGS84.				✓		**NA**
	A safety and operational briefing attended by all personnel each day.				✓		**NA**
	Daily briefing attendance and the operational plan for the day's work recorded in the team leader's daily log.				✓		**NA**
	System electronics warmed up (i.e., typically 10 to 15 minutes depending on ambient conditions).				✓		**NA**
	Acquisition parameters: 4 time gates at 216, 366, 660 and 1266 microseconds.				✓		**NA**
	DATA QC TESTS						
	Pre-survey equipment operational (QC) tests performed daily				✓		**NA**
	QC tests and survey data collected as separate files.				✓		**NA**
	Post data collection QC tests performed.				✓		**NA**
	Data files downloaded at end of survey day.				✓		**NA**

John Dickerson 2/8/10

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	X	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	Field logs and documentation reviewed, signed, and dated daily.						**NA**
	Personnel Test						
	Response less than 1 millivolt (mV).				✓		**NA**
	Dataset line number incremented to capture personnel test data in the mission data file.				✓		**NA**
	Performance of test for each survey member documented in the daily log.				✓		**NA**
	Cable Shake Test						
	Results of this test recorded in the daily log.				✓		**NA**
	Dataset line number incremented to capture final shake test data in the mission data file.				✓		**NA**
	Instrument Standardization						
	Static background readings (static background response test) recorded for 30 to 60 seconds, or as specified in the project work plan.				✓		**NA**
	Target spike response recorded for an additional 30 to 60 seconds, without changing any operating settings.				✓		**NA**
	Post-spike response recorded for 30 seconds of data in the data file.				✓		**NA**
	Difference between target and background response calculated (subtract background from the target response value) and recorded in the daily log.				✓		**NA**
	Static repeatability ±10% of Standard Response for each channel utilized.				✓		**NA**
	▪ Filename recorded in daily log				✓		**NA**
	▪ Line number recorded in daily log,				✓		**NA**
	▪ Numerical results recorded in daily log (referenced to the specific data file).				✓		**NA**
	▪ At a minimum, standardization at the beginning and end of each field data file recorded.				✓		**NA**

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	X	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	Position and Response Static and Dynamic Repeatability, Latency, and Noise Regime Documentation					
	• Steel spike (or 9-inch length of rebar) placed in the ground along the test transect with no more than a 1-inch stick-up.				✓		NA
	• Target 1 ~~(a steel-link chain)~~ secured in-place such that it lies across the path of the transect. using 8-inch nail				✓		NA
	• Target 2 ~~steel-link chain)~~ secured in-place at ground level a measured distance from the first. using 8-inch nail				✓		NA
	• Locations of each target marked with laths and/or flagging.				✓		NA
	QC Tests						
	• Dataset line number incremented and line number and filename recorded in daily log for each test.				✓		NA
	• DGM system transited over the targets in the QC traverse at normal survey pace, once in each direction.				✓		NA
	• GPS antenna is precisely located over the steel spike/rebar for static position reference (geodetic functionality) test				✓		NA
	• Reference position recorded in daily log.				✓		NA
	• Daily reference coordinates compared to known position. Measurements that vary more than ± 0.3 meters will trigger a review of the GPS equipment and affected data. Do not proceed with field data collection until any position reference disparity greater than 0.3 meters have been resolved and corrected.				✓		NA
	• The noise regime is recorded and monitored as recorded by the geophysical system along the "noise" lane of the GSV. Peak-to-trough background response in excess of 5 millivolts or differing from previous tests by more than 1 millivolt will be reviewed by the project geophysicist to determine causative source.				✓		NA
	COLLECTING FIELD DATA						
	New data file created.				✓		NA

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**	✗	**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	GPS communications indicators checked (a string of "1s" will display and an audible "tick" is typically heard from the logger at 1 second intervals - e.g., 1 hertz);				✓		**NA**
	Data logger periodically monitored for geophysical response and communication with the GPS;				✓		**NA**
	The data in the Allegro data logger are recorded on compact flash cards (external memory selected).				✓		**NA**
	Copy of data files archived in accordance with project Work Plan.				✓		**NA**
	DATA PROCESSING						
	The data compared to the field notes to verify the geometry of the grid.						**NA**
	The standard preprocessing to be performed included						**NA**
	• a check of the precision of the navigational data (point-precision test),						**NA**
	• a determination of the comprehensive coverage to identify any data gaps that may require additional surveying,						**NA**
	• a check of noise levels to ensure they are within acceptable limits, and						**NA**
	• an identification of anomalous data spikes or dropouts that may be associated with cultural features.						**NA**
	Geophysical data presented as gridded contoured maps will include the following basic map features.						**NA**
	Title block that includes the site name (grid), location, and date of survey;						**NA**
	Scale and graphical bar scale;						**NA**
	North arrow (true or grid);						**NA**
	Contour interval (color scale bar);						**NA**
	Color and/or line contours and target symbols; and,						**NA**
	Relevant cultural features if appropriate (e.g., surface ground clutter that may affect data quality).						**NA**

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**		**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	No geophysical data correlated with GPS positioning will be used for data wherein the GPS holidays exceeds 6-seconds.					**NA**
	Response amplitude calculated using a demedian filter					**NA**
	A signal-to-noise parameter will be calculated for each data point and					**NA**
	Weighted sum average of all time-gate responses computed for each data point.					**NA**
	Multi-element convolution match filter keyed to the smallest target of concern applied to data.					**NA**
	The data processor will provide frequency distribution tables and histograms for					**NA**
	• EM response,					**NA**
	• maximum anomalous amplitudes, and					**NA**
	• anomaly grade.					**NA**
	The transects and the locations of the anomalies plotted on site map.					**NA**
	Compiled and prepared for project:					**NA**
	• geophysical response map,					**NA**
	• anomaly map, and					**NA**
	• anomaly "dig sheet".					**NA**
	Performed, as needed for each survey data file:					**NA**
	Positional offset correction;					**NA**
	Sensor bias, background leveling, and/or standardization adjustment;					**NA**
	Sensor drift removal;					**NA**
	Latency correction;					**NA**
	Geophysical noise identification and removal (spatial, temporal, motional, terrain induced);					**NA**
	Gridding method and search criteria; and,					**NA**
	Contour level selection with background shading and analysis.					**NA**
	Recorded in daily log for each geophysical file:					**NA**

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**		**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	File name(s)						**NA**
	Area of Concern;						**NA**
	Geophysical Data Collection unit;						**NA**
	Date Collected;						**NA**
	Line numbers for QC tests						**NA**
	Posting map that presents measurement stations along the transects prepared						**NA**
	EM response profiles for each data set generated.						**NA**
	Corrections, edits, filtering, or normalization of the data used to identify the location of potential MEC anomalies recorded and described in the data processing log.						**NA**
	Discrepancies in positional accuracy of the data noted during the field review, including steps taken to correct or resolve any QC issues recorded in processing log.						**NA**
	The features of the GIS that are reflected in the geophysical data coincident to within 2.5 feet (0.8 meter).						**NA**
	Ambient max/min response recorded for each data set.						**NA**
	RECORDS MANAGEMENT						
	Site Geophysicist recorded and documented the survey effort in a bound field notebook, on field data sheets (if required by the project Work Plan), and data processing logs.						**NA**
	A field map of surveyed areas was maintained as the EM data collection progresses. Field maps will note date/time of the survey, area covered, and the location and description of noise sources that may affect data quality.						**NA**
	Sufficient narrative was provided such that a future reader could reconstruct each day's activities and observations.						**NA**
	The field log and the field data sheet document:						**NA**
	Morning pre-survey checks of instrument and batteries						**NA**
	Safety and planning briefing						**NA**
	Team designation and members						**NA**

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: FEBRUARY 4, 2010

PROJECT:	**MCAS EL TORO SITE 1 NTCRA (OFF-SITE PORTION)**					
AUDIT TEAM:	**John Dickerson; Crispin Wanyoike**					
DGM TEAM:	**John Dickerson; Eric Celebrezze; Brian Zanco**					
PHASE	**PREPARATORY**	**X**	**INITIAL**		**FOLLOW-ON**	
ITEM ID.	**DESCRIPTION/CATEGORY**				**YES**	**NO**	**NA**
	Weather conditions						**NA**
	Identification of transects to be surveyed						**NA**
	Equipment set-up						**NA**
	Definition of data file names						**NA**
	Initialization of data logger(s) to record EM response						**NA**
	Performance of instrument standardization						**NA**
	Any interruptions to data collection or system problems						**NA**
	Verification of complete investigation of all segments						**NA**
	Delivery of digital data to the Earth Tech Site Manager (or designee).						**NA**
	At the end of each field day, the Site Geophysicist signed and dated the field logs and field data sheet(s).						**NA**
	DATA ARCHIVE						
	Collected digital data archived daily by saving it, including processed and raw data files, field notes, photographs, etc., to optical compact disk (CD) or other format media.						**NA**
	Archived data are not manipulated in any fashion.						**NA**
	Files that have been archived copied to another media for manipulation or processing.						**NA**
	The digital data will be downloaded to a computer as well as archived on a second storage medium for backup.						**NA**

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE: 3/10/10

PROJECT:	El Toro MCAS					
AUDIT TEAM:	Eric Celebrezze					
DGM TEAM:	Eric Celebrezze, Brian Zanco, John Dickerson					
PHASE	PREPARATORY		INITIAL		FOLLOW-ON	X
ITEM ID.	DESCRIPTION/CATEGORY			YES	NO	NA
	EQUIPMENT AND SUPPLIES					
	(2) Bound logbooks			X		
	Cell phone (1 per person)			X		
	Fire extinguisher			X		
	First Aid kits			X		
	Survey/Traffic vests (high visibility – 1 per person)			X		
	Laptop computer (w/EM61Mk2; Trimble TerraSync; Pathfinder Office; SURFER; Oasis *montaj*; and GSV Calculator software loaded)			X		
	Geonics Limited EM61-MK2 system;			X		
	Console containing transmitter and receiver electronics;			X		
	Cable to connect receiver to Allegro data logger;			X		
	Cable to connect transmitter to bottom coil;			X		
	Pig tail cable to connect bottom and top coils;			X		
	Non-conductive sled/cart;			X		
	Push-cart handle or towing assembly, and,			X		
	GPS tripod/antenna mount.			X		
	Allegro data logger with battery charger;			X		
	Standard response target (steel sphere or spike)			X		
	Standardization jig (if not incorporated into sled design);			X		
	(2) 8-ft steel tow chains					X
	Tow vehicle					X
	Traffic cones/fiducial markers			X		
	Extra batteries for the transmitter and data logger;			X		
	Compass (pocket transit)			X		
	Battery chargers (for 12-volt car batteries)			X		
	(2) 12-volt lead-acid batteries			X		
	(2) Survey tripods			X		
	(6) Sand bags			X		
	RTK GPS system (base station and rover- e.g., Trimble 5700);			X		
	WAAS-capable GPS (handheld)			X		
	Handheld All-metals detector (e.g., Whites PI Surfmaster or XLT)			X		
	Magnetic locator (e.g., Schonstedt Ga-52cx)			X		
	(2) 100m survey measuring tape			X		
	150m (or 500 ft) surveyor string or rope			X		

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING
GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

DATE:

PROJECT:						
AUDIT TEAM:						
DGM TEAM:						
PHASE	PREPARATORY		INITIAL		FOLLOW-ON	
ITEM ID.	DESCRIPTION/CATEGORY			YES	NO	NA
	5lb hammer			X		
	(8) steel spike (8-inch nails)			X		
	Shovel and/or clam-shell post hole digger			X		
	(2) 1.0-inch ID x 4-inch steel pipe nipples			X		
	(2) 4.0-inch ID x 12-inch steel pipe nipples			X		
	(5) 0.5-inch ID x 3.5-inch steel pipe nipples			X		
	(4) Wood laths for staking corners			X		
	PERSONNEL AND DOCUMENTATION					
	Project Geophysicist on-site					X
	Site/Staff Geophysicist on-site			X		
	Geophysical Equipment Operator (GEO) on-site			X		
	UXO Technician (II or III) on-site for MEC avoidance			X		
	Approved Work Plan			X		
	Safety Plan or Safe Work Procedure			X		
	SOP MRG-2009-002 Digital Geophysical Mapping w/EM61 Mk2			X		
	EM61 Mk2 User Manual			X		
	GPS User manuals;			X		

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

	SET-UP AND FIELD PROCEDURES			
	GSV IVS plot area located and prepared (as needed)	X		
	Task-Specific training provided to DGM surveys personnel.	X		
	Data-processing personnel understand geophysical principles underlying the TDEM method.	X		
	Geonics, Ltd., EM61 Mk2 system deployed as an array of a single transceiver coil coupled with a real-time kinematic (RTK) GPS receiver.	X		
	Data from four time gates are recorded.	X		
	Data acquisition and recording with Allegro CX field computer.	X		
	Survey speed nominally limited to collect data at <0.8-foot (0.25 meter) intervals.	X		
	Local positioning and geo-referencing of the geophysical system accomplished using a Trimble 5700 RTK GPS system.	X		
	The GPS antenna will be mounted on the cart where it does not adversely affect the EM measurements and the data streamed directly into the data logger used to capture the geophysical data.	X		
	Configure the data logger to collect DGM data at 10 Hz	X		
	Interpolated with navigation data collected at 1 Hz.	X		
	The project coordinate system will be referenced to WGS84.	X		
	A safety and operational briefing attended by all personnel each day.	X		
	This briefing attendance and the operational plan for the day's work recorded in the team leader's daily log.	X		
	System electronics warmed up (i.e., typically 10 to 15 minutes depending on ambient conditions).	X		
	Sampling interval set to 10 Hz.	X		
	Acquisition parameters: 4 time gates at 216, 366, 660 and 1266 microseconds.	X		
Break-up	**DATA QC TESTS**			
	Pre-survey equipment operational (QC) tests performed daily stay	X		
	QC tests and survey data collected as separate files. stay	X		
	Post data collection QC tests performed. move to end	X		
	Data files downloaded at end of survey day. move to End	X		
	Field logs and documentation reviewed, signed, and dated daily.	X		
	Personnel Test			

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

	The response should be less than 1 milliVolt (mV).	X			
	If the level exceeds this value, recheck possessions, remove any possible sources of the noise, and perform the test again.	X			
	Increment the dataset line number to capture personnel test data in the mission data file.	X			
	Document performance of test for each survey member in the daily log.	X			
	Cable Shake Test				
	Record the results of this test in the daily.	X		X	Taped cable
	Increment the dataset line number to capture final shake test data in the mission data file.			X	
	Instrument Standardization				
	Static background readings (static background response test) recorded for 30 to 60 seconds, or as specified in the project work plan.	X			
	Target spike response recorded for an additional 30 to 60 seconds, without changing any operating settings.	X			
	Post-spike response recorded for 30 seconds of data in the data file.	X			
	Difference between target and background response calculated (subtract background from the target response value) and recorded in the daily log.	X			
	▪ Filename recorded in daily log	X			
	▪ Line number recorded in daily log,	X			
	▪ Numerical results recorded in daily log (referenced to the specific data file).	X			
	▪ At a minimum, standardization at the beginning and end of each field data file recorded.	X			
	Position and Response Static and Dynamic Repeatability, Latency, and Noise Regime Documentation				
	• Steel spike (or 9-inch length of rebar) placed in the ground along the test transect with no more than a 1-inch stick-up.			X	JSV
	• Target 1 (a steel-link chain) secured in-place such that it lies across the path of the transect.			X	GRW
	• Target 2 steel-link chain) secured in-place at ground level a measured distance from the first.			X	
	• Locations of each target marked with laths and/or flagging.	X			Position well
	~~QC Tests~~ Remove				

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

	• Increment the dataset line number and record line number and filename in daily log.	X		
	• Pass the DGM system over the targets in the QC traverse at normal survey pace, once in each direction.	X		
	• Increment the dataset line number and record line number and filename in daily log.	X		
	• Position the DGM system such that the GPS antenna is precisely located over the steel spike/rebar	X		
	• Record reference position in daily log.	X		
	• Increment the dataset line number and reference position in daily log.	X		
	• Compare data to the known position coordinates. Measurements that vary more than ± 0.3 meters will trigger a review of the GPS equipment and affected data. Do not proceed with field data collection until any position reference disparity greater than 0.3 meters have been resolved and corrected.	X		
	• The noise regime is recorded and monitored as recorded by the geophysical system along the "noise" lane of the GSV. Peak-to-trough background response in excess of 5 millivolts or differing from previous tests by more than 1 millivolt will be reviewed by the project geophysicist to determine causative source.	X		
	COLLECTING FIELD DATA			
	New data file created.	X		
	GPS communications indicators checked (a string of "1s" will display and an audible "tick" is typically heard from the logger at 1 second intervals - e.g., 1 hertz);	X		
	Data logger periodically monitored for geophysical response and communication with the GPS;	X		
	The data in the Allegro data logger are recorded on compact flash cards (external memory selected).	X		
	Copy of data files archived in accordance with project Work Plan.	X		
→ Insert Post QC Tests				
	DATA PROCESSING			
	The data compared to the field notes to verify the geometry of the grid.	X		
	The standard preprocessing to be performed included	X		
	• a check of the precision of the navigational data (point-precision test),	X		
	• a determination of the comprehensive coverage to identify any data gaps that may require additional surveying,	X		

	• a check of noise levels to ensure they are within acceptable limits, and	X		
	• an identification of anomalous data spikes or dropouts that may be associated with cultural features.	X		
	Geophysical data presented as gridded contoured maps will include the following basic map features.	X		
	Title block that includes the site name (grid), location, and date of survey;	X		
	Scale and graphical bar scale;	X		
	North arrow (true or grid);	X		
	Contour interval (color scale bar);	X		
	Color and/or line contours and target symbols; and,	X		
	Relevant cultural features if appropriate (e.g., surface ground clutter that may affect data quality).	X		
	No geophysical data correlated with GPS positioning will be used for data wherein the GPS holidays exceeds 6-seconds.	X		
	Response amplitude calculated using a demedian filter	X		
	A signal-to-noise parameter will be calculated for each data point and	X		
	Weighted sum average of all time-gate responses computed for each data point.	X		
	Multi-element convolution match filter keyed to the smallest target of concern applied to data.	X		
	The data processor will provide frequency distribution tables and histograms for	X		
	• EM response,	X		
	• maximum anomalous amplitudes, and	X		
	• anomaly grade.	X		
	The transects and the locations of the anomalies plotted on site map.	X		
	Compiled and prepared for project:	X		
	• geophysical response map,	X		
	• anomaly map, and	X		
	• anomaly "dig sheet".	X		
	Performed, as needed for each survey data file:	X		
	Positional offset correction;	X		
	Sensor bias, background leveling, and/or standardization adjustment;	X		
	Sensor drift removal;	X		
	Latency correction;	X		
	Geophysical noise identification and removal (spatial, temporal, motional, terrain induced);	X		
	Gridding method and search criteria; and,	X		

3 PHASE QC CHECKLIST FOR DIGITAL GEOPHYSICAL MAPPING GEONICS, LTD., EM61 MK2 AND TRIMBLE RTK GPS NAVIGATION

	Contour level selection with background shading and analysis.	X		
	Recorded in daily log for each geophysical file:	X		
	File name(s)	X		
	Area of Concern;	X		
	Geophysical Data Collection unit;	X		
	Date Collected;	X		
	Line numbers for QC tests	X		
	Posting map that presents measurement stations along the transects prepared	X		
	EM response profiles for each data set generated.	X		
	Corrections, edits, filtering, or normalization of the data used to identify the location of potential MEC anomalies recorded and described in the data processing log.	X		
	Discrepancies in positional accuracy of the data noted during the field review, including steps taken to correct or resolve any QC issues recorded in processing log.	X		
	The features of the GIS that are reflected in the geophysical data coincident to within 2.5 feet (0.8 meter).	X		
	Ambient max/min response recorded for each data set.	X		
	RECORDS MANAGEMENT			
	The geophysical equipment operator, Site Geophysicist, or data processor, as appropriate, recorded and documented the survey effort in a bound field notebook, on field data sheets (if required by the project Work Plan), and data processing logs.	X		
	A field map of surveyed areas was maintained as the EM data collection progresses. Field maps will note date/time of the survey, area covered, and the location and description of noise sources that may affect data quality.	X		
	Sufficient narrative was provided such that a future reader could reconstruct each day's activities and observations.	X		
	The field log and the field data sheet document:	X		
	Morning pre-survey checks of instrument and batteries	X		
	Safety and planning briefing	X		
	Team designation and members	X		
	Weather conditions			X
	Identification of transects to be surveyed	X		
	Equipment set-up	X		
	Definition of data file names	X		
	Initialization of data logger(s) to record EM response	X		
	Performance of instrument standardization	X		
	Any interruptions to data collection or system problems	X		
	Verification of complete investigation of all segments	X		
	Delivery of digital data to the Earth Tech Site Manager (or	X		

	designee).			
	At the end of each field day, the Site Geophysicist signed and dated the field logs and field data sheet(s).	X		
	Data Archive	X		
	Collected digital data archived daily by saving it, including processed and raw data files, field notes, photographs, etc., to optical compact disk (CD) or other format media.	X		
	Archived data are not manipulated in any fashion.	X		
	Files that have been archived copied to another media for manipulation or processing.	X		
	The digital data will be downloaded to a computer as well as archived on a second storage medium (e.g., CD or flash card) for backup.	X		

Second Phase TCRA 3-Phase Quality Control Reports

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Quality Control Report Log for El Toro Second Phase TCRA

01. Mobilization Prep (May 17, 2010)
02. Mobilization Initial (May 18, 2010)
03. Site Preparation Prep (May 18, 2010)
04. Site Preparation Initial (May 19, 2010)
05. Site Survey Prep (May 19, 2010)
06. Site Survey Initial (May 19, 2010)
07. Intrusive Prep (May 19, 2010)
08. Intrusive Initial (May 19, 2010)
09. MPPEH Processing Prep (May 19, 2010)
10. MPPEH Processing Initial (May 19, 2010)
11. Vegetation Trimming Prep (May 25, 2010)
12. Vegetation Trimming Initial (May 25, 2010)
13. Intrusive Follow Up (May 24, 2010)
14. Site Survey Follow Up (May 25, 2010)
15. MPPEH Processing FU (May 27, 2010)
16. Intrusive Follow Up (May 28, 2010)
17. Intrusive Follow Up (June 01, 2010)
18. Vegetation Trimming Follow Up (June 02, 2010)
19. Intrusive Follow Up (June 02, 2010)
20. Intrusive Follow Up (June 03, 2010)
21. Intrusive Follow Up (June 04, 2010)
22. Intrusive Follow Up (June 07, 2010)
23. Intrusive Follow Up (June 08, 2010)
24. MEC Disposition/Demo Prep (June 09, 2010)
25. MEC Disposition/Demo Initial (June 09, 2010)
26. MEC Disposition/Demo Follow Up (June 09, 2010)
27. MPPEH Disposition/1348-1 Prep (June 09, 2010)
28. MPPEH Disposition/1348-1 Initial (June 09, 2010)
29. MPPEH Disposition/1348-1 Follow Up (June 09, 2010)
30. Demobilization Prep (June 09, 2010)
31. Demobilization Initial (June 10, 2010)

Grid Closeout Preparatory (5/21/10)
Grid Closeout Initial (5/25/10)
Grid Closeout Follow Up (5/26/10)

Blind Seed Preparatory (5/21/10)
Blind Seed Initial (5/21/10)
Blind Seed Follow Up (5/26/10)

AECOM

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

MOBILIZATION

REPORT NO: 1.

DATE: 5/17/10

TASK ORDER: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Confirm Hotel Reservations for Personnel 2. Finalize Team Roster 3. Personnel arrival briefing	
Equipment to be used in task performance	**Personnel**
Work Plan, Team Roster	Team Designation: AECOM field management, UXO Teams 1 & 2 Personnel Assigned: see Remarks section
Remarks: The initial on-site personnel present on 5/16/10 were: Chris Cavers, Frank Hack, Ron Vanderford, Dan McKisson, Robert Back, David Taylor & Eric Cellebrezze. Personnel mobilizing on 5/17/10: Chris Buckman, Noah Bullock, Scotty Cook, Martin Guzman, Dean Houseknecht, Steve Kahahua, Jed Scott, & Cory Sullenberger.	

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __5/17/10_____

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

MOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF DIRECT BILLING IS IN PLACE	Y	
CONFIRM ROOM RESERVATIONS ARE IN PLACE	Y	
OBTAIN LOCAL MAPS FOR USE OF INCOMING PERSONNEL	Y	Front desk of Residence Inn
PROVIDE CONTACT NUMBER TO UXO PROGRAM MANAGER	Y	Refer to Team roster

Approved by: _____ ____ Date _5/17/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

AECOM

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

MOBILIZATION

REPORT NO. 2

DATE: 5/18/10

TASK ORDER: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Verify personnel qualifications 2. Review of Work and Safety Plans 3. Receipt Inspection of Equipment 4. Safety Briefing 5. Site Orientation	
Equipment to be used in task performance	**Personnel**
Personnel certifications, Work Plan/Safety Plan and associated sign in sheets. Equipment inventory sheet & Fed Ex receipts	Team Designation: AECOM field management & UXO teams 1 - 2 Personnel Assigned: please refer to Team roster & sign in sheet for initial site kick-off meeting.
Remarks: *Missing certificates for Personnel Qualification spreadsheet	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __5/18/10___

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

MOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY PLANS ARE PEER REVIEWED	Y	
PROJECT PLANS REVIEWED BY PROJECT PERSONNEL	Y	See sign in sheet attached to Work/Safety Plan
AUDIT MEDICAL CLEARANCE FOR COMPLETENESS AND CURRENCY	N	*See Personnel Certifications Sheet
VERIFY PERSONNEL TRAINING RECORDS ARE COMPLETE AND VERIFIED	N	*See Personnel Certifications Sheet
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PROJECT INITIATION KICK-OFF SAFETY BRIEFING	Y	Conducted on 5/18/10
VERIFY SITE ORIENTATION IS CONDUCTED	Y	Conducted on 5/18/10

Approved by: _____ Date _5/18/10___

UXO Quality Assurance Manager

AECOM

Attachment 1 – Tailgate Safety Briefing Sign-In Log

Briefing Conducted By:	Signature:	Date:	Time:
CHRIS CAVOS	Chris Cavos	5/18/10	0700

Project name:	Project Number:
SITE 1 ADJACENT PROPERTY TCRA	

This sign-in log documents the topics of the tailgate safety briefing and individual attendance at the briefing. Personnel who perform work operations onsite are required to attend each safety briefing and acknowledge their ability to ask questions and receipt of such briefings daily. **Please provide a brief narrative of the following topics as applicable to the Project**

Scope of Work	SITE-SPECIFIC TRAINING, HEALTH and SAFETY BRIEFING, INSTALL GEOPHYSICAL PROVE-OUT
HASP/JSA/THA review	INTRUSIVE INVESTIGATION AHA
SOP Review	
PPE Requirements	MODIFIED LEVEL D
Incident Review Safety Alerts	
Other:	

Personnel Sign-in List

Printed Name and Company	Signature	Printed Name and Company	Signature
1. David Taylor	David Taylor	7. M.M. Guzman AECOM	
2. CHRIS BUCKMAN	Chris Buckman	8. Gary Sullenberger AECOM	Gary Sullenberger
3. Eric Celebrezze	Eric Celebrezze	9. Robert Back AECOM	
4. Beau Vasalenchuc	Beau Vasalenchuc	10. STEVEN KAHALEWAI AECOM	
5. Jed Scott	Jed Scott	11. NORM BULLOCK AECOM	Norm Bullock
6. DAN MCKINNON	Dan McKinnon	12. Scotty Cook AECOM	Scotty Cook
~~7.~~		13. Hank Frankl AECOM	Hank Frankl
		14. RON VANDERFORD AECOM	R. Vanderford

SIGNATURE PAGE

By signing below, the undersigned acknowledges that he/she has read and reviewed the APP for the field activities at former MCAS El Toro in Irvine, California. The undersigned also acknowledges that he/she has been instructed in the contents of this document and understands the information pertaining to the specified work, and will comply with the provisions contained therein.

Print Name	Signature	Organization	Date
David Taylor	David Taylor	AECOM	5-18-10
Chris Brennan	[illegible]	AECOM	5/18/10
Eric Celebrezze	Eric [illegible]	AECOM	5/18/10
Dean Hausdenschild	[illegible]	AECOM	5/18/10
Jed Scott	[illegible]	AECOM	5/18/10
DAN McKINNON	[illegible]	AECOM	5/18/10
M. Martin Guzman	[illegible]	AECOM	5/18/10
Cory Sullenberger	[illegible]	AECOM	5/18/10
Robert Bach	[illegible]	AECOM	5/18/10
Steve Kitalewo	[illegible]	AECOM	5/18/10
NOAH BULLOCK	[illegible]	AECOM	5/18/10
Scotty Cook	[illegible]	AECOM	5/18/10
Frank Hack	[illegible]	AECOM	5/18/10
RON VANDERFORD	R. Vanderford	AECOM	5/18/10
CHRIS CAVERS	[illegible]	AECOM	5/18/10

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
Hack, Frank	Feb 1986	Mar 1999	May 22, 2011	May 21, 2011	FA- Nov 2010 CPR- Nov 2012	Sr. UXO Supervisor
Vanderford, William	Nov 1983	Feb 1994	May 31, 2011	May 20, 2011	CPR/FA May 2010	QC/Safety
Cook, Scotty	Feb 17, 1995	Oct 2008	May 13, 2011	Aug 20, 2010	N/A	Tech II
Scott, Jedediah	Oct 2002	Dec 2004	Feb 17, 2011	Feb 17, 2011	N/A	Tech II
Kahakua, Steve	Jul 21, 2006	Jul 27, 2006	Oct 14, 2010	Oct 16, 2010	N/A	Tech II
McKinnon, Dan	Apr 02, 1991	Jun 4, 2005	Jan 06, 2011	May 14, 2011	N/A	Tech III
Taylor, David	Jun 3, 1988	Jan 12, 1994	May 14, 2011	May 13, 2011	N/A	Tech III
Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
Guzman, Martin	Feb 11, 2003	Jul 12, 2004	Oct 15, 2010	Mar 12, 2011	N/A	Tech II
Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE PREPARATION

REPORT NO: 3

DATE: 5/18/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site preparation 4. Insure site facilities are set-up according to Project Plans	
Equipment to be used for task performance Work and Safety Plans, equipment inventory, field trailer, Type II magazines, radios/cell phones, geophysical equipment, blind seeds (Pipe nipples: 5ea ½”x3”, 2ea 2”x10”, 2ea 1”x4”)	**Personnel** Team Designation: Personnel Assigned:
Remarks: Outstanding actions are lack of an operating schedule for a subcontractor to mow the site. *Awaiting receipt of tri levels for Trimble base station * Shortages identified as missing White battery packs and the need to replace one defective Shonstedt.	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____5/18/10_____

Quality Control Specialist

SITE PREPARATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY LOCAL AGENCY COORDINATION PROCEDURES ARE IN PLACE	Y	Coordination with local agencies and stakeholders established
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	Call 911 and coordinate with on-site emergency team
VERIFY OPERATING SCHEDULES ARE FINIALIZED	N	Unknown schedule for vegetation trimming
ENSURE SECURE STORAGE FOR EQUIPMENT IS PLANNED	Y	Field trailer
VERIFY INITIAL SITE SPECIFIC TRAINING IS PERFORMED	Y	Site familiarization and AHA review
VERIFY THAT SECURE STORAGE FOR EQUIPMENT	Y	Field trailer
VERIFY EXPLOSIVE STORAGE AND PROCESSING AREAS ARE IDENTIFIED IAW WITH EXPLOSIVE SAFETY SUBMISSION PLAN	Y	3 each Type II magazines located within the fenced Installation Restoration Program (IRP) Site 1 property
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Y	
ENSURE RECEIPT AND STORAGE PROCEDURES IN PLACE TO COMPLY WITH ATF GUIDANCE	Y	ATF license, explosive procurement letter (SUXO F. Hack for Murphy Explosives)
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY VEHICLES ARE RECIEPT INSPECTED	Y	
VERIFY THAT MOBILIZATION OF EQUIPMENT AND PLACEMENT IAW PROJECT PLANS	Y	*See remarks
VERIFY RECEIPT GEOPHYSICAL EQUIPMENT IS IAW PROJECT PLANS	Y	* See remarks
VERIFY THAT EQUIP IS CALIBRATED OR CHECKED DURING RECEIPT	Y	
VERIFY LICENSED LAND SURVEYOR WILL INSTALL THE GRID SYSTEM	N/A	Grid system re-installed by GEO
VERIFY TEST SECTOR LOCATIONS ARE SELECTED IAW PLAN	Y	
VERIFY TEST SECTOR LAYOUT IS IAW PROJECT PLANS	Y	
VERIFY SECTOR LAY-OUT IAW FIELD SAMPLING PLAN	Y	
VERIFY TEST SECTOR BLIND SEED ITEMS ARE PROPERLY PLACED.	Y	* See notes in E. Celebrezze's notebook and pics for placement and depth
VERIFY PROCEDURES FOR DAILY EQUIP FUNCTION CHECKS TO BE PERFORMED AND RECORDED	Y	
VERIFY PLANS FOR ESTABISHING EXCLUSION ZONES ARE ESTABLISHED IAW SSHP	Y	(20mm Haz frag dist) 61 ft. (20mm Max frag range) 558 ft.
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	

Approved by: _____ Date _5/18/10__

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

SITE PREPARATION

REPORT NO: 4

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during site preparation
4. Insure site facilities are set-up according to Project Plans

Equipment to be used for task performance	**Personnel**
Geophysical equipment, GPS equipment, lathe, Certification spreadsheet.	Team Designation: AECOM field mgmt., UXO Teams 1 & 2, GEO Personnel Assigned: see team roster

Remarks: Completed Action Items - personnel certifications complete. White battery packs complete. AECOM will mobilize personnel on 5/24 to mow the site on 5/25. Incomplete Action Items - replace one White arm cuff (metal) & one Schonstedt. Recover Trimble tri-level & Trimble rover unit lost by FedEx.
Conducted meeting for preparatory/initial on mobilization, site prep, and intrusive investigation. Prepared preparatory/initial for Site Survey, Intrusive, & MPPEH processing.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___5/19/10_____

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

SITE PREPARATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM PREPARATORY PHASE STEPS ARE COMPLETED	Y	*See Remarks for complete/incomplete action items
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES	Y	
VERIFY LOCAL AGENCY COORDINATION	Y	
VERIFY SECURE STORAGE FOR EQUIPMENT	Y	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY EXPLOSIVE STORAGE AND PROCESSING AREAS ARE SET-UP IAW WITH EXPLOSIVE SAFETY SUBMISSION	Y	Three each Type II magazines
VERIFY EXPLOSIVE STORAGE IS ACCOMPLISHED IAW ATF GUIDANCE	Y	Guidance also from OP-5
VERIFY VEHICLES ARE INSPECTED	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS IN PLACE IAW PROJECT PLANS	N	*see Remarks (must recover lost tri-level and rover unit)
VERIFY THAT EQUIP IS CALIBRATED TESTED UPON RECEIPT	Y	
VERIFY LICENSED LAND SURVEYOR HAS INSTALLED THE GRID SYSTEM	N/A	Grid being re-installed by GEO using prior GPS points
VERIFY TEST SECTOR LOCATIONS ARE SELECTED IAW PLAN	Y	
VERIFY TEST SECTOR LAYOUT IS IAW PROJECT PLANS	Y	
VERIFY SECTOR LAY-OUT IAW FIELD SAMPLING PLAN	Y	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Y	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	
VERIFY HAND HELD GEOPHYSICAL INTRUMENTS ARE CHECKED ON TEST AREA	Y	Daily checks of White/Schondstedts

Approved by: _____ Date _5/19/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE SURVEY

REPORT NO: 5

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during site survey preparation

Equipment to be used for task performance	**Personnel**
Digital geophysical equipment: Trimble base station Trimble rover unit Schonstedt (for escort)	Team Designation: GEO Personnel Assigned: Eric Celebrezze, Chris Buckman UXO Escort Dan McKinnon

Remarks: UXO Escort will sweep grid stake & boundary marker positions before lathe is installed and provide general ordnance avoidance for the GEO crew while traversing the site.

*Awaiting delivery of one Trimble tri-level (FedEx) and replacement of one defective Shonstedt

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___5/19/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	*Awaiting one Trimble tri-level & rover unit (FedEx)
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Y	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS WILL BE PLOTTED ON FIELD MAPS	Y	
ENSURE SURVEY PARTY WILL ESCORTED BY A UXO TECHNICIAN	Y	
VERIFY THAT GRID CORNERS WILL BE PLOTTED ON FIELD MAPS	Y	
VERIFY THAT THE GRID SYSTEMS WILL BE SURVEYED IN BY LICENSED SURVEYOR.	N/A	Grid re-installed by GEO using prior GPS points

Approved by: _____ Date _5/19/10___

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

SITE SURVEY

REPORT NO: 6

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during site survey preparation	
Equipment to be used for task performance Digital geophysical equipment: Trimble base station Trimble rover unit Schonstedt	**Personnel** Team Designation: GEO Personnel Assigned: Eric Celebrezze, Chris Buckman
Remarks: GEO provided a temporary fix for the missing Trimble tri-level using parts acquired from Home Depot. Base station setup is complete and positioning for Trimble rover units confirmed. *Awaiting delivery of one rover unit from FedEx. Accomplished surveillance of GEO prep work (check equipment in test plot) and surveillance of GEO team reacquiring 95 anomaly points. Points are being flagged by GEO for UXO team reacquire.	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___5/19/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	*See remarks
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Y	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS WILL BE PLOTTED ON FIELD MAPS	Y	In progress – expected completion date is 5/21/10
ENSURE SURVEY PARTY WILL ESCORTED BY A UXO TECHNICIAN	Y	
VERIFY THAT GRID CORNERS WILL BE PLOTTED ON FIELD MAPS	Y	In progress – expected completion date is 5/21/10
VERIFY THAT THE GRID SYSTEMS WILL BE SURVEYED IN BY LICENSED SURVEYOR.	N/A	Grid re-installed by GEO using prior GPS points

Approved by: _____ Date _5/19/10__

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 7

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation preparation

Equipment to be used for task performance	**Personnel**
Work Plan, Accident Prevention Plan, Dig sheets UXO Team equipment (Level D PPE, magnetometers, radios, guidelines, digging tools, buckets) Vehicles GPS equipment (Trimble base station & rover units) Geophysical Equipment (magnetometers) Sandbags	Team Designation: UXO Teams 1 & 2 Personnel Assigned: Refer to UXO Team Roster

Remarks:
Received one electric golf cart type vehicle to shuttle personnel and equipment. Direct access to site by normal vehicles not possible due to fencing and washouts from soil erosion.

Explosives delivery is arranged for 5/20/10
*Awaiting replacement for defective Schonstedt.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___5/19/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	See Work Plan sign in sheet
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certifications spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	*See remarks
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Y	
VERIFY THAT THE GRID SYSTEMS HAS BEEN SURVEYED IN BY LICENSED SURVEYOR.	N/A	Grid re-installed by GEO using prior GPS points
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIFY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE PRIMARY MGFD	Y	MGFD is 598 ft. frag distance (20mm projectile) Safe separation for UXO Teams is 61 feet
VERIFY THE TEAM LEADER WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS DESIGNED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
EXPLOSIVE STORAGE TYPE II MAGAZINES ON SITE	Y	Three each & sited according to ESS
EXPLOSIVES ON HAND TO SUPPORT OPERATION	Y	Explosive shipment due tomorrow (5/20/10)
ENSURE MINIATURE OPEN-FRONT BARRICADE (MOFD) AVAIABLE	Y	Sandbags and/or traffic monitoring will be used. MOFD is available from Colton, CA office if needed
ENSURE SANDBAGS ARE AVAILABLE AS AN ENGINEERING CONTROL	Y	

Approved by: Date _5/19/10__
UXO Quality Assurance Manager

AECOM
WORK PLAN SIGN-IN SHEET

Date: 5/19/2010 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

Work plan review

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. Ron Vanderford	21.
2. Eric Celebrezze	22.
3. Rick Swaim	23.
4. Chris Bergman	24.
5. Gary Sullenberger	25.
6. M. Martin Guzman	26.
7. Noah Bullock	27.
8. Gerardo Peña	28.
9. Frank Cota	29.
10. Steve Kahakua	30.
11. Scott Cook	31.
12. Dean Haseknecht	32.
13. David Taylor	33.
14. Robert Back	34.
15. Dan McKinnon	35.
16. Frank Hack	36.
17. Jed Scott	37.
18. M. Martin Guzman	38.
19.	39.
20.	40.

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
Hack, Frank	Feb 1986	Mar 1999	May 22, 2011	May 21, 2011	FA- Nov 2010 CPR- Nov 2012	Sr. UXO Supervisor
Vanderford, William	Nov 1983	Feb 1994	May 31, 2011	May 20, 2011	CPR/FA May 2010	QC/Safety
Cook, Scotty	Feb 17, 1995	Oct 2008	May 13, 2011	Aug 20, 2010	N/A	Tech II
Scott, Jedediah	Oct 2002	Dec 2004	Feb 17, 2011	Feb 17, 2011	N/A	Tech II
Kahakua, Steve	Jul 21, 2006	Jul 27, 2006	Oct 14, 2010	Oct 16, 2010	N/A	Tech II
McKinnon, Dan	Apr 02, 1991	Jun 4, 2005	Jan 06, 2011	May 14, 2011	N/A	Tech III
Taylor, David	Jun 3, 1988	Jan 12, 1994	May 14, 2011	May 13, 2011	N/A	Tech III
Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
Guzman, Martin	Feb 11, 2003	Jul 12, 2004	Oct 15, 2010	Mar 12, 2011	N/A	Tech II
Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

REPORT NO: 8

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during initial intrusive investigation

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles Tyvek & booties for poison oak areas Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: Refer to UXO Team Roster

Remarks:
Received one electric golf cart type vehicle to shuttle personnel and equipment. Direct access to site by normal vehicles not possible due to fencing and washouts from soil erosion.

*Awaiting replacement for defective Schonstedt

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 5/19/10

Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	* See remarks
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	Verified with GEO logbook
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	MGFD is 598 ft. frag distance (20mm projectile) Safe separation for UXO Teams is 61 feet
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	UXO Teams excavating to side of detected anomalies Verified by direct QC surveillance
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	See personnel certification spreadsheet
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	Reviewed daily by Site Supervisor, SUXO, and QC/Safety
ENSURE THAT GUIDELINES WILLL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	Anomaly investigation holes cleared Verified by direct QC surveillance
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	Verified by Tech II and UXO Team Leader
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	UXO Teams remove all equipment daily

Approved by: _____ ____ Date _5/19/10___

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH PROCESSING

REPORT NO: 9

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MPPEH processing preparation

Equipment to be used for task performance	**Personnel**
Work Plan, ESS, SOP 2-19, Dig sheets & logbooks Team equipment (Level D PPE, magnetometers, radios, guidelines, buckets, digging tools) Vehicle Digital camera and dry erase board **Containers for MDAS Type II magazines	Team Designation: UXO Team 1 & 2 Personnel Assigned: SUXO Frank Hack UXO Team Leaders Dave Taylor, Robert Back

Remarks:
**Containers for MDAS material due to be delivered on 5/20/10. MPPEH locker (Type II magazine) will house MDAS material until containers are received.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 5/19/10

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	See Work Plan sign in sheet
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Y	See SOP 2-19 sign in sheet
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
CONFIRM SUXOS WILL SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENTS	Y	
CONFIRM UXO TECHNICIAN III WILL SUPERVISE THE MPPEH PROCESSING TASK	Y	Supervision by SUXO Frank Hack and UXO Team leaders
VERIFY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Y	MGFD is 598 ft. frag distance (20mm projectile) Safe separation for UXO Teams is 61 feet
VERIFY THE TEAM SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MPPEH WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
ENSURE PERSONNEL HANDLING MPPEH HAS APPROPRIATE PPE	Y	Level D PPE
ENSURE LOCKABLE CONTAINERS ARE PRESENT ON SITE TO STORE MDAS.	Y	**Containers due to be delivered by Timberline on 5/20/10
VERIFY CHAIN OF CUSTODY PROCESS	Y	Dig sheet, Team Leader logbook, Pictures of recovered material on dry erase board that lists item information
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE WILL BE EQUIPPED TO TRANSPORT MPPEH	Y	

Approved by: _____ __ Date _5/19/10__

UXO Quality Assurance Manager

AECOM
WORK PLAN SIGN-IN SHEET

Date: 5/19/2010 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

Work plan review

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. Ron Vanderford	21.
2. Eric Celebrezze	22.
3. Rick Swaim	23.
4. Chris Bergman	24.
5. Gary Sullenberger	25.
6. M. Martin Guzman	26.
7. Noah Bullock	27.
8. Gerardo Peña	28.
9. Frank Cota	29.
10. Steve Kahakua	30.
11. Scott Cook	31.
12. Dean Haseknecht	32.
13. David Taylor	33.
14. Robert Back	34.
15. Dan McKinnon	35.
16. Frank Hack	36.
17. Jed Scott	37.
18. M. Martin Guzman	38.
19.	39.
20.	40.

AECOM
SOP 2-19 SIGN-IN SHEET

Date: 5/20/10 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

SOP 2-19 review (MPPEH Inspection & Disposition)

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. RON VANDERFORD	21.
2. Frank Hack	22.
3. Scotty Cook	23.
4. David Taylor	24.
5. [illegible]	25.
6. DAN MCKINNON	26.
7. Jon SCOTT	27.
8. Cory Sullenberger	28.
9. NOAH BULLOCK	29.
10. M. Martin Guzman	30.
11. R Back	31.
12. [illegible]	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
Hack, Frank	Feb 1986	Mar 1999	May 22, 2011	May 21, 2011	FA- Nov 2010 CPR- Nov 2012	Sr. UXO Supervisor
Vanderford, William	Nov 1983	Feb 1994	May 31, 2011	May 20, 2011	CPR/FA May 2010	QC/Safety
Cook, Scotty	Feb 17, 1995	Oct 2008	May 13, 2011	Aug 20, 2010	N/A	Tech II
Scott, Jedediah	Oct 2002	Dec 2004	Feb 17, 2011	Feb 17, 2011	N/A	Tech II
Kahakua, Steve	Jul 21, 2006	Jul 27, 2006	Oct 14, 2010	Oct 16, 2010	N/A	Tech II
McKinnon, Dan	Apr 02, 1991	Jun 4, 2005	Jan 06, 2011	May 14, 2011	N/A	Tech III
Taylor, David	Jun 3, 1988	Jan 12, 1994	May 14, 2011	May 13, 2011	N/A	Tech III
Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
Guzman, Martin	Feb 11, 2003	Jul 12, 2004	Oct 15, 2010	Mar 12, 2011	N/A	Tech II
Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH PROCESSING

REPORT NO: 10

DATE: 5/19/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MPPEH processing preparation

Equipment to be used for task performance	**Personnel**
Work Plan, ESS, SOP 2-19, Dig sheets & logbooks Team equipment (Level D PPE, magnetometers, radios, guidelines, buckets, digging tools) Vehicle Digital camera and dry erase board Containers for MDAS** Type II magazines	Team Designation: UXO Team 1 Personnel Assigned: SUXO Frank Hack UXO Team Leaders Dave Taylor, Robert Back

Remarks:
**Containers for MDAS material due to be delivered on 5/20/10. MPPEH locker (Type II magazine) will house MDAS material until containers are received.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 5/19/10

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	See Work Plan sign in sheet
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Y	See SOP 2-19 sign in sheet
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
CONFIRM SUXOS WILL SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENTS	Y	
CONFIRM UXO TECHNICIAN III WILL SUPERVISE THE MPPEH PROCESSING TASK	Y	Supervised by SUXO Frank Hack and UXO Team leaders
VERIFY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Y	MGFD is 598 ft. frag distance (20mm projectile) Safe separation for UXO Teams is 61 feet
VERIFY THE TEAM SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MPPEH WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
ENSURE PERSONNEL HANDLING MPPEH HAS APPROPRIATE PPE	Y	Level D PPE
ENSURE LOCKABLE CONTAINERS ARE PRESENT ON SITE TO STORE MDAS.	Y	**Containers due to be delivered by Timberline on 5/20/10
VERIFY CHAIN OF CUSTODY PROCESS	Y	Dig sheet, Team Leader logbook, Pictures of recovered material on dry erase board that lists item information
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE WILL BE EQUIPPED TO TRANSPORT MPPEH	Y	

Approved by: _____ Date _5/19/10___

UXO Quality Assurance Manager

AECOM
WORK PLAN SIGN-IN SHEET

Date: 5/19/2010 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

Work plan review

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. Ron Vanderford	21.
2. Eric Celebrezze	22.
3. Rick Swaim	23.
4. Chris Bergman	24.
5. Gary Sullenberger	25.
6. M. Martin Guzman	26.
7. Noah Bullock	27.
8. Gerardo Peña	28.
9. Frank Cota	29.
10. Steve Kahakua	30.
11. Scott Cook	31.
12. Dean Haseknecht	32.
13. David Taylor	33.
14. Robert Back	34.
15. Dan McKinnon	35.
16. Frank Hack	36.
17. Jed Scott	37.
18. M. Martin Guzman	38.
19.	39.
20.	40.

AECOM
SOP 2-19 SIGN-IN SHEET

Date: 5/20/10 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

SOP 2-19 review (MPPEH Inspection & Disposition)

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. RON VANDERFORD	21.
2. Frank Hack	22.
3. Scotty Cook	23.
4. David Taylor	24.
5. [illegible]	25.
6. DAN MCKINNON	26.
7. Jon SCOTT	27.
8. Cory Sullenberger	28.
9. NOAH BULLOCK	29.
10. M. Martin Guzman	30.
11. R Back	31.
12. [illegible]	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

VEGETATION TRIMMING

REPORT NO: 11

DATE: 5/25/10

TASK ORDER NO: 032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance Bobcat with mower attachment & impact resistant windshield* Level D PPE	**Personnel** Team Designation: Brush crew Personnel Assigned: AECOM brush personnel UXO escort
Remarks: *Chaps, face shields, gloves, boots where applicable	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____5/25/10_____

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY VEHICLES INSPECTION PROCEDURES ARE IN PLACE	Y	
VERIFY EQUIPMENT INSPECTION PROCEDURES ARE IN PLACE	Y	Mower, Chain saw, Weed Eater
VERIFY EQUIPMENT GUARDS ARE IN PLACE WHERE APPROPRIATE	Y	Mower, Chain saw, Weed Eater
ENSURE BRUSH CLEARANCE TEAM WILL ESCORTED BY UXO TECHNICAN	Y	
VERIFY THAT PERSONNEL HAVE PROPER PRESONNEL PROTECTIVE EQUIPMENT AVAILABLE	Y	Level D (Chaps, face shields, gloves, boots where applicable)
ENSURE PROCEDURES FOR EQUIPPING MOTORIZED EQUIPMENT WITH FIRE EXTINGUISHER AND FIRST AID KITS	Y	
VERIFY EXCLUSION ZONES AND SITE CONTROL PROCEDURES ARE IN PLACE IAW SSHP	Y	MSD for essential personnel
VERIFY PROCEDURES FOR LOCAL AGENCY NOTIFICATION ARE IN PLACE IAW SSHP	Y	
VERIFY REFUELING PRECAUTIONS ARE IN PLACE	Y	Select re-fuel position, approved containers
VERIFY THAT SITE CONTROL PROCEDURES ARE IN PLACE DURING MECHANIZED BRUSH CUTTING OPERATIONS	Y	

Approved by: _____ Date _5/25/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

VEGETATION TRIMMING

REPORT NO: 12

DATE: 5/25/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while preparing vegetation equipment for operation	
Equipment to be used for task performance	**Personnel**
Bobcat with mower attachment & impact resistant windshield* Level D PPE	Team Designation: Brush Crew Personnel Assigned: AECOM brush personnel UXO escort
Remarks: *Chaps, face shields, gloves, boots where applicable. Mowing to commence after authorization from Navy RPM/Fish & Wildlife (pending)	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 5/25/10

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
CONFIRM PREPARATORY STEPS HAVE BEEN COMPLETED	Y	
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY VEHICLES ARE INSPECTED	Y	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Y	Mower, Chain saw, Weed Eater
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Y	Mower, Chain saw, Weed Eater
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Y	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Y	Level D (Chaps, face shields, gloves, boots where applicable)
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Y	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Y	MSD for essential personnel
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Y	Select re-fuel position, approved containers
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Y	

Approved by: _____ Date _5/25/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 13

DATE: 5/24/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks: UXO TM 1 & 2 begin mag/flag activities. (TM 1 – grid 1 & 2, TM 2 – grid 13). TM 1 recovers QC seed #3 & QA seed 7 inside of grid 1, and QC seed #21 in grid 2. TM 2 recovers QC QA seed #4.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____5/24/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _5/24/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
Hack, Frank	Feb 1986	Mar 1999	May 22, 2011	May 21, 2011	FA- Nov 2010 CPR- Nov 2012	Sr. UXO Supervisor
Vanderford, William	Nov 1983	Feb 1994	May 31, 2011	May 20, 2011	CPR/FA May 2010	QC/Safety
Cook, Scotty	Feb 17, 1995	Oct 2008	May 13, 2011	Aug 20, 2010	N/A	Tech II
Scott, Jedediah	Oct 2002	Dec 2004	Feb 17, 2011	Feb 17, 2011	N/A	Tech II
Kahakua, Steve	Jul 21, 2006	Jul 27, 2006	Oct 14, 2010	Oct 16, 2010	N/A	Tech II
McKinnon, Dan	Apr 02, 1991	Jun 4, 2005	Jan 06, 2011	May 14, 2011	N/A	Tech III
Taylor, David	Jun 3, 1988	Jan 12, 1994	May 14, 2011	May 13, 2011	N/A	Tech III
Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
Guzman, Martin	Feb 11, 2003	Jul 12, 2004	Oct 15, 2010	Mar 12, 2011	N/A	Tech II
Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW ON PHASE

SITE SURVEY

REPORT NO: 14

DATE: 5/25/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during site survey preparation

Equipment to be used for task performance	**Personnel**
Digital geophysical equipment: Trimble base station Trimble rover unit Schonstedt	Team Designation: GEO Personnel Assigned: Eric Celebrezze, Chris Buckman

Remarks:
*Trimble tri-level and rover unit recovered from FedEx. Grid boundary points accomplished on 5/21/10.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ___5/25/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW ON PHASE

SITE SURVEY

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	*See remarks
VERIFY THAT GEOPHYSICAL CHECK WILL BE PERFORMEND ON TEST STRIP AND RECORDED	Y	
VERIFY THAT ALL KNOWN SURVEY BENCHMARKS WILL BE PLOTTED ON FIELD MAPS	Y	Completion date is 5/21/10
ENSURE SURVEY PARTY WILL ESCORTED BY A UXO TECHNICIAN	Y	
VERIFY THAT GRID CORNERS WILL BE PLOTTED ON FIELD MAPS	Y	Completion date is 5/21/10
VERIFY THAT THE GRID SYSTEMS WILL BE SURVEYED IN BY LICENSED SURVEYOR.	N/A	Grid re-installed by GEO using prior GPS points

Approved by: _____ Date _6/2/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

REPORT NO: 15

DATE: 5/27/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MPPEH processing preparation
4. Safe to move MEC/MPPEH transported by hand/vehicle to storage
5. MEC/MPPEH items documented

Equipment to be used for task performance	**Personnel**
Work Plan, ESS, SOP 2-19, Dig sheets & logbooks Team equipment (Level D PPE, magnetometers, radios, guidelines, buckets, digging tools) Vehicle Digital camera and dry erase board Containers for MDAS Type II magazines	Team Designation: UXO Teams 1 & 2 Personnel Assigned: SUXO Frank Hack UXO Team Leaders Dave Taylor, Robert Back

Remarks:
Containers for MDAS material delivered on 5/20/10.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 5/27/10

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH PROCESSING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Y	See SOP 2-19 sign in sheet
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES ARE IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH ASSESSMENT	Y	
CONFIRM UXO TECHNICIAL III SUPERVISED THE MPPEH PROCESSING TASK	Y	Supervised by SUXO Frank Hack and UXO Team leaders
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Y	MGFD is 598 ft. frag distance (20mm projectile) Safe separation for UXO Teams is 61 feet
VERIFY THE TEAM SUPERVISOR SUPERVISE DTHE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MPPEH IS ONLY BEING HANDLED BY UXO QUALIFIED PERSONNEL	Y	See personnel certification spreadsheet
ENSURE PERSONNEL HANDLING MPPEH IS WEARING APPROPRIATE PPE	Y	Level D PPE (except for poison oak areas)
ENSURE LOCKABLE CONTAINERS ARE USED TO STORE MDAS.	Y	Containers delivered by Timberline on 5/20/10
VERIFY CHAIN OF CUSTODY PROCESS IS BEING USED	Y	Dig sheet, Team Leader logbook, Pictures of recovered material on dry erase board that lists item information
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE ARE EQUIPPED TO TRANSPORT MPPEH	Y	

Approved by: _____ Date _5/27/10____

UXO Quality Assurance Manager

AECOM
SOP 2-19 SIGN-IN SHEET

Date: 5/20/10 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

SOP 2-19 review (MPPEH Inspection & Disposition)

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. RON VANDERFORD	21.
2. Frank Hack	22.
3. Scotty Cook	23.
4. David Taylor	24.
5. [illegible]	25.
6. DAN MCKINNON	26.
7. Jon SCOTT	27.
8. Cory Sullenberger	28.
9. NOAH BULLOCK	29.
10. M. Martin Guzman	30.
11. R Back	31.
12. [illegible]	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
Hack, Frank	Feb 1986	Mar 1999	May 22, 2011	May 21, 2011	FA- Nov 2010 CPR- Nov 2012	Sr. UXO Supervisor
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Cook, Scotty	Feb 17, 1995	Oct 2008	May 13, 2011	Aug 20, 2010	N/A	Tech II
Scott, Jedediah	Oct 2002	Dec 2004	Feb 17, 2011	Feb 17, 2011	N/A	Tech II
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Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
Guzman, Martin	Feb 11, 2003	Jul 12, 2004	Oct 15, 2010	Mar 12, 2011	N/A	Tech II
Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 16

DATE: 5/28/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks: Track came off of mower. Personnel were able to replace the track so the vehicle could be moved for the mechanic to service. UXO TM 1 recovers QC #28 – grid 6 and seed #10 – grid 7, UXO TM2 recovers seed #18 – grid 21. Surveillance of UXO TMs: no discrepancies noted.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____5/28/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _5/28/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

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Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
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Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 17

DATE: 6/01/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks: QC of grids 6 & 7. Grid 6 passed but grid 7 failed due to discovery of a 20mm AP round by QC during 25% check (GPS coordinates – Easting 6122863.979 Northing 2197475.944). UXO TM 2 completes grids 22 & 23 (recovered QC seeds #20 and #13). UXO TM 1 completes grids 11 & 15 (recovered QC seeds #12 and #17).
Grid failure requires a Quality Deficiency Notice (see QDN ET II – 01 for corrective actions)

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/01/10_____
Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/1/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

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Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
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Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

REPORT NO: 18

DATE: 6/02/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team while conducting vegetation trimming	
Equipment to be used for task performance	**Personnel**
Bobcat with mower attachment & impact resistant windshield* Level D PPE	Team Designation: Brush Crew Personnel Assigned: AECOM brush personnel UXO escort
Remarks: Mower did a marginal job of cutting down the vegetation and left rows of vegetation on the grids.	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 6/02/10

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VEGETATION TRIMMING

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY TAILGATE SAFETY BRIEFING IS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY VEHICLES ARE INSPECTED	Y	
VERIFY EQUIPMENT IS INSPECTED PRIOR TO USE	Y	Mower, Chain saw, Weed Eater
VERIFY GUARDS ARE IN PLACE WHERE APPROPRIATE	Y	Mower, Chain saw, Weed Eater
ENSURE BRUSH CLEARANCE TEAM IS ESCORTED BY UXO TECHNICAN	Y	
VERIFY THAT PERSONNEL HAVE PROPER PERSONNEL PROTECTIVE EQUIPMENT (PPE)	Y	Level D (Chaps, face shields, gloves, boots where applicable)
VERIFY EQUIPMENT IS EQUIPPED WITH FIRE EXTINGUISHER AND FIRST AID KITS	Y	
VERIFY EXCLUSION ZONE ESTABLISHED IAW SSHP	Y	MSD for essential personnel
VERIFY LOCAL AGENCY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	
VERIFY COMPLIANCE WITH REFUELING PERCAUTIONS	Y	Select re-fuel position, approved containers
VERIFY THAT NON-ESSENTIAL ARE EVACUTED FROM AREA OF MECHANIZED BRUSH CUTTING OPERATIONS	Y	

Approved by: _____ Date _6/2/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 19

DATE: 6/02/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during intrusive investigation tasks	
Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster
Remarks: Remarks: QC of grids 11, 15, 22, 23, & 19. All pass. QC re-check of grid 7 (see QDN ET II – 01). Grid 7 passes. No QC/QA seeds were recovered today. Corrective actions for QDN ET II - 01	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/02/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/2/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

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Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

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Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 20

DATE: 6/03/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks: UXO TM 1 recovered QA seed #5 in grid 10. UXO TM 2 completed grid 24 & recovered QC seed #15, completed grid 32 and recovered seed #26, completed grid 28 and recovered QC seed#14/QA seed #2. Quality Deficiency Notice (QDN El Toro II – 01) emailed out.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/03/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/03/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
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Back, Robert	May 26, 1989	Sept 4, 1992	Dec 05, 2010	May 11, 2011	N/A	Tech III
Buckman, Chris	N/A	Unknown	March 19, 2010	Unknown	N/A	Geophysicist
Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
Celebrezze, Eric	N/A	Unknown	Feb 03, 2011	Mar 31, 2011	N/A	Geophysicist
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Houseknecht, Dean	Feb 20, 2004	Jan, 2004	Nov 25, 2010	May12, 2011	N/A	Tech II
Sullenberger, Cory	Oct 01, 2004	Mar 19, 2007	Jan 07, 2011	Jan 08, 2011	N/A	Tech II
Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 21

DATE: 6/04/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1. Checked personnel qualifications 2. Reviewed Work and Safety Plans 3. Observed team during intrusive investigation tasks	
Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster
Remarks: UXO TM 1 recovered QC seed #16 in grid 10. UXO TM 2 completed grid 29 & recovered QC seed #9. QC of grids 24, 28, 29, and grid 32 – all passed.	

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/04/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/4/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
Tech III (blaster) – Dan McKinnon (demob 6/5/10)
Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

NAME	EOD CERT/UXO 1	40 HOUR Initial	8 HOUR Refresher Expires	MEDICAL EXPIRES	First Aid CPR Expires	Position
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Bullock, Noah	Mar 22, 2002	May 9, 2008	May 14, 2011	May 13, 2011	N/A	Tech II
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Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 22

DATE: 6/07/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks:
UXO TM recovered QC seed #22 and QA seed #1 in grid 30, QC seed #25 in grid 31. Grids 9 & 30 complete. 25% QC sweep of grids 26, 27, 9 & 10 – grids pass. All QC/QA blinds seeds now recovered.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/07/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/7/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
Tech II – Scotty Cook
Tech II – Dean Houseknecht
Tech II – Steve Kahakua (demob 6/5/10)
Tech II – Jed Scott (demob to Blythe on 6/8/10)

UXO Team 2:

Team leader – Robert (Bob) Back (demob 6/8/10)
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Tech II – Martin Guzman (demob 6/8/10)
Tech II – Cory Sullenberger (demob 6/5/10)
Tech II – Noah Bullock (demob 6/5/10)

GEO

Eric Celebrezze
Chris Buckman

Personnel Certifications Table – El Toro Second Phase TCRA

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Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION
FOLLOW ON

REPORT NO: 23

DATE: 6/08/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during intrusive investigation tasks

Equipment to be used for task performance	**Personnel**
Work plan, ESS, Accident Prevention Plan Team equipment (guidelines, radios, magnetometers, digging tools) Vehicles, Tyvek & booties for poison oak areas. Decon equipment – wash pan, trash bags, scrub brush, non-phosphate detergent	Team Designation: UXO Teams 1 & 2 Personnel Assigned: See Team Roster

Remarks:
UXO TM completes grids 31 and 33. 25% QC of grids 30, 31, 33 – all pass. All grids now QC and QA passed.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/08/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

INTRUSIVE INVESTIGATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WAS CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	See personnel certification spreadsheet
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY THAT GEOPHYSICAL CHECK IS PERFORMEND ON TEST STRIP AND RECORDED	Y	
CONFIRM THE TEAM HAS LOADED OUT THE NECESSARY EQUIPMENT FOR THE TASK	Y	
CONFIRM THE MUNITION WITH THE GREATEST FRAGMENTATION DISTANCE	Y	20mm projectile
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON MGFD	Y	
WERE APPROVED PROCEDURES FOR REMOVING OVERBURDEN FROM THE ANOMALY FOLLOWED	Y	
VERIFY THAT THE MEC IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
VERIFY DIG SHEET IS USED TO CAPTURE REQUIRED DATA	Y	
ENSURE THAT GUIDELINES WILL BE USED TO MAKE SEARCH LANES DETEMINED BY SUXOS	Y	
CONFIRM ANOMALLY INVESTIGATION IDENTIFY THE SOURCEOF THE ANOMALY	Y	
ENSURE THE DETERMINATION A RECOVERED MEC IS SAFE TO MOVE OR MUST BE BLOWN-IN-PLACE	Y	MEC is verified with UXO Team leader and Tech II
WERE APPROVED SITE CLEANUP PROCEDURES FOLLOWED AT THE END OF EACH DAY'S CLEARANCE OPERATIONS	Y	

Approved by: _____ Date _6/8/10____

UXO Quality Assurance Manager

El Toro Second Phase Team Roster

Site Manager – Chris Cavers
SUXO – Frank Hack
QC/Safety – Ron Vanderford

UXO Team 1:

Team leader – Dave (Tex) Taylor (demob 6/4/10)
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GEO

Eric Celebrezze
Chris Buckman

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Dennis, Earl	Nov 1976	Feb 2003	Feb 21, 2011	Sept 28, 2010	Jun 25, 2011	Tech III
Cavers, Chris	N/A	June 5, 1997	Jan 19, 2011	May 10, 2011	CPR/FA April 27, 2012	Project Engineer/Site Safety Officer

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

MEC DISPOSITION

REPORT NO: 24

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp) Truck (explosives transport) Demo material (Pentex, det cord, lead in line, shotgun primers) Explosives placards Scorpion blasting machine	Team Designation: Demo Personnel Assigned: SUXO – Frank Hack Blaster – Earl Dennis QC/Safety – Ron Vanderford Demo – Dean Housknecht, Scotty Cook

Remarks: Review of AHA's and demo procedures, emergency routes

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 6/09/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP 2-14, MEC DEMOLITION OPS	Y	Please see SOP 2-14 sign in sheet.
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	Notifications made
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR	Y	Blaster: Earl Dennis
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT	Y	
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MEC WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
EXPLOSIVE STORAGE TYPE II MAGAZINES ON SITE	Y	
EXPLOSIVES ON HAND TO SUPPORT OPERATION	Y	
VERIFY ORDNANCE ACCOUNTABILITY LOG IS AVAILABLE	Y	
VERFIY DEMOLITION SHOT RECORD IS AVAILABLE	Y	
ENSURE SANDBAGS ARE AVAILABLE AS AN ENGINEERING CONTROL	N/A	Demolition shot to be tamped with earth
VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES	Y	
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE	Y	

Approved by: _____ Date _6/9/10____
UXO Quality Assurance Manager

AECOM
SOP 2-14 SIGN-IN SHEET

Date: 5/28/10 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: _____ Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

SOP 2-14 review (MEC Explosive Demolition Procedures)

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. R. Vanderford	21.
2. R. Bell	22.
3. Hank Hark	23.
4. Dan McC	24.
5. Mark Bullock	25.
6.	26.
7.	27.
8.	28.
9.	29.
10. M. Martin Guzman	30.
11. Dean Buschknecht	31.
12.	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

MEC DISPOSITION

REPORT NO: 25

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp) Truck (explosives transport) Demo material (Pentex, det cord, lead in line, shotgun primers) Explosives placards Scorpion blasting machine	Team Designation: Demo Personnel Assigned: SUXO – Frank Hack Blaster – Earl Dennis QC/Safety – Ron Vanderford Demo – Dean Housknecht, Scotty Cook

Remarks: MEC Disposition prep/discussion is complete. Work Plan, AHA's, were reviewed.
.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 6/09/10

Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
HAVE DESCREPANCIES NOTED DURING PREPARATORY PHASE BEEN CORRECTED	N/A	No discrepancies noted
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP 2-14, MEC DEMOLITION OPs	YES	See sign in sheet for SOP 2-14
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	YES	
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR	YES	
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS	YES	
CONFIRM EXPLOSIVES ON HAND TO SUPPORT OPERATION	YES	
VERIFY DEMOLITION SUPERVISOR CONDUCTS THE OPERATION BRIEFING	YES	
VERIFY DEMOLITION SURPERVISOR CONDUCTS THE PRE-DEMOLITION SAFETY BRIEFING	YES	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	YES	White/Schonstedts
VERIFY DEMOLITION SUPERVISOR IS MONITORING WEATHER CONDITIONS	YES	
VERIFY TEAM MEMBERS REPORT COMPLETION OF ASSIGNED TASKS TO THE DEMOLITION SUPERVISOR	YES	
VERIY EXCLUSION ZONES ARE ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT	YES	
CONFIRM SITE CONTROL MEASURES ARE IN PLACE AND ENFORCED	YES	
IS ADEQUATE FIRST AID AND FIRE PROTECTION EQUIPMENT AVAILABLE	YES	
VERIFY THAT THE MEC IS HANDLED ONLY BY UXO QUALIFIED PERSONNEL	YES	
CONFIRM THAT ENGINEERING CONTROLS ARE USED TO REDUCE MSD AND CONTROL FRAGMENTS	YES	Earth tamp
VERIFY ORDNANCE ACCOUNTABILITY LOG IS ANNOTATED	YES	
VERFIY DEMOLITION SHOT RECORD IS ANNOTATED	YES	

QUALITY CONTROL REPORT
INITIAL PHASE

VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES	YES	
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE	YES	
VERIFY PREPARATION OF THE EXPLOSIVE CHARGE IS IN ACCORDANCE WITH DEMOLITION OPERATIONS SOP	YES	
CONFIRM POST DEMOLITION PROCEDURES ARE CONDUCTED IAW DEMOLITION OPERATIONS SOP	YES	

Approved by: _____ Date _6/9/10____
UXO Quality Assurance Manager

AECOM
SOP 2-14 SIGN-IN SHEET

Date: 5/28/10 Project Name/Location: N-62742-03-D-1837 El Toro, CA

Shift/Department: _____ Person Conducting Briefing: William R. Vanderford

1. AWARENESS [e.g., special Environmental, Health, and Safety (EHS) concerns, pollution prevention, recent incidents, etc.]:

SOP 2-14 review (MEC Explosive Demolition Procedures)

2. OTHER ISSUES (EHS Plan changes, attendee comments, etc.):

3. ATTENDEES (Print Name):

1. R. Vanderford	21.
2. R. Bell	22.
3. Hank Hark	23.
4. Dan McC	24.
5. Mark Bullock	25.
6.	26.
7.	27.
8.	28.
9.	29.
10. M. Martin Guzman	30.
11. Dean Buschknecht	31.
12.	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MEC DISPOSITION

REPORT NO: 26

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Observed team during MEC disposition preparation

Equipment to be used for task performance	**Personnel**
Backhoe (demo hole & tamp) Truck (explosives transport) Demo material (Pentex, det cord, lead in line, shotgun primers) Explosives placards Scorpion blasting machine	Team Designation: Demo Personnel Assigned: SUXO – Frank Hack Blaster – Earl Dennis QC/Safety – Ron Vanderford Demo – Dean Housknecht, Scotty Cook

Remarks:
Two demolition shots were successfully conducted with no kick out or residual MPPEH located. Demo holes were filled in with a backhoe and the area policed up. No discrepancies were noted.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/09/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MEC DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
HAVE DESCREPANCIES NOTED DURING INITIAL PHASE BEEN CORRECTED	Y	No discrepancies were noted
VERIFY THAT DEMOLITION TEAM MEMBERS READ AND UNDERSTAND MEC SOP 2-14, MEC DEMOLITION OPS	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
VERIFY THE DEMOLITION SUPERVISOR WILL SUPERVISE THE LOADOUT OF EQUIPMENT FOR THE TASK	Y	
CONFIRM SUXOS WILL DESIGNATE A DEMOLITION SUPERVISOR	Y	
CONFIRM DEMOLITION OPERATION WILL BE APPROVED BY THE SUXOS	Y	
CONFIRM EXPLOSIVES ON HAND TO SUPPORT OPERATION	Y	
VERIFY DEMOLITION SUPERVISOR CONDUCTS THE OPERATION BRIEFING	Y	
VERIFY DEMOLITION SURPERVISOR CONDUCTS THE PRE-DEMOLITION SAFETY BRIEFING	Y	
VERIFY GEOPHYSICAL EQUIPMENT IS ON HAND	Y	
VERIFY DEMOLITION SUPERVISOR IS MONITORING WEATHER CONDITIONS	Y	
VERIFY TEAM MEMBERS REPORT COMPETION OF ASSIGNED TASKS TO THE DEMOLITION SUPERVISOR	Y	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT OF SHOT	Y	
CONFIRM SITE CONTROL MEASURES ARE IN PLACE AND ENFORCED	Y	
IS ADEQUATE FIRST AID AND FIRE PROTECTION EQUIPMENT AVAILABLE	Y	
VERIFY THAT THE MEC IS HANDLED ONLY BY UXO QUALIFIED PERSONNEL	Y	
CONFIRM THAT ENGINEERING CONTROLS ARE USED TO REDUCE MSD AND CONTROL FRAGMENTS	Y	
VERIFY ORDNANCE ACCOUNTABILITY LOG IS ANNOTATED	Y	
VERFIY DEMOLITION SHOT RECORD IS ANNOTATED	Y	

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

VERIFY THAT EXPLOSIVE TRANSPORT VEHICLE IS EQUIPPED TO TRANSPORT DONOR CHARGES	Y	
VERIFY THAT NO MORE THAT 2 PERSONNEL WILL RIDE IN EXPLOSIVE TRANSPORT VEHICLE	Y	
VERIFY PREPARATION OF THE EXPLOSIVE CHARGE IS IN ACCORDANCE WITH DEMOLITION OPERATIONS SOP	Y	
CONFIRM POST DEMOLITION PROCEDURES ARE CONDUCTED IAW DEMOLITION OPERATIONS SOP	Y	

Approved by: _____ Date _6/9/10____
UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH DISPOSITION

REPORT NO: 27

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Audited team during MPPEH disposition preparation

Equipment to be used for task performance	**Personnel**
1348-1 form SOP 2-19	Team Designation: Personnel Assigned: SUXO – Frank Hack QC/Safety – Ron Vanderford

Remarks:
Material will be inspected thoroughly by SUXO, QC/Safety, and 3rd party QA (ERRG representative).

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date 6/09/10

Quality Control Specialist

QUALITY CONTROL REPORT
PREPARATORY PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY APPROVED AND CURRENT WORK PLAN ON-SITE	Y	
HAVE ALL TEAM MEMBERS REVIEWED THE WORK PLAN	Y	
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Y	
VERIFY NOTIFICATIONS WILL BE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING WILL BE CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
CONFIRM SUXOS WILL SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	Y	
CONFIRM UXO TECHNICIAL III WILL SUPERVISE THE MPPEH DISPOSITION TASK	Y	
VERIY EXCLUSION ZONES WILL ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Y	
VERIFY THE TEAM SUPERVISOR WILL SUPERVISE THE LOAD OUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MPPEH WILL ONLY BE HANDLED BY UXO QUALIFIED PERSONNEL	Y	
ENSURE PERSONNEL HANDLING MPPEH HAS APPROPRIATE PPE	Y	
VERIFY CHAIN OF CUSTODY WILL BE MAINITAINED	Y	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	Y	
VERIFY THE CONTAINERS WILL BE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	Y	
VERIFY CHAIN OF CUSTODY WILL BE PROVIDED TO THE RECYCLER	Y	
VERFIY DD FORM 1348-1A IS AVAILABLE TO DOCUMENT TRANSFER OF MDAS	Y	
VERIFY THAT DD FORM WILL BE ANNOTATED IAW SOP 2-19	Y	

Approved by: _____ Date _6/9/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH DISPOSITION

REPORT NO: 28

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Audited team during initial performance of MPPEH disposition

Equipment to be used for task performance	**Personnel**
1348-1 form Two dumpsters (one for cultural debris, another for munition related debris)	Team Designation: El Toro Site Mgmt. Personnel Assigned: SUXO - Frank Hack QC/Safety - Ron Vanderford Chris Cavers

Remarks:
Material was re-inspected on 6/09/10 by SUXO, QC/Safety, and 3rd party QA. Chain of custody was documented on 1348-1 form as MDAS and suitable for recycling.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __6/09/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
INITIAL PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	YES	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	YES	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	YES	
VERIFY TAILGATE SAFETY BRIEFING CONDUCTED	YES	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	YES	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	YES	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	YES	
CONFIRM UXO TECHNICIAL III IS SUPERVISING THE MPPEH DISPOSITION TASK	YES	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	N/A	No explosive hazard present in cultural debris or MDAS.
VERIFY THE TEAM SUPERVISOR HAS SUPERVISED THE LOAD OUT OF EQUIPMENT FOR THE TASK	YES	Forklift for placing dumpsters onto Timberlines trailer.
VERIFY THAT THE MPPEH IS HANDLED BY UXO QUALIFIED PERSONNEL	YES	
ENSURE PERSONNEL HANDLING MPPEH ARE WEARING APPROPRIATE PPE	YES	
VERIFY CHAIN OF CUSTODY IS MAINTAINED	YES	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	YES	
VERIFY THE CONTAINERS ARE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	YES	
VERIFY CHAIN OF CUSTODY IS BE PROVIDED TO THE RECYCLER	YES	
VERFIY DD FORM 1348-1A IS USED TO DOCUMENT TRANSFER OF MDAS	YES	
VERIFY THAT DD FORM IS ANNOTATED IAW SOP 2-19	YES	

Approved by: _____ Date _6/9/10____

UXO Quality Assurance Manager

AECOM

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH DISPOSITION

REPORT NO: 29

DATE: 6/09/10

TASK ORDER NO: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1. Checked personnel qualifications
2. Reviewed Work and Safety Plans
3. Audited team during MPPEH disposition follow-on

Equipment to be used for task performance	**Personnel**
1348-1 form MDAS dumpsters	Team Designation: El Toro Site Mgmt. Personnel Assigned: SUXO - Frank Hack QC/Safety - Ron Vanderford Chris Cavers

Remarks:

1348-1 is filled out. Timberline will pick up the MDAS dumpsters on 6/10.

I certify that this report is complete and correct and that I have inspected the work performed this day and have determined that all materials, equipment and workmanship are in strict compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date ____6/09/10_____

Quality Control Specialist

QUALITY CONTROL REPORT
FOLLOW-ON PHASE

MPPEH DISPOSITION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY THAT TEAM MEMBERS READ AND UNDERSTAND MEC SOP-2-19, INSPECTION AND DISPOSITION OF MPPEH	Y	
VERIFY NOTIFICATIONS ARE ACCOMPLISHED IAW SSHP	Y	
VERIFY PROCEDURES FOR EMERGENCY RESPONSE SERVICES IS IN PLACE	Y	
VERIFY TAILGATE SAFETY BRIEFING CONDUCTED	Y	
VERIFY COMMUNICATIONS SYSTEM IS SET-UP AND OPERATIONAL	Y	
VERIFY PERSONNEL ASSIGNED TO THE TASK ARE TRAINED AND QUALIFIED	Y	
CONFIRM SUXOS HAS SELECT UXO PERSONNEL TO CONDUCTED MPPEH DISPOSITION	Y	
CONFIRM UXO TECHNICIAL III IS SUPERVISING THE MPPEH DISPOSITION TASK	Y	
VERIY EXCLUSION ZONES IS ESTABLISHED IAW SSHP AND ESS BASED ON THE NET EXPLOSIVE WEIGHT	Y	
VERIFY THE TEAM SUPERVISOR HAS SUPERVISED THE LOAD OUT OF EQUIPMENT FOR THE TASK	Y	
VERIFY THAT THE MPPEH IS HANDLED BY UXO QUALIFIED PERSONNEL	Y	
ENSURE PERSONNEL HANDLING MPPEH ARE WEARING APPROPRIATE PPE	Y	
VERIFY CHAIN OF CUSTODY IS MAINITAINED	Y	
VERIFY CONTAINERS WILL BE LABLED/MARKED IAW SOP 2-19.	Y	
VERIFY THE CONTAINERS ARE SEALED IN SUCH A MANNER THAT REQUIRES THE SEAL TO BE BROKEN WHEN OPENED	Y	
VERIFY CHAIN OF CUSTODY IS BE PROVIDED TO THE RECYCLER	Y	
VERFIY DD FORM 1348-1A IS USED TO DOCUMENT TRANSFER OF MDAS	Y	
VERIFY THAT DD FORM IS ANNOTATED IAW SOP 2-19	Y	

Approved by: _____ Date _6/9/10____

UXO Quality Assurance Manager

AECOM

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

DEMOBILIZATION

REPORT NO: 30

DATE: 6/09/2010

TASK ORDER: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED	
1.Personnel departure briefing 2.Contact vendors to pickup equipment	
Equipment to be used in task performance	**Personnel**
Vendors have been contacted and dates set for pickup of trailer, portable toilets, dumpster bins. Other equipment to be FedEx from the site to AECOM offices in Richmond, VA.	Team Designation: N/A Personnel Assigned: Site Management
Remarks: Two Schonstedts, two Whites, some GPS equipment and digging tools diverted to Blythe job.	

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date __6/09/10_____

Quality Control Specialist

DAILY QUALITY CONTROL REPORT
PREPARATORY PHASE

DEMOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF PERSONNEL CHECKING OUT AND DEPARTURE DATES DIRECT BILLING IS IN PLACE	Y	
VERIFY VENDOR IS NOTIFIED OF REQUIREM ENT TO PICK UP PORTABLE TOILETS, SITE TRAILER, GENERATORS, ETC.	Y	
VERIFY RENTAL VEHICLES ARE WASHED AND REFUELED TO THE LEVEL THEY WERE RECEIVED	Y	
VERIFY PLANS TO HAVE A CLOSE-OUT SITE WALK WITH THE CLIENT TO CONFIRM SITE RESTORATION REQUIREMENTS	Y	
VERIFY PLANS TO ENSURE COLLECT SOLID WASTE AND TRASH FROM FOR DISPOSAL OFF SITE.	Y	

Approved by: _____ Date _6/9/10____
UXO Quality Assurance Manager

AECOM

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

DEMOBILIZATION

REPORT NO. 31

DATE: 6/10/2010

TASK ORDER: 0032

SITE SUPERVISOR: Chris Cavers

LIST QUALITY CONTROL ACTIONS TAKEN TODAY/QC INSPECTIONS CONDUCTED

1.Personnel departure briefing
2.Contact vendors to pickup equipment

Equipment to be used in task performance	**Personnel**
Rental vehicles Timberline dumpsters (cultural debris/MDAS) Office trailer Portable toilets 3ea. Type II magazine	Team Designation: Personnel Assigned: Chris Cavers Frank Hack Ron Vanderford

Remarks:
With the exception of site management, the site crew has been de-mobilized and travel arrangements have been completed. The office trailer is scheduled for pickup on 6/11/10 and Timberline has collected the MDAS dumpsters. Pick up arrangements have been made for the explosive magazines, backhoe, forklift, portable toilets and portable generator. Rental vehicles returned.

I certify that this report is complete and correct and that I have inspected the work have determined compliance with the plans and specifications except as may noted herein.

William R. Vanderford

Name_____ Date _6/10/2010_____
Quality Control Specialist

DAILY QUALITY CONTROL REPORT
INITIAL PHASE

DEMOBILIZATION

DEFINABLE FEATURE	Y-YES, N-NO, N/A	WORK LOCATION, REMARKS
VERIFY HOTEL STAFF IS AWARE OF PERSONNEL CHECKING OUT AND DEPARTURE DATES DIRECT BILLING IS IN PLACE	YES	
VERIFY VENDOR IS NOTIFIED OF REQUIREM ENT TO PICK UP PORTABLE TOILETS, SITE TRAILER, GENERATORS, ETC.	YES	
VERIFY RENTAL VEHICLES ARE WASHED AND REFUELED TO THE LEVEL THEY WERE RECEIVED	YES	
VERIFY PLANS TO HAVE A CLOSE-OUT SITE WALK WITH THE CLIENT TO CONFIRM SITE RESTORATION REQUIREMENTS	YES	
VERIFY PLANS TO ENSURE COLLECT SOLID WASTE AND TRASH FROM FOR DISPOSAL OFF SITE.	YES	

Approved by: _____ Date _6/10/10____
UXO Quality Assurance Manager

PREPARATORY PHASE CHECKLIST	
Contract Number	N62742-03-D-1837
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property
Site ID	Adjacent Property IRP Site 1
Checklist Completed	BY: Ron Vanderford Date: 5/21/10
Definable Feature of Work	**Quality Control Blind Seed Deployment and Management**

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Submittals Review and Approval				
1.	Is a copy of the approved Removal Action Work Plan available on-site?? If not, obtain one from the PM.	Project Work Plan	WRV 5/21/10	Yes__X__No_____N.A_____
2.	Is a copy of the approved Health and Safety Plan for the removal action available on-site? If not, obtain one from the PM.	Project Accident Prevention Plan (APP)	WRV 5/21/10	Yes__X___No_____N.A_____
3	Is a copy of the valid Access Agreement available on-site?? If not, obtain one from the PM.	Entry Permit No. AGEP070108 (Access Agreement) Section 3.	WRV 5/21/10	Yes__X___No_____N.A_____
Materials/Equipment Services Procurement				
4.	Global Positioning System (GPS) equipment, uploaded with the investigation area grid system	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
5	Adequate supply of QC blind seed items of similar shape and size to primary munition anticipated/ encountered at the site, 20 mm projectile (1/2-inch by 3-inch pipe nipples), and seed items have been painted with unique identifiers?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes___X__No_____N.A_____
6.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/21/10	Yes__X___No_____N.A_____
7.	Have equipment Response Checks in test beds been conducted? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/21/10	Yes__X___No_____N.A_____
Project Planning Documents/Field Procedures Review				
8.	Review of work plan and SOP requirements	Work Plan Section 4.2.3 and SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
9.	Roles and Responsibilities Clearly delineated	Work Plan Section 2.3	WRV 5/21/10	Yes__X___No_____N.A_____
10	Site Map with all grids uniquely identified	N/A	WRV 5/21/10	Yes__X___No_____N.A_____
11	Approved Blind Seed Tracking Log. Has one been provided? Who has custody? UXOQCS	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
12.	Coordination with other project tasks. Have UXO Techs been briefed on documentation procedures once a QC Blind Seed is recovered?	Work Plan Section 4.2.3	WRV 5/21/10	Yes__X___No_____N.A_____
Health and Safety				
13	Review of APP and relevant AHA(s)	APP, including Appendix B, AHAs	WRV 5/21/10	Yes__X___No_____N.A_____
Items Identified for Follow-up				

Name William R. Vanderford Date 5/21/10

Quality Control Specialist

Approved by: _____ Date: 5/21/10

UXO Quality Assurance Manager

INITIAL PHASE CHECKLIST	
Contract Number	N62742-03-D-1837
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property
Site ID	Adjacent Property IRP Site 1
Checklist Completed	BY: Ron Vanderford Date: 5/21/10
Definable Feature of Work	**Quality Control Blind Seed Deployment and Management**

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Materials/Equipment Checks				
1.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/21/10	Yes__X___No_____N.A_____
2.	Have equipment Response Checks been conducted in test beds? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/21/10	Yes__X___No_____N.A_____
3.	Has a site map been provided that shows the grid system?	Work Plan Section 2.5.4.11	WRV 5/21/10	Yes__X___No_____N.A_____
4.	Is GPS equipment functional?	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
5	Adequate supply of QC blind seed items of similar shape and size to primary munition anticipated/ encountered at the site, 20 mm projectile (1/2-inch by 3-inch pipe nipples), and seed items have been painted with unique identifiers?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
6.	Is a blank Blind Seed Tracking Log available on-site and in UXOQCS' custody?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
Field Procedures Review				
7	Review Preparatory Phase meeting notes. Have all issue/items identified in the Preparatory Phase meeting been resolved?	Work Plan Section 4.2.1.2	WRV 5/21/10	Yes__X___No_____N.A_____
8.	Have QC Blind Seeds been properly placed?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
9.	Has the identification, location, depth, and orientation of QC Blind Seeds been recorded on the Blind Seed Tracking Log, including GPS coordinates in the coordinate system used for the project?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
10.	Is the identification and location of all QC Blind Seeds available electronically, and only available to the UXOQCS, on-site Project Engineer, and the Project Manager?	SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X___No_____N.A_____
Health and Safety				
11.	Have work areas been delineated?	Work Plan Section 2.5.4.11	WRV 5/21/10	Yes__X___No_____N.A_____
12.	Is the site security controlled at all times?	Work Plan Section 4.2.1.5	WRV 5/21/10	Yes__X___No_____N.A_____
13.	Is appropriate PPE being used?	APP, Section 10	WRV 5/21/10	Yes__X___No_____N.A_____
Items Identified for Follow-up				

Approved by: William R. Vanderford Date 5/21/10

Quality Control Specialist

Approved by: _____ Date: 5/21/10

UXO Quality Assurance Manager

FOLLOW-UP PHASE CHECKLIST	
Contract Number	N62742-03-D-1837
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property
Site ID	Adjacent Property IRP Site 1
Checklist Completed	By: Ron Vanderford Date: 5/26/10
Definable Feature of Work	**Quality Control Blind Seed Deployment and Management**

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Field Quality Control				
1.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/26/10	Yes__X___No_____N.A_____
2.	Have equipment Response Checks in the test beds been conducted? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/26/10	Yes__X___No_____N.A_____
3.	Review Initial Phase meeting notes Have all issue/items identified in the Initial Phase meeting been resolved?	Work Plan Section 4.2.1.2	WRV 5/26/10	Yes__X___No_____N.A_____
4.	Is GPS equipment functional?	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/26/10	Yes__X___No_____N.A_____
Inspections/Tests				
5	Are all dig request lists being provided by the Project Geophysicist and all dig results sheets being provided by the mag-and-flag team leaders?	Work Plan Section 2.5.8.1	WRV 5/26/10	Yes__X___No_____N.A_____
6.	Have investigation teams working within designated grids properly identified and collected all QC Blind Seeds placed within the grid(s) they are working in?	Work Plan Section 4.2.3	WRV 5/26/10	Yes__X___No_____N.A_____
7.	Notify the Project Geophysicist, the SUXOS, and the PM if any DGM QC Blind Seeds or mag-and-flag blind seeds were not recovered by the investigation teams	Work Plan Section 4.2.3	WRV 5/26/10	Yes__X___No_____N.A_____
Health and Safety				

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
8.	Have work areas been delineated?	Work Plan Section 2.5.4.11	WRV 5/26/10	Yes__X___No_____N.A_____
9.	Is the site security controlled at all times?	Work Plan Section 4.2.1.5	WRV 5/26/10	Yes__X___No_____N.A_____
10.	Is appropriate PPE being used?	APP, Section 10	WRV 5/26/10	Yes__X___No_____N.A_____
Items Identified for Follow-up				

Approved by: William R. Vanderford Date _5/26/10___

Quality Control Specialist

Approved by: _____ Date: __5/26/10__

UXO Quality Assurance Manager

PREPARATORY PHASE CHECKLIST	
Contract Number	N62742-03-D-1837
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property
Site ID	Adjacent Property IRP Site 1
Checklist Completed	BY: Ron Vanderford Date 5/21/10
Definable Feature of Work	**Grid Close-Out**

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Submittals Review and Approval				
1.	Is a copy of the approved Removal Action Work Plan available on-site? If not, obtain one from the PM.	Project Work Plan	WRV 5/21/10	Yes__X__No_____N.A_____
2.	Is a copy of the approved Health and Safety Plan for the removal action available on-site? If not, obtain one from the PM.	Project Accident Prevention Plan (APP)	WRV 5/21/10	Yes__X__No_____N.A_____
3	Is a copy of the valid Access Agreement available on-site? If not, obtain one from the PM.	Entry Permit No. AGEP070108 (Access Agreement) Section 3.	WRV 5/21/10	Yes__X__No_____N.A_____
Materials/Equipment Services Procurement				
4.	Dig Result sheets, completed and on file	Work Plan Section 4	WRV 5/21/10	Yes__X__No_____N.A_____
5.	Global Positioning System (GPS) equipment, uploaded with the investigation area grid system	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X__No_____N.A_____
6.	Blind Seed Tracking Log, completed	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/21/10	Yes__X__No_____N.A_____
7.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/21/10	Yes__X__No_____N.A_____
8.	Have equipment Response Checks been conducted? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/21/10	Yes__X__No_____N.A_____
9.	Is a blank QC/QA Grid Inspection Report available on-site and in UXOQCS' custody?	Work Plan Section 4	WRV 5/21/10	Yes__X__No_____N.A_____
Project Planning Documents/Field Procedures Review				
10.	Review of work plan and SOP requirements	Work Plan, Appendix B, SOPs	WRV 5/21/10	Yes__X__No_____N.A_____

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
11.	Roles and Responsibilities clearly delineated	Work Plan Section 2.3	WRV 5/21/10	Yes__X__No_____N.A_____
12.	Site Map with all grids uniquely identified	Work Plan Section 4	WRV 5/21/10	Yes__X__No_____N.A_____
13.	Verify that the investigation teams have completed working within the grid(s) to be closed-out. This includes reviewing dig results sheets and working with team leaders and SUXOS and Project Geophysicist to verify that no additional work will be conducted within the grid(s).	Work Plan Section 4	WRV 5/21/10	Yes__X__No_____N.A_____
14.	Verify that all DGM "No Finds" have all been re-acquired and verified by the DGM team. Verify that all mag-and-flag "No Finds" have been checked out by the SUXOS and UXOQCS.	Work Plan Section 2.5.8.4	WRV 5/21/10	Yes__X__No_____N.A_____
Health and Safety				
13	Review of APP and relevant AHA(s)	APP, including Appendix B, AHAs	WRV 5/21/10	Yes__X__No_____N.A_____
Items Identified for Follow-up				

Approved by: William R. Vanderford Date 5/21/10

Quality Control Specialist

Approved by: _____ Date 5/21/10

UXO Quality Assurance Manager

INITIAL PHASE CHECKLIST		
Contract Number	N62742-03-D-1837	
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property	
Site ID	Adjacent Property IRP Site 1	
Checklist Completed	BY: Ron Vanderford	Date 5/25/10
Definable Feature of Work	**Grid Close-Out**	

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Materials/Equipment Checks				
1.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/25/10	Yes__X__No_____N.A_____
2.	Have equipment Response Checks been conducted in the test beds? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/25/10	Yes__X__No_____N.A_____
3.	Has a site map been provided that shows the grid system?	Work Plan Section 2.5.4.11	WRV 5/25/10	Yes__X__No_____N.A_____
4.	Is GPS equipment functional?	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/25/10	Yes__X__No_____N.A_____
5.	Dig result sheets, completed and on file	Work Plan Section 4	WRV 5/25/10	Yes__X___No_____N.A_____
6.	Blind Seed Tracking Log, completed	SOP 2-20, Blind Seed Placement	WRV 5/25/10	Yes__X___No_____N.A_____
7.	Is a blank QC/QA Grid Inspection Report available on-site and in UXOQCS' custody?	Work Plan Section 4	WRV 5/25/10	Yes__X__No_____N.A_____
Field Procedures Review				
8	Review Preparatory Phase meeting notes. Have all issue/items identified in the Preparatory Phase meeting been resolved?	Work Plan Section 4.2.1.2	WRV 5/25/10	Yes__X___No_____N.A_____
9.	Identify and mobilize to grid(s) to be closed-out	Work Plan Section 4	WRV 5/25/10	Yes__X___No_____N.A_____

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
10.	Conduct 25% QC check of grid areas or 25% of the DGM or mag-and-flag identified anomalies in the areas to be closed-out using Schonstedt and White detectors. If grid fails 25% QC check, a QDN will be issued, the dig team in question is to return to the grid and conduct re-work and then the grid is to receive an additional 25% QC check. This process is to repeat until the grid passes the 25% QC check.	Work Plan Section 4.2	WRV 5/25/10	Yes__X___No_____N.A_____
11.	Document 25% QC check and all blind seeds recovered within the grid(s) to be closed-out on the QC/QA Grid Inspection Report.	Work Plan Section 4.2 & SOP 2-20, Blind Seed Placement	WRV 5/25/10	Yes__X___No_____N.A_____
12.	Document that all DGM "No Finds" have been re-acquired and verified by the DGM team and the mag-and-flag "No Finds" have been verified by the SUXOS and UXOQCS.	Work Plan Section 2.5.8.4	WRV 5/25/10	Yes__X___No_____N.A_____
Health and Safety				
13.	Have work areas been delineated?	Work Plan Section 2.5.4.11	WRV 5/25/10	Yes__X__No_____N.A_____
14.	Is the site security controlled at all times?	Work Plan Section 4.2.1.5	WRV 5/25/10	Yes__X__No_____N.A_____
15.	Is appropriate PPE being used?	APP, Section 10	WRV 5/25/10	Yes__X__No_____N.A_____
Items Identified for Follow-up				
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____

Approved by: William R. Vanderford Date _5/25/10___

Quality Control Specialist

Approved by: _____ Date_5/25/10__

UXO Quality Assurance Manager

FOLLOW-UP PHASE CHECKLIST		
Contract Number	N62742-03-D-1837	
Project Name	Time Critical Removal Action, IRP Site1 Adjacent Property	
Site ID	Adjacent Property IRP Site 1	
Checklist Completed	BY: Ron Vanderford	Date: 5/26/10
Definable Feature of Work	**Grid Close-Out**	

#	*Item*	*Specification/Work Plan Section*	*QC Initials Date*	*Comments*
Field Quality Control				
1.	Hand-held detectors, functional	Work Plan Section 2.5.8.2	WRV 5/26/10	Yes__X___No_____N.A_____
2.	Have equipment Response Checks been conducted in test beds? Can hand-held detectors and/or DGM equipment locate blind seeds?	Work Plan Section 4.2.7	WRV 5/26/10	Yes__X___No_____N.A_____
3.	Review Initial Phase meeting notes Have all issue/items identified in the Initial Phase meeting been resolved?	Work Plan Section 4.2.1.2	WRV 5/26/10	Yes__X___No_____N.A_____
4.	Is GPS equipment functional?	Work Plan Section 2.5.8.1 & SOP 2-20, Blind Seed Placement	WRV 5/26/10	Yes__X___No_____N.A_____
5.	Dig result sheets, completed and on file	Work Plan Section 4	WRV 5/26/10	Yes__X___No_____N.A_____
6.	QC/QA Grid Inspection Report, completed and on file	Work Plan Section 4	WRV 5/26/10	Yes__X___No_____N.A_____
Inspections/Tests				
7	Coordinate with the SUXOS and Project Geophysicist and verify that grids shall not be closed out until all QC and QA procedures are completed and the grids are accepted by the QA and acceptance documents.	Work Plan Section 4	WRV 5/26/10	Yes__X___No_____N.A_____
Health and Safety				
8.	Have work areas been delineated?	Work Plan Section 2.5.4.11	WRV 5/26/10	Yes__X___No_____N.A_____
9.	Is the site security controlled at all times?	Work Plan Section 4.2.1.5	WRV 5/26/10	Yes__X___No_____N.A_____
10.	Is appropriate PPE being used?	APP, Section 10	WRV 5/26/10	Yes__X___No_____N.A_____

#	Item	Specification/Work Plan Section	QC Initials Date	Comments
Items Identified for Follow-up				
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____
				Yes__X___No_____N.A_____

Approved by: William R. Vanderford Date _5/26/10___

Quality Control Specialist

Approved by: _____ Date _5/26/10___

UXO Quality Assurance Manager

Blind Seed Tracking Log and Grid Close-Out Forms

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Project: Second Phase El Toro II TCRA

QC BLIND SEED TRACKING LOG

Seed #	Grid #	Date Seed Placed	GPS Coordinates – Ca State Plane Zone 6		DGM or Mag/Flag	Depth/ Orientation	Date Grid Mapping Complete (DGM)	Date Grid Completed by UXO teams	Date of Blind Seed Recovery	Date Grid QC/QA Performed
			E-Coord	N-Coord						
1	16	5/21/10	6123556.737	2197576.752	M/F	1” W-E	N/A	5/26/10	5/26/10	5/27/10
2	20	5/21/10	6123745.106	2197708.909	M/F	2” N-S	N/A	5/28/10	5/28/10	6/01/10
3/QA7	1	5/21/10	6122883.379	2196821.104	M/F	2” N-S	N/A	5/24/10	5/24/10	5/25/10
4/QA3	25	5/21/10	6123955.758	2197894.417	M/F	2” N-S	N/A	5/27/10	5/26/10	5/27/10
5/QA6	5	5/21/10	6123060.218	2197137.220	M/F	3” W-E	N/A	5/28/10	5/26/10	5/28/10
6	18	5/21/10	6123285.189	2197769.093	M/F	1” W-E	N/A	5/27/10	5/27/10	5/28/10
7	4	5/21/10	6123051.526	2197069.340	M/F	1” W-E	N/A	5/27/10	5/27/10	5/28/10
8	27	5/21/10	6123557.452	2198311.054	M/F	4” W-E	N/A	6/04/10	6/04/10	6/07/10
9	29	5/21/10	6123708.982	2198376.628	M/F	2” N-S	N/A	6/04/10	6/04/10	6/04/10
10	7	5/21/10	6122861.802	2197478.744	M/F	2” N-S	N/A	5/28/10 6/02/10	5/27/10	6/01/10 6/02/10
11	9	5/21/10	6123163.836	2197321.967	M/F	4” N-S	N/A	6/07/10	6/04/10	6/07/10
12	11	5/21/10	6123011.055	2197621.322	M/F	2” W-E	N/A	6/01/10	6/01/10	6/02/10
13	23	5/21/10	6123366.886	2198065.810	M/F	2” W-E	N/A	6/01/10	6/01/10	6/02/10
14/QA2	28	5/21/10	6123879.735	2198361.353	M/F	3” W-E	N/A	6/03/10	6/03/10	6/4/10
15	24	5/21/10	6123901.753	2197811.324	M/F	1” N-S	N/A	6/03/10	6/03/10	6/4/10

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Project: Second Phase El Toro II TCRA **Page __- 2 -__of Pages__2____**

QC BLIND SEED TRACKING LOG

Seed #	Grid #	Date Seed Placed	GPS Coordinates – Ca State Plane Zone 6		DGM or Mag/Flag	Depth/ Orientation	Date Grid Mapping Complete (DGM)	Date Grid Completed by UXO teams	Date of Blind Seed Recovery	Date Grid QC/QA Performed
			E-Coord	N-Coord						
16/QA5	10	5/21/10	6123105.298	2197493.696	M/F	2” W-E	N/A	6/04/10	6/04/10	6/07/10
17	15	5/21/10	6123023.569	2197687.480	M/F	2” N-S	N/A	6/01/10	6/1/10	6/02/10
18	21	5/21/10	6123591.759	2197860.961	M/F	2” N-S	N/A	5/28/10	5/27/10	6/01/10
19	3	5/21/10	6123045.490	2196926.244	M/F	3” W-E	N/A	5/25/10	5/25/10	5/26/10
20	22	5/21/10	6123473.263	2198005.090	M/F	4” N-S	N/A	6/01/10	6/1/10	6/02/10
\21	2	5/21/10	6122821.177	2196848.280	M/F	3” N-S	N/A	5/27/10	5/24/10	5/28/10
22/QA1	30	5/21/10	6124180.877	2198203.051	M/F	2” N-S	N/A	6/07/10	6/07/10	6/08/10
23/QA4	13	5/21/10	6123302.085	2197572.598	M/F	2” N-S	N/A	5/25/10	5/25/10	5/26/10
24	14	5/21/10	6123153.580	2197628.396	M/F	3” W-E	N/A	5/26/10	5/25/10	5/27/10
25	31	5/21/10	6124076.784	2198313.782	M/F	3” W-E	N/A	6/07/10	6/07/10	6/08/10
26	32	5/21/10	6123977.927	2198388.852	M/F	1” N-S	N/A	6/03/10	6/03/10	6/04/10
27	26	5/21/10	6123654.469	2198175.570	M/F	2” N-S	N/A	6/04/10	6/04/10	6/07/10
28	6	5/21/10	6122919.016	2197383.254	M/F	1” N-S	N/A	5/28/10	5/28/10	6/01/10
29	17	5/21/10	6123347.271	2197627.462	M/F	1” W-E	N/A	5/26/10	5/26/10	5/27/10
30	19	5/21/10	6123231.546	2197842.026	M/F	3” N-S	N/A	6/02/10	5/27/10	6/02/10
*Note that blind seeds were not placed in grids 8, 12, or 33 due to small grid size.										

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
1	25%		Ron Vanderford		5/25/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 1.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/25/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LUIS E. FIERRO	Luis E. Fierro	5/25/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
2	25%		Ron Vanderford		5/28/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 2.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/28/10

UXO QA Inspection

X Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LUIS FIERRO	[illegible]	5/26/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
3	25%		Ron Vanderford		5/26/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/26/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LOIS FIELDING ENG	[signature]	3/24/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
4	25%		Ron Vanderford		5/28/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 2.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/28/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Justin Eaves	[illegible]	5/28/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
5	25%		Ron Vanderford		5/28/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 5.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/28/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LUIS FIERRO		5/28/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
6	25%		Ron Vanderford		6/01/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

25% QC sweep of grid 6.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/01/10

UXO QA Inspection

✓ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
		6/1/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
7	25%		Ron Vanderford		5/28/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 7.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

Grid 7 initially failed a 25% QC/QA sweep on 1 June and corrective actions were instituted (batteries swapped out on Schonstedts and settings set to 5, a review of proper sweeping technique, and re-work of grid 7). Grid was re-worked and another 25% QC/QA check was conducted on 2 June. Grid passed.

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LUIS FIERRO	Luis E. Fierro	6/02/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
8	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

⊗ Pass	○ Fail	Comments:
Conducted by: Luis Fiemo	Signature:	Date: 5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
9	25%		Ron Vanderford		6/07/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 9.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/07/10

UXO QA Inspection

X Pass	○ Fail	Comments:
Conducted by: EMC LOS FIELD	Signature: [illegible]	Date: 6/7/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
10	25%		Ron Vanderford		6/07/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 10.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/07/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
ERG Luis Fierro	Luis E Fierro	6/7/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
11	25%		Ron Vanderford		6/02/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 11.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

X Pass	○ Fail	Comments:
Conducted by: EN116 Luis Fierro	Signature:	Date: 6/2/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
12	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 12.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

✓ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Luis Fernando Ortiz	[signature]	5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
13	25%		Ron Vanderford		5/26/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 13

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/26/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: LUISFERNANDO ENRIQUEZ	Signature:	Date: 5/26/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
14	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: OUG LUIS FIGUEIRO	Signature: Luis F. Figueiro	Date: 5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
15	25%		Ron Vanderford		6/02/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 15.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

✓ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Dushiano	[signature]	6/02/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
16	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by: EMS LUIS FIGUERO	Signature:	Date: 5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
17	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

X Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Luis Fiano UXO	[illegible]	5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
18	25%		Ron Vanderford		5/28/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 2.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/28/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
LUIS HERRO		5/28/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
19	25%		Ron Vanderford		6/02/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 19.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Eric Lusetham	Signature:	Date: 6/02/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
20	25%		Ron Vanderford		6/1/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 20.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/1/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Luis Fiello	Signature:	Date: 6/1/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
21	25%		Ron Vanderford		6/1/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 21.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/1/10

UXO QA Inspection

X Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Luis Herrero Ortiz	[illegible]	6/1/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
22	25%		Ron Vanderford		6/02/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 22.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

X Pass	○ Fail	Comments:
Conducted by: Luse Helms	Signature:	Date: 6/2/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
23	25%		Ron Vanderford		6/02/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 23.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/02/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Luis Fierro	[signature]	6/2/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
24	25%		Ron Vanderford		6/04/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 24.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/04/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by: Luis Fierro	Signature:	Date: 6/04/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
25	25%		Ron Vanderford		5/27/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 25.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	5/27/10

UXO QA Inspection

X Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Ron Vanderford		5/27/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
26	25%		Ron Vanderford		6/07/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

25% QC sweep of grid 26.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/07/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Luis Fierro	Signature:	Date: 06/07/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
27	25%		Ron Vanderford		6/07/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 27.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/07/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Luis Figueroa	Signature:	Date: 06/07/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
28	25%		Ron Vanderford		6/04/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 28.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/04/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by: Luis Fierro	Signature:	Date: 6/04/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
29	25%		Ron Vanderford		6/04/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 29.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/04/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by:	Signature:	Date:
Luis Fierro	Luis Fierro	6/04/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
30	25%		Ron Vanderford		6/08/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

25% QC sweep of grid 30.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/08/10

UXO QA Inspection

X Pass	○ Fail	Comments:
Conducted by: LUIS HERNO	Signature:	Date: 6/8/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
31	25%		Ron Vanderford		6/08/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 31.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/08/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Luis Fiano	Signature:	Date: 6/8/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
32	25%		Ron Vanderford		6/04/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%	X X	EM 61 White (All Metals) Shonstedt

Details of QC Inspection

25% QC sweep of grid 32.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/04/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:

Conducted by: ENAB Luis Fiorino	Signature:	Date: 6/04/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:

Reviewed by:	Signature:	Date:

AECOM

QC GRID INSPECTION REPORT

Grid Identification	QC State (%) MILSTD Based		QC Inspection Conducted by		DATE
33	25%		Ron Vanderford		6/08/10
Total DGM Targets in Grid	**Total DGM Grid Targets Sampled**	**Total Analog Grid Area Sampled**	**Total Analog Grid Targets Sampled**	**Geophysical Instruments Used**	
0	0	25%	25%		EM 61
				X	White (All Metals)
				X	Shonstedt

Details of QC Inspection

25% QC sweep of grid 33.

Comments

Reviewed by:	Signature:	Date:
Ron Vanderford	William R. Vanderford	6/08/10

UXO QA Inspection

☒ Pass	○ Fail	Comments:
Conducted by: Luis Urrama	Signature:	Date: 6/8/2010

Inspection Results Acknowledged by AECOM PM

○ Accept	○ Withhold	Comments:
Reviewed by:	Signature:	Date:

Appendix G
Non-Conformance Report

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NONCONFORMANCE REPORT

NCR NUMBER: 001 **Date:** April 27, 2010

Project Name/Location: Time Critical Removal Action **Project No:** N-62742-03-D-1837
MCAS El Toro, IRP Site 1, Adjacent Property
Irvine, CA

Nonconformance Description (including specific requirement violated)

1.0 Incomplete Anomaly Dig Lists

- A complete list of anomalies identified for intrusive investigation was not provided to the unexploded ordnance (UXO) dig teams. Incomplete anomaly dig lists resulted from systematic processing errors on the part of the Project Geophysicist. Specifically, the Project Geophysicist did not complete a thorough review of the final processing spreadsheets in comparison to the dig lists, nor was a peer review of this effort completed. After demobilization, 95 additional anomalies were identified and added to the dig list following an independent review of the Digital Geophysical Mapping (DGM) anomaly selection.

Work Plan specifies:

2.5.8.4 ANOMALY DETERMINATION AND REACQUISITION (in part)

"A qualified geophysicist will analyze the digital geophysical data for each anomaly investigation grid to identify targets that may represent buried munitions. After target identification, hard copy and digital dig-sheets will be submitted to the dig team."

1.1 Root Cause of Nonconforming Action

- A secondary review/check of the DGM-identified anomalies, which would have provided an independent verification of the accuracy and completeness of the DGM dig lists, was not performed.

1.2 Corrective Action to be Taken

- Require/assign a Quality Control (QC) Geophysicist to conduct an independent review of the anomaly picking and dig list preparation process.

2.0 Management of Work Flow and Close-Out in the DGM Grids

- An evaluation of the field QC logbooks and the grid close-out records revealed that there was a lack of detailed procedures for blind seed tracking, anomaly reacquisition and investigation, and grid close-out in the DGM grids.
- Following the vegetation clearance, it was determined that the areas originally planned for DGM mapping had to be reduced due to rugged terrain and operational safety issues. Changing the DGM area boundaries as the work progressed caused confusion, and in some instances, resulted in overlapping of DGM and mag-and-flag investigation areas, as evidenced by the records for Seeds A-12 and A-15 (see Attachment 1).

2.1 Root Cause of Nonconforming Action

- Insufficient grid clearance and tracking processes that documented when a DGM grid was cleared and how UXO Quality Control Specialist (UXOQCS) verified grid clearance. This was due to lack of detailed operating procedures for grid clearance and inadequate communication/coordination between the UXOQCS and the project geophysical team.
- Delayed DGM data analysis and dig list preparation by the Project Geophysicist caused confusion in the field.
- Unforeseen boundary changes for the DGM and mag-and-flag areas (due to rugged terrain and operational safety issues) were not mapped, documented, or communicated in real-time.
- Lack of a detailed QC process for the DGM data management and dig sheet generation process.

2.2 Corrective Actions to be Taken

- Prepare detailed field operation procedures that lay out step-by-step processes for grid clearance and QC clearance.
- Prepare a Grid Close-Out Checklist/Log for field use.
- Provide a specific geophysical QC process and a separate individual to verify the DGM data evaluation and anomaly selection process.

3.0 Non-Recovery of Blind Seeds in DGM Grids and Undocumented Blind Seeds Recovery

- Two of 10 blind seeds, A-5 and A-10, (0.5” x 3.0” steel cylinders) placed in the DGM area, were not recovered following DGM mapping. A-5 was identified as an anomaly but erroneously left off of the dig list. A-10 was detected with an anomalous signal and therefore was not included on the dig list. The UXOQCS recovered these blind seeds at the end of field work.

- Two blind seeds (A-6 in the DGM area and A-8 in the mag-and-flag area) were removed by the dig teams but were not documented in dig result sheets.

Work Plan specifies:

4.2.3 QC Blind Seed Items

"QC seed items will be placed by the UXOQCS throughout the site to monitor the Surface/Near Surface Clearance Operations. The blind QC seeds will be used to evaluate the overall quality of the clearance operations. Geophysical detection of the blind seeds will confirm that the geophysical mapping team covered the area and the investigation procedures and instruments were appropriate to accomplish the task. Recovery of the blind seeds will confirm that these items were appropriately reacquired and that the team cleared the anomaly and properly documented their findings. The QC requirement is to recover 100 percent of the blind seeds.

Upon finding a failure (e.g., missed seed item), the UXOQCS will issue a Deficiency Notice Report (DNR) and conduct a root cause analysis to determine the extent of the failure and why it occurred. All the factors will be evaluated and corrective action will be based on the root cause analysis. Rework (if required) will be done from the point at which the problem occurred, as identified through the root cause analysis."

In accordance with Section 4.2.3, on March 22, 2010, the onsite UXOQCS submitted a Quality Deficiency Notice, stating that three QC seeds (A-4, A-5 and A-10) were "missed." A thorough review of blind seed records (Attachment 1) revealed the following:

- Seed A-4 was placed after the DGM survey and thus was not picked as an anomaly for investigation. Seed A-4 did not serve its intended purpose.
- Seed A-5 was detected by the DGM equipment (EM61 High Sensitivity Metal Detector [EM61]); it was identified as an anomaly for intrusive investigation, but as part of errors made by the Project Geophysicist, it was not included on the dig list.
- Seed A-10 was detected by the DGM survey, but due to an anomalous response, was not selected for inclusion on the dig list. The amplitude, shape, and time decay progression of the secondary electromagnetic response for this seed was not considered representative of a metal target of interest.
- In addition to the blind seeds noted above, which the UXOQCS made note of in his field book, it was later discovered that Seeds A-6 and A-8 were recovered as anomalies but not recorded as blind seeds that were recovered. Most likely these two seeds were mistaken as Cultural Debris.

3.1 Root Cause of Nonconforming Action

- Blind seeds were not painted and numbered for easy identification and they were not properly tracked.

- Failure of the UXOQCS to recognize his responsibility for proper tracking of DGM seeds.
- Lack of coordination/communication between UXOQCS and the geophysics team to clarify the responsibilities for DGM blind seed tracking.
- Unforeseen boundary changes for the DGM and mag-and-flag areas (due to rugged terrain and operational safety issues) were not mapped, documented, or communicated in real-time.

3.2 Corrective Actions to be Taken

- Prepare a Blind Seed Standard Operating Procedure (SOP) including a Tracking Log/Form to document seed placement location, depth, orientation, time, outcome of the investigation, and any other relevant information.
- UXOQCS and geophysical team shall closely coordinate and identify responsibilities.
- UXOQCS shall follow-up on real-time performance analysis of seed recovery as the investigation is completed in DGM and mag-and-flag areas.

4.0 Recommendation for Path Forward

An ATS geophysicist, Dr. Brian Damiata, who was not previously involved in this project, was assigned to evaluate the routines and anomaly selection criteria used during DGM data processing, and to review the resulting dig lists relative to the DGM data and processing performed to identify potential anomalies. His report (see Attachment 2) stated that there is no universally adopted method to process and analyze EM-61 data and interpret anomalies for UXO investigations. He further indicated that, although somewhat subjective as all "picking" of anomalies is, the anomaly selection criteria were reasonable.

Dr. Damiata further noted that although he did not have specific information as to why some anomalies were excluded from the master dig list, he could see that there were perhaps more than 140 anomalies that were not on the dig list, but could have been. After reviewing Dr. Damiata's comments, the Project Geophysicist conducted a thorough review of the more than 140 potential anomalies, and consistent with the project selection criteria, identified 95 additional anomalies to be investigated by the dig teams. As recommended in Section 1.2 of this NCR, a QC Geophysicist will conduct an independent review of the anomaly picking and dig list preparation process for the 95 anomalies..

ATS recommends the following path forward:

- Excavate/dig the additional 95 anomaly picks.

- Resurvey all DGM-mapped areas (approximately 12 acres) using the mag-and-flag (and dig) method to validate the DGM anomaly selection process and improve the confidence in the results of this removal action.

The 95 additional anomalies that were identified, but not previously included in the dig lists, should be excavated. To add a measure of confidence on the appropriateness of the anomaly selection criteria used for the DGM-surveyed area, AECOM recommends a resurvey of all DGM-mapped grids using the mag-and-flag method. Since a great majority of the Material Documented as Explosive Hazard (MDEH) items identified at the site are kick-outs of small 20 mm projectiles at shallow depths (0 to 4 inches), it would be appropriate to conduct the resurvey using hand-held geophysical equipment to cross-check the anomalies identified by the DGM method and to dig additional anomalies and remove additional material potentially presenting and explosive hazard (MPPEH) items, if any. We believe the resurvey will improve the confidence in the overall performance of this removal action, provide additional safety margins to achieve the project objectives, and meet the goal of conducting the Time-Critical removal Action (TCRA) as a final action at the site.

Attachment 1

Record of Blind Seed Placement, Grid Investigation, and Close-Out

Former MCAS El Toro IRP Site 1 Adjacent Property TCRA

Attachment 1. Record of Blind Seed Placement, Grid Investigation, and Close-Ou

Seed Number	Seed Placement Date	Seed Depth	Seed Placed By	DGM or Mag/Flag Area?	Date Grid Geophysically Mapped	Date Grid Investigated (Reacquire Anomalies)	Date Grid Cleared By QC	Seed GPS Coordinate X - Coord	Seed GPS Coordinate Y - Coord	Date Recovered by Dig Team/Remarks
A-1	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/24/2010	2/26/2010, 3/9/2010	3/24/2010	6124225.487	2198191.24	3/9/2010
A-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6124225.734	2198191.025	Seed was not placed. Point was inadvertently added to GPS. Location is a duplicate of A-1
A-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6124225.695	2198190.789	Seed was not placed. Point was inadvertently added to GPS. Location is a duplicate of A-1
A-4	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/9/2010	2/17/2010	3/22/2010	6123894.13	2197800.872	Seed was placed after DGM mapping and thus not picked as an anomaly. Recovered 3/19 by UXOQCS
A-5	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/18/2010	2/17/2010, 2/25/2010, 3/18/2010	3/22/2010	6123343.063	2197572.526	Seed was detected by DGM and picked as an anomaly but not Included in dig sheet by mistake. Recovered 3/19 by UXOQCS
A-6	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/12/2010	2/24/2010, 3/17/2010	3/24/2010	6123111.492	2197176.73	Seed was recovered as an anomaly but was not documented on the dig results sheet nor returned to UXOQCS (UXOQCS could not locate on 3/19)
A-7	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/16/2010	3/3/2010, 3/17/2010	3/24/2010	6123028.283	2196902.828	3/3/2010
A-8	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/5/2010	3/10/2010	6122753.632	2196828.499	Seed was recovered as an anomaly but was not documented on the dig results sheet nor returned to UXOQCS (UXOQCS could not locate on 3/19)
A-9	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/11/2010	3/19/2010	6122739.812	2197172.304	3/11/2010
A-10	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/23/2010	2/26/2010	3/24/2010	6122915.785	2197395.499	Seed was detected by DGM (weak signal), not picked as an anomaly for investigation. Recovered on 3/19 by UXOQCS
A-11	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/11/2010	3/3/2010, 3/17/2010	3/22/2010	6123154.874	2197691.746	3/17/2010
A-12	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag and DGM	3/1/2010	2/12/2010, 3/9/2010	3/8/2010	6123187.051	2197923.532	Mag and Flag conducted on 2/12/2010 (seed collected). DGM digs conducted on 3/9/2010 after UXOQCS cleared the grid on 3/8/2010
A-13	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/1/2010	3/4/2010	6123487.42	2198057.331	3/1/2010
A-14	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	2/24/2010	3/4/2010	6123775.979	2198146.247	2/24/2010
A-15	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag and DGM	2/25/2010	2/19/2010, 3/3/2010, 3/17/2010	2/23/2010	6123869.043	2198359.611	Mag and Flag conducted on 2/19/2010 (seed collected). UXOQCS cleared grid on 2/23/2010 prior to DGM mapping on 2/25/2010
A-16	2/11/2010	Near Surface	David Tyrer, UXOTII	DGM	2/24/2010	2/26/2010, 3/3/2010	3/24/2010	6124142.955	2198418.113	2/26/2010
A-17	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/9/2010	3/15/2010	6123716.097	2198546.791	3/9/2010
A-18	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/15/2010	3/19/2010	6123917.27	2198538.367	3/15/2010
A-19	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/5/2010	3/8/2010	6123515.739	2198420.555	3/5/2010
A-20	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	2/18/2010	2/23/2010	6123772.276	2198187.409	2/18/2010
A-21	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	2/23/2010	3/4/2010	6123704.267	2198012.008	2/23/2010
A-22	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/5/2010	3/9/2010	6123385.888	2198228.63	3/5/2010
A-23	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/5/2010	3/8/2010	6123200.762	2198115.868	3/5/2010
A-24	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	2/26/2010	3/3/2010	6123094.158	2198049.168	2/26/2010
A-25	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	2/26/2010	3/3/2010	6123008.944	2197899.673	2/26/2010
A-26	2/11/2010	Near Surface	David Tyrer, UXOTII	Mag/Flag	N/A	3/4/2010	3/24/2010	6123320.19	2197836.081	3/4/2010
B-1	2/19/2010	2 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	3/9/2010	3/9/2010	6123378.897	2198231.391	3/9/2010
B-2	2/19/2010	4 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	3/5/2010	3/9/2010	6123306.253	2198169.551	3/5/2010
B-3	2/19/2010	3 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	3/5/2010	3/8/2010	6123181.1	2198108.086	3/5/2010
B-4	2/19/2010	2 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	3/1/2010	3/1/2010	6123144.204	2197996.762	3/1/2010
B-5	2/19/2010	1 inch	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/26/2010	3/1/2010	6123091.321	2197944.627	2/26/2010
C-1	2/11/2010	1 inch	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/18/2010	2/26/2010	6122964.12	2198516.598	2/18/2010
C-2	2/11/2010	2 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/18/2010	2/26/2010	6123020.753	2198634.346	2/18/2010
C-3	2/11/2010	2 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/18/2010	2/26/2010	6123030.435	2198611.303	2/18/2010
C-4	2/11/2010	1 inch	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/18/2010	2/26/2010	6123056.315	2198558.606	2/18/2010
C-5	2/11/2010	2 inches	Ron Vanderford, UXOQCS	Mag/Flag	N/A	2/18/2010	2/26/2010	6123010.369	2198558.934	2/18/2010

Attachment 2

Independent Review of Processed EM-61 Results for El Toro IRP Site 1 Adjacent Property

Review of Processed EM61 Results for El Toro

Brian N. Damiata, PhD, PGp

3/29/10

Introduction

In the late afternoon on Wednesday, 3/24/10, I was approached for an assignment to conduct an independent review of processed EM61 results for a recently conducted survey at El Toro. Given the limited amount of time to conduct this review, the scope cannot be considered exhaustive. A thorough review of this nature would require more time and typically might include the reprocessing of selected portions of the collected raw data.

The following review is an evaluation of the procedures that were used to determine ("pick") anomalies in the processed EM data. This review does not involve the independent picking of new anomalies, but rather evaluates the consistency in the application of procedures that were used by AECOM to pick anomalies. In addition, this review does not include evaluation of data-collection procedures. To facilitate the discussion, a brief review of the operation and output of the EM61 unit is in order.

Description of Data Collected

The EM61 unit is the standard piece of geophysical equipment that is deployed to detect metal debris for UXO investigations. It is a coiled system that is designed to collect 4 channels of data that are recorded in milliVolts (mV). Each channel (Ch) has a different recording window (time gate) with the first channel having the shortest and the fourth channel the longest. The longer the time window, the greater is the effective depth of sensing. Based on years of experience by numerous investigators, the response from Ch3 has shown to be particularly useful for UXO investigations.

AECOM's Procedures for Processing the Data and Selecting Anomalies

In the industry, there is no universally agreed upon method for processing EM61 data and interpreting (i.e., picking) anomalies. For the present case, it is my understanding that the raw data were imported into Oasis Montaj software where each of the four channels was subjected to

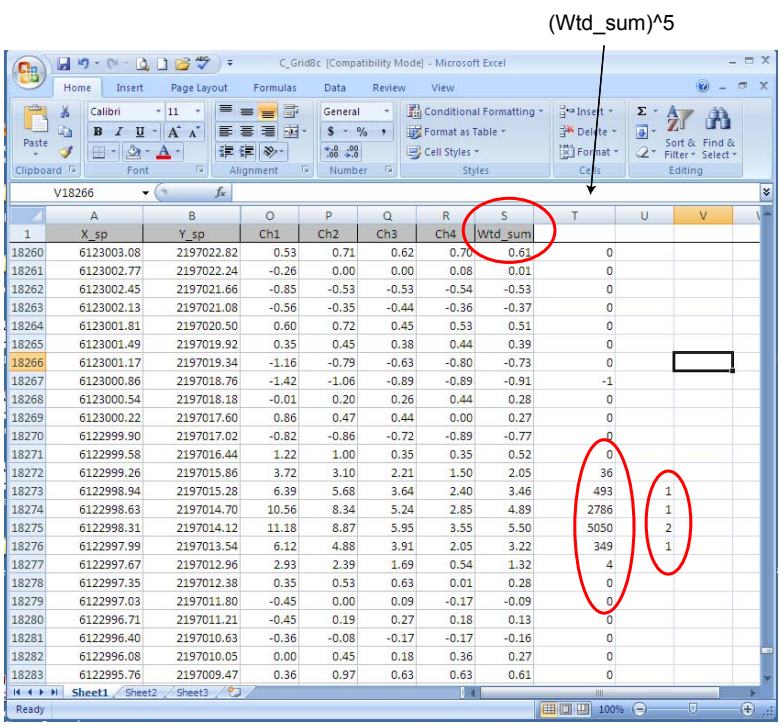
a 100-point median filter. The purpose of this filtering is to normalize the data to an approximate zero baseline (i.e., remove the background) on all channels.

The median-filtered data were then imported into Excel spreadsheets with typically one day's worth of data contained in a single file. Using the macros available in Excel, a weighted filter was then applied having the form:

Weighted Sum (Wtd_sum) = (0.1023 * Ch1 Reading) + (0.156 * Ch2 Reading) + (0.25 * Ch3 Reading) + (0.4194 * Ch4 Reading)

The rationale for using these particular coefficients in the filter is that when recorded over homogenous ground in the absence of conductors (i.e., metal), the Wtd_sum value should approximately equal the value for Ch3. In addition, in certain cases in the presence of an elongated metal conductor (e.g., a projectile), one might expect the progression of values from Ch1 to Ch4 to be approximately one-half of the value of the preceding channel (i.e, the value for Ch4 would be one-half of that for Ch3, etc.). This is approximate and depends highly on the orientation and depth of the conductor.

Figure 1 shows the typical output after the filtering.



	A	B	O	P	Q	R	S	T	U	V
1	X_sp	Y_sp	Ch1	Ch2	Ch3	Ch4	Wtd_sum			
18260	6123003.08	2197022.82	0.53	0.71	0.62	0.70	0.61	0		
18261	6123002.77	2197022.24	-0.26	0.00	0.00	0.08	0.01	0		
18262	6123002.45	2197021.66	-0.85	-0.53	-0.53	-0.54	-0.53	0		
18263	6123002.13	2197021.08	-0.56	-0.35	-0.44	-0.36	-0.37	0		
18264	6123001.81	2197020.50	0.60	0.72	0.45	0.53	0.51	0		
18265	6123001.49	2197019.92	0.35	0.45	0.38	0.44	0.39	0		
18266	6123001.17	2197019.34	-1.16	-0.79	-0.63	-0.80	-0.73	0		
18267	6123000.86	2197018.76	-1.42	-1.06	-0.89	-0.89	-0.91	-1		
18268	6123000.54	2197018.18	-0.01	0.20	0.26	0.44	0.28	0		
18269	6123000.22	2197017.60	0.86	0.47	0.44	0.00	0.27	0		
18270	6122999.90	2197017.02	-0.82	-0.86	-0.72	-0.89	-0.77	0		
18271	6122999.58	2197016.44	1.22	1.00	0.35	0.35	0.52	0		
18272	6122999.26	2197015.86	3.72	3.10	2.21	1.50	2.05	36		
18273	6122998.94	2197015.28	6.39	5.68	3.64	2.40	3.46	493	1	
18274	6122998.63	2197014.70	10.56	8.34	5.24	2.85	4.89	2786	1	
18275	6122998.31	2197014.12	11.18	8.87	5.95	3.55	5.50	5050	2	
18276	6122997.99	2197013.54	6.12	4.88	3.91	2.05	3.22	349	1	
18277	6122997.67	2197012.96	2.93	2.39	1.69	0.54	1.32	4		
18278	6122997.35	2197012.38	0.35	0.53	0.63	0.01	0.28	0		
18279	6122997.03	2197011.80	-0.45	0.00	0.09	-0.17	-0.09	0		
18280	6122996.71	2197011.21	-0.45	0.19	0.27	0.18	0.13	0		
18281	6122996.40	2197010.63	-0.36	-0.08	-0.17	-0.17	-0.16	0		
18282	6122996.08	2197010.05	0.00	0.45	0.18	0.36	0.27	0		
18283	6122995.76	2197009.47	0.36	0.97	0.63	0.63	0.61	0		

Figure 1. Typical Output for Processed Data.

The Wtd_sum values are given in Column S. To help enhance the data for the picking of anomalies, the Wtd_sum values raised to the 5th power were calculated and outputted to Column T. Further, values of Column T that were in excess of 100 were flagged and outputted to Column U. Values over 100 were flagged because the value of 2.5 raised to the 5th power approximately equals 100. In other words, a 2.5 mV threshold was used as an additional criterion to determine if a Potential Anomaly exists.

The identification of a Potential Anomaly does not necessarily make it an actual Picked Anomaly. Some reasons for rejecting a Potential Anomaly include (but not limited to):

(1) Several Potential Anomalies may be associated with the same source (i.e., detected on adjacent parallel transects). To determine this, the Potential Targets have to be culled and those at a similar location need to be eliminated except for the one yielding the highest Wtd_sum value, which presumably is located closest to the source. For the present case, AECOM used a 4 foot radius to cull the data.
(2) The decay progression of values from Ch1 to Ch4 does not follow a slope that might indicate the presence of a cylindrical metal source.
(3) The Potential Anomaly may be due to a known cultural feature.

Each Excel file of processed data contained two sheets. The first sheet contained the processed data (as depicted in Figure 1) and the second contained the Picked Anomalies as determined by AECOM.

In summary, the method that was employed to pick anomalies from the raw data included filtering, the identification of Potential Anomalies using a Wtd_sum and 2.5 mV criteria, and the culling and elimination of Potential Anomalies based on the decay progression and other information (e.g., due to known cultural source). Those remaining anomalies were then considered as Picked Anomalies.

Evaluation of the Processed Results

I was initially supplied with 24 individual Excel files of processed data. A single file typically represents a single day of data collection, or for a specific mode of collection (e.g., data collected in wheel mode). In addition, I was supplied with an Excel file "Anomaly Table (thru_16Mar10_post)". Table 1 summarizes the specifics for each processed data file.

Table 1. Specifics of Excel Processed Data Files that were Reviewed

File Name	Data Entries	Number of Potential Anomalies I Identified	Number of Picked Anomalies by AECOM	Estimated Number of Additional Picked Anomalies[1]
02080910_sp_ft	104,471	146	9	>35
021210_Wheel	11,609	18	13[2]	1
021211A(sp)	11,609	17	7-10?[3]	1[4]
021215A_021613A	21,891	45	26	0
021717e	26,084	25	16	1
021811c_021817A	76,582	187	11[5]	>40
021910_sp	32,947	55	5	>20
021010_sp1	45,957	54	5	>15
022213a	36,194	19	9	0
022310_sp	47,380	39	17	1
022410	60,011	61	36	1
022510	42,767	63	31	2
022610a(sp)	23,473	25	15	0
030110(sp1)	36,699	72	23	>10
030310(sp)	37,482	48	7	5
030410_sp	32,434	46	8	0
030510_sp	18,973	33	15	4
030810_sp2	20,839	33	21	0
030910_sp	25,806	38	16	2
031010_sp	15,663	9	3	0
031510_sp	17,412	21	8	1[6]
031610_sp	1,448	4	4	0
Grid8c	19,008	29	16	1
Total	**766,739**	**1,087**	**321-324?**	**>140**

[1]as estimated by using the picking scheme employed by AECOM
[2]13 anomalies selected but only 11 found in Anomaly Table
[3]10 anomalies appear to have been selected but only 7 appear in Anomaly Table, all of which are duplicates of anomalies from file 021210_Wheel. The relationship between the two files is unclear.
[4]Although this anomaly does not appear in the Picked Anomaly sheet, it does appear in the Anomaly Table.
[5]11 anomalies appear in the Picked Anomaly sheet and Anomaly Table, an additional 14 appear only in the Picked Anomaly sheet (possibly done as a QCcheck?)
[6]An additional entry was in the Picked Anomaly sheet but had no ID associated, nor could it be found in the Anomaly Table.

As part of the review, I scrolled through each Excel file in its entirety. Approximately 770,000 lines were inspected. For each given file, I identified and grouped the Potential Anomalies. In total, over 1,000 Potential Anomalies were identified in the 23 files as summarized in Table 1.

For each file, I then compared the Potential Anomalies against the Picked Anomalies as had been determined by AECOM, and listed in sheet 2 of each file. I could readily see why some Potential Anomalies were discarded (e.g., several Potential Anomalies located in close proximity that could be attributed to a single source; a flat decay curve, etc.). However, there were others whose reason for exclusion was not readily apparent. They were above the threshold value of 2.5 mV and had moderate to good decay curves. There was a lack of documentation in the file to explain the exclusion of certain Potential Anomalies. Were they excluded for some valid reason, or simply missed? I then made an Estimation of the Number of Additional Picked Anomalies for each file as summarized in Table 1 (>140). I stress that these numbers are estimates and individual picks still need to be rigorously checked (e.g., against known cultural features, observations in field notes, etc.) to determine if there is some valid reason for their exclusion.

It is my conclusion is that the selecting criteria were not applied consistently and that there are Potential Anomalies that should have been selected as Picked Anomalies but were missed. Many of these have Wtd_sum values in the range between 2.5 and 3.0 mV with nominal decay progression, and thus appear to be marginal type of targets at best. A sufficient number, however, had responses that were similar in nature to other picks that had been previously made.

Summary and Concluding Remarks

A review of processed EM61 results for a recently conducted survey at El Toro was undertaken. This review did not involve the independent picking of new anomalies (i.e., reprocessing of the raw data), but rather evaluated the consistency of the existing process that was used to pick anomalies.

Using the previously established criteria for picking anomalies that is based on the weighted sum value, a 2.5 mV threshold and interpretation of the decay progression, I conclude that there were Potential Anomalies that should have been included as Picked Anomalies. Like all interpretations of this type of geophysical data, there is an element of subjectivity involved. For the present case the subjectivity involves assessing the decay progression. The one employed

here based on the one-half drop-off in values between adjacent channels is appropriate. In addition, the use of a 2.5mV threshold cut-off as a second condition is a fairly conservative criterion. Thus, I believe that many of the proposed picks are for marginal targets at best. However, there were a sufficient number of Potential Anomalies that clearly should have been included as Picked Anomalies, having both a relatively high weighted sum value and good decay progression.

As previously noted there is no universally adopted method to process and analyze EM61 data for UXO investigations. The method adopted by AECOM for the present project includes the use of Oasis Montaj software to perform initial filtering of the data, followed by additional filtering using Excel spreadsheets. Interpretations are based on a feedback between the Excel output and contour maps of the data. To visually check processing results on the Excel sheets, however, is labor intensive. The major problem that I encountered was a lack of sufficient documentation of the processed results to facilitate rapid inspection and analysis of the data. If the same processing scheme is used in the future, I suggest that the Excel file contain three sheets. The first sheet would contain all of the data, the second sheet would be a listing of all the culled Potential Anomalies (with pertinent channel data and weighted mean calculations) with interpretations as to why or why not they should be included as Picked Anomalies. The third sheet should contain the relevant data for the Pick Anomalies that are to appear on the Anomaly Target lists.

Appendix H
Quality Assurance Report

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Final

Independent 3rd Party Quality Assessment Quality Assurance Summary Report for the Time-Critical Removal Action at Installation Restoration Program Site 1, Adjacent Property

Former MCAS El Toro, California

September 2010

Prepared for:
Department of the Navy
Base Realignment and Closure
Program Management Office West
San Diego, California

Prepared by:
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Prepared under:
Naval Facilities Engineering Command Southwest
Contract Number N62473-07-G-8201
Contract Task Order 0002

Independent 3rd Party Quality Assessment
Quality Assurance Summary Report for the
Time-Critical Removal Action at
Installation Restoration Program Site 1, Adjacent Property
Former MCAS El Toro, California

Submitted by:
Engineering/Remediation Resources Group, Inc.

	September 15, 2010
Signature	Date
Frank Cota	MEC Project Manager

Table of Contents

SECTION 1. INTRODUCTION 1-1
1.1. Site Description 1-1
1.2. Project Objective and Scope 1-1

SECTION 2. QUALITY ASSURANCE OVERSIGHT METHODS AND APPROACH 2-1

SECTION 3. QA SPECIALIST INSPECTION AND AUDIT ACTIVITIES 3-1
3.1. Safety and Site Control 3-1
3.2. Equipment Function Testing and Operation 3-2
3.3. Geophysical and MEC Operations 3-2
3.4. UXOQC and Site Documentation and Demolition Operations 3-3
3.5. Blind Seed Program 3-4

SECTION 4. QA ACTION CONCLUSIONS 4-1

SECTION 5. REFERENCES 5-1

List of Tables

Table 1. QA Field Activity Outline
Table 2. Data Quality Objectives

List of Appendices

Appendix A. ERRG QA Blind Seeding Report
Appendix B. ERRG QA Blind Seeding SOP
Appendix C. QA Audit Summary Table, Checklists, and Audits
Appendix D. ERRG Field QA Daily and Weekly Reports

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
DON	Department of the Navy
DQOs	data quality objectives
EOD	explosive ordnance disposal
ERRG	Engineering/Remediation Resources Group, Inc.
GPS	global positioning system
IRP	Installation Restoration Program
MCAS	Marine Corps Air Station
MEC	munitions and explosives of concern
MPPEH	material potentially possessing explosive hazard
MRSs	Munitions Response Sites
QA	quality assurance
QC	quality control
QAPP	quality assurance program plan
SOPs	standard operating procedures
TCRA	time-critical removal action
UXO	unexploded ordnance
UXOQC	unexploded ordnance quality control

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Section 1. Introduction

Engineering/Remediation Resources Group, Inc., (ERRG), under contract to Department of the Navy (DON), was tasked to develop and implement a Quality Assurance Project Plan and an addendum to the QAPP to provide third-party quality assurance (QA) oversight services at the former Marine Corps Air Station (MCAS) El Toro in California (ERRG, 2010a and 2010b). This report pertains specifically to QA oversight conducted for a time-critical removal action (TCRA) performed by AECOM Technology Services, Inc. (AECOM) to address potential explosive safety hazards on property located immediately to the west of and adjacent to Installation Restoration Program (IRP) Site 1, the Explosive Ordnance Disposal (EOD) Training Range, at the former MCAS El Toro (hereinafter referred to as "the Adjacent Property"). DON is required to perform QA on all munitions work being conducted at this location to ensure safe processes and to document quality checks.

1.1. SITE DESCRIPTION

The Adjacent Property is located in the foothills of the Santa Ana Mountains. The site currently consists of open space and is immediately west of IRP Site 1, which is in the northeast portion of former MCAS El Toro. IRP Site 1 was used for training for EOD from 1952 until closure of former MCAS El Toro on July 2, 1999. IRP Site 1 is approximately 73.7 acres in size, comprising the Northern EOD Training Range (16.9 acres), the Southern Training Range (16.6 acres), and a buffer zone (40.2 acres). Most of the military EOD training took place at the Northern EOD Training Range (AECOM, 2009b).

1.2. PROJECT OBJECTIVE AND SCOPE

The overall objective of the TCRA was to evaluate the presence, types, and distribution of munitions, followed by removal of identified munitions, to address potential explosive safety hazards at the Adjacent Property (AECOM, 2009b). Munitions and explosives of concern (MEC) and material potentially possessing an explosive hazard (MPPEH) have been recovered on the Adjacent Property. These items are likely kick-outs from EOD training activities conducted within IRP Site 1 and may pose explosive safety hazards. For the TCRA, the Adjacent Property was subdivided into the following three areas: Area A, Area B, and Area C (AECOM, 2009b).

Prior to the start of the TCRA, ERRG prepared a QAPP and QAPP Addendum, in conjunction with input from the DON (ERRG, 2010a and 2010b). The QAPP Addendum was prepared to address the 3rd party QA objectives and processes to be implemented and followed during a second field operations phase. The QAPP and QAPP Addendum were approved for use during the field activities phase of the TCRA.

The scope of the QAPP and QAPP Addendum consisted of identifying and implementing the procedures and organization necessary to ensure that QA requirements as they relate to the Military Munitions Response Program for MEC and the scope of work for the TCRA (provided in Section 2.2 of the TCRA work plan [AECOM, 2009b]. The objective of the MEC QA effort is to provide 3rd party oversight (1) to assess the quality of the fieldwork performed at MRSs, (2) to verify that the required activities are executed in accordance with the work plans and procedures and conform to health and safety requirements, and (3) to ensure that the contractor's stated and actual results exhibit a high degree of confidence of their work at MRSs.

ERRG began QA field activities at the Adjacent Property on February 1, 2010, with a preparatory meeting, review of project documents, and an audit of the qualifications of AECOM's unexploded ordnance (UXO) personnel. During TCRA field activities, the retrieval of quality control (QC) seeds was incomplete; as a result, additional field activities were required to ensure the objectives of the TCRA work plan were fulfilled. Therefore, an additional fieldwork phase at the Adjacent Property was implemented to achieve an acceptable confidence level that the project site area was sufficiently investigated. The additional phase included a reinvestigation of geophysically mapped anomalies, resulting in negative contact of an identifiable anomaly source (i.e., "No Finds") and 95 potential anomalies detected during the geophysical mapping process, but not selected for investigation by geophysical data analysts. The additional phase of work required a QAPP addendum be prepared to address the 3rd party QA approach and methods specific to the secondary phase. The QAPP Addendum specified that the QA Program should include and apply a Blind Seed Program (ERRG, 2010). The QA Blind Seed Program is a QA process where QA personnel strategically place simulated UXO items within the project area to test and validate (1) that the MEC teams are providing complete coverage of the area and (2) the quality of the detection process. The validity of blind seeding as a QA tool is based on assumptions that seed items will accurately mimic actual MEC items expected to be found in the field, in this instance a 20-millimeter (mm) projectile.

Fieldwork was conducted in the following two phases: phase 1 from February 1 through March 11, 2010; and phase 2 from May 18 through June 11, 2010. This report details the QA results for both phases of the TCRA field activities.

Section 2. Quality Assurance Oversight Methods and Approach

ERRG conducted QA oversight of field activities during the TCRA at the Adjacent Property to ensure procedures were conducted in accordance with the TCRA work plan (AECOM, 2009b) and the QAPP and QAPP Addendum (ERRG, 2010a and 2010b). The QAPP and QAPP Addendum were developed to suit the specific QA needs for the Adjacent Property throughout the duration of TCRA field activities performed by AECOM. The QAPP identified the following data quality objectives (DQOs) for the MEC effort to assess the quality of the fieldwork performed by AECOM at the Adjacent Property:

- Assess the contractor field teams' overall explosive management program.
- Assess the contractor's field operations using their site-specific standard operating procedures (SOPs).
- Assess the contractor's personnel qualifications.
- Assess the MEC and geophysical QC program and on-site procedures, activities, and documentation for unexploded ordnance quality control (UXOQC).
- Assess the detection of anomalies and removal of MEC.
- Assist with procedures for correcting deficiencies.

The QA Specialist had overall responsibility for QA activities during fieldwork, as well as implementing the DQOs listed above. During phases 1 and 2 of TCRA field activities, the QA Specialist (1) evaluated overall compliance with the Work Plan and with MEC-specific and Occupational Safety and Health Administration safety standards, and (2) performed QA audits on specific MEC operations and inspections using the Compliance Checklist as specified by the QAPP Addendum (ERRG, 2010). The QA Specialist also observed intrusive operations to ensure proper use of the magnetometers and excavation techniques and proper clearance of all detected anomalies. Additionally, during phase 2, the QA Specialist's observations were integral in tracking the QA blind seeds and the contractor's recovery of blind seeds to ensure the effectiveness of the procedures for detecting anomalies.

Table 1 outlines the specific QA field activities, including the definable features of work, oversight methods, documentation used, and performance indicators. The QA Specialist used Table 1 as a guideline during all QA field activities. Table 2 summarizes whether each DQO identified above was met during field activities. Appendix A contains a table summarizing each operation or area audited, their respective QA Audit numbers, the Compliance Checklists used, and the QA Audits generated by the QC Specialist. Appendix B contains ERRG personnel's QA Daily and Weekly Reports.

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Section 3. QA Specialist Inspection and Audit Activities

Initial QA Inspections concentrated on contractor compliance and continued with observations and inspections conducted during each QA field day. The QA compliance inspections were performed using the QA Compliance Checklist; completed checklist are provided in Appendix A. The following categories were evaluated during the compliance inspections:

- Project Personnel Familiarity and Training with Work Plan and Project Documents
- Documentation Requirements
- QC
- Site Safety and Health Plan
- Personnel Requirements and Certifications
- Explosive Management
- Construction/UXO Escort Support

The main focus of the follow-up QA inspections and observations were on adherence to the work plan, compliant execution of MEC field operations, management of explosives (including demolition), geophysical operations, proper use of equipment (including its function), and project documentation. All QA inspections and observations were documented using the QA Inspection and Audit Log (Appendix A). Every aspect of the following MEC operations was observed:

- Safety and Site Control
- Equipment Function Testing and Operation
- Geophysical and MEC Operations
- UXOQC and Site Documentation and Demolition Operations

The following subsections discuss the field QA observations made during 3rd party oversight of the TCRA.

3.1. SAFETY AND SITE CONTROL

The ERRG QA Specialist regularly conducted safety inspections and observations on a daily basis to ensure safe work practices were being implemented during all fieldwork, and to ensure that AECOM UXO safety escorts were available during vegetation removal activities by subcontractors or when

visitors were on site, these observations and inspections were documented on the MEC QA Inspection and Audit Log and are provided in Appendix C of this document. The QA Specialist observed the UXO safety escorts as they assisted in maintaining exclusion zones between operations and in preventing injuries to AECOM and non-AECOM personnel from MEC or unsafe hillside conditions. Site personnel and visitors were briefed daily on areas with uneven ground or where steep hills were of concern on the site. Providing daily briefings helped to reduce complacency of workers and visitors and ensured operations were conducted safely on a daily basis.

Additionally, large patches of poison oak were identified at the site, thus strict decontamination procedures were implemented for all field personnel. AECOM adjusted to this situation by training site personnel on poison oak and using enhanced PPE requirements (such as Tyvek protective coveralls, booties, and gloves).

AECOM personnel were diligent in maintaining awareness and keeping site gates locked at all times. Overall, AECOM personnel implemented excellent site security and safety procedures throughout the project.

3.2. EQUIPMENT FUNCTION TESTING AND OPERATION

During QA inspections, the QA Specialist observed how the following field equipment functioned: (1) hand-held detectors and the EM61 at the geophysical test strip, and global positioning system (GPS) rover units at the predetermined control point. Additionally, the QA Specialist checked radios on a daily basis to ensure proper site communications. AECOM personnel understood that the importance of checking equipment function because properly operating hand-held detector equipment (White's, EM-61, and GPS units) was necessary for the proper execution detection and removal of underground anomalies. The QA Specialist observed that AECOM personnel regularly checked their equipment, and that AECOM personnel were trained thoroughly on their respective equipment prior to operations. As shown in the audit checklists and MEC QA inspection and audit logs found in Appendix C, the QA Specialist noted equipment was operated properly during the QA inspections and field activities.

3.3. GEOPHYSICAL AND MEC OPERATIONS

The QA Specialist performed daily inspections to evaluate the geophysical and MEC team's compliance with the requirements of the work plan and the Military Munitions and Response Program. The QA Specialist noted that the geophysical teams were implementing the geophysical test strip every morning, as required in the TCRA work plan (AECOM, 2009b), and operating the EM61 in safe and efficient manner. During reacquisition of anomaly operations, the GPS rover unit was checked daily to ensure it was functioning properly. The QA Specialist noted that, during reacquisition operations, suspect anomalies were marked with a pin flag to ensure that MEC teams could locate the anomaly as close to the

pin flag as possible. The QA Specialist also noted that reacquisition of selected anomalies was performed prior to intrusive operations to ensure production efficiency by the MEC teams.

The QA Specialist audited MEC teams to confirm they were properly using hand-held detectors, detecting and pinpointing anomalies, using anomaly avoidance and excavation techniques, and clearing the excavation of all anomalies. The MEC teams worked safely, always implementing the proper handling procedures when MEC or MPPEH was discovered, handled, and stored. The QA Specialist performed multiple QA inspections and audits of the MEC team, including during the intrusive investigation, Mag and Dig operations, and sweep operations for specific areas. Copies of these inspections are provided in Appendix A.

During phase 2 of TCRA activities, the QA Specialist performed inspections on no less than 10 percent of the areas where MEC and UXOQC teams completed work. The inspections were conducted in the Mag and Dig areas, as well as on the "No Finds" from the first mobilization and the reacquisition of the 95 anomalies that were not included in the initial dig list during the phase 1 field activities. The Activities Audit Table in Appendix A presents the QA Audit documentation (see QA 10% Inspections under column 1, MEC Operation/Activity Audited).

3.4. UXOQC AND SITE DOCUMENTATION AND DEMOLITION OPERATIONS

The QA Specialist observed UXOQC preparatory and initial meetings and inspections during both phases of field activities and recorded the results of these inspections on the QA compliance checklists, provided in Appendix C. Additionally, the QA Specialist inspected whether AECOM personnel were conducting QC follow-up inspections of field MEC operations to ensure UXOQC procedures complied with the QC Plan found in Section 4 of the TCRA work plan (AECOM, 2009b). In addition to QA field inspections of QC activities, the QA Specialist periodically inspected QC documentation and found it to be available and in order. During both phases of field activities, the QA Specialist reviewed files for AECOM site personnel verifying that the required training and certification documentation for all site personnel were current and filed on site.

The QA Specialist also performed a UXOQC inspection and QA oversight of AECOM personnel's handling and management of MEC, MPPEH, and material documented as safe. The QA Specialist observed that AECOM personnel's properly handled MEC and MPPEH during field operations, and that MEC and MPPEH items discovered during anomaly investigations were properly documented, tracked, and stored in the magazine at IRP Site 1, inspections were documented on the MEC QA inspection and audit logs provided in Appendix C. The Senior UXO Supervisor, UXOQC Specialist, and the state of California-licensed blaster conducted the Demolition Preparatory meeting prior to demolition operations to ensure proper understanding of the operation and each participant's role. The QA Specialist observed that AECOM personnel safely performed all demolition operations and within compliance of DON guidance (Naval Sea Systems Command, 2007) and state and local regulations.

3.5. BLIND SEED PROGRAM

The Blind Seed Program for the Adjacent Property included QA inspection of no less than 10 percent of (1) all excavations in the designated Mag and Dig area, and (2) the overall investigation area (ERRG, 2010b). The ERRG QA Manager, with assistance of the QA Specialist, planned, implemented, and tracked the blind seed action. Specifically, ERRG QA personnel placed blind seeds in the adjacent property grids identified in the QA Blind Seed Report in Appendix C at a rate of no less than 10 percent of AECOM's 25 percent blind seeding for UXOQC. In total, seven QA seeds were placed in accordance with the ERRG QA Blind Seed SOP (Appendix D), and the locations were documented in the ERRG QA Blind Seed Report (Appendix C). When AECOM's MEC teams detected the blind seeds, ERRG QA personnel concluded that MEC operations and procedures were working as planned. If the MEC teams failed to find a blind seed, then QA personnel concluded the detection process is either inadequate or being implemented inadequately.

During phase 1 of TCRA activities, ERRG QA personnel placed 36 blind seeds at the site prior to the start of any geophysical or MEC operations. Of the 36 QC seeds, 34 were discovered by the MEC teams. AECOM's Geophysical QC Specialist and UXOQC Specialist, as well as ERRG's QA Specialist, failed to recover the remaining two seeds before fieldwork was completed. Corrective actions to address the failure could not be accomplished during phase 1; as a result, corrective actions were addressed during the phase 2 activities, along with the implementation of the ERRG QA blind seeding action.

During placement of QA blind seeds, the QA Specialist and QA Manager recorded, documented, and tracked the depth, bearing, attitude, and locations of the blind seeds. This documentation ensured the location of the blind seeds was confidential and maintained the validity of the QA objectives of the blind seed program. In total, seven QA blind seeds were placed, documented, and tracked for eventual discovery by AECOM UXO personnel (see Appendix C for the QA Blind Seed Report). Placement of QA blind seeds provided a method to check the Mag and Dig team's ability to check anomalies, excavation technique, and clearance confidence. AECOM MEC teams reported the recovery of blind seeds to the UXOQC and ERRG QA Specialist on a daily basis until all QA/QC seeds were recovered. The ERRG QA Specialist tracked both the QA and QC recovery of blind seeds by the MEC teams to ensure AECOM's tracking of UXOQC seeds. AECOM successfully recovered all QA and QC blind seeds during phase 2 of the field project, thus meeting the requirements of the TCRA work plan (AECOM, 2009b). A table tracking the QA/QC recovery of blind seeds and documenting 100 percent seed recovery during the second site mobilization is included in the QA Blind Seed Report (Appendix C).

Section 4. QA Action Conclusions

Based on the inspections and observations made during 3rd party oversight of MEC activities performed during the TCRA at the Adjacent Property, ERRG concluded that AECOM satisfactorily performed all work in compliance with the work plan, including the DQOs presented in Table 2, and the requirements of the Military Munitions and Response Program. Additionally, ERRG's QA oversight responsibilities as noted in the QAPP and QAPP addendum are complete for IRP Site 1.

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Section 5. References

AECOM Technical Services, 2009a. "Final Explosives Safety Submission, Time-Critical Removal Action, Installation Restoration Program Site 1, Adjacent Property, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. November.

AECOM Technical Services, 2009b. "Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. December.

Engineering/Remediation Resources Group, Inc. (ERRG), 2010a. "Quality Assurance Project Plan (QAPP), Independent 3rd Party Quality Assurance, Munitions Time-Critical Removal Action, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. February.

ERRG, 2010b. "Final Independent 3rd Party Quality Assessment, Quality Assurance Project Plan Addendum for Munitions Time-Critical Removal Action, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. May.

Naval Sea Systems Command, 2007. "Ammunition and Explosives Safety Ashore." NAVSEA OP5 Volume 1, Seventh Revision. March 1.

U.S. Department of Defense (DoD), 2004. DoD Directive 6055.9, "DoD Ammunition and Explosives Safety Standards." October. Available Online at: <http://www.ddesb.pentagon.mil/DoD6055.9-STD%205%20Oct%202004.pdf>.

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Tables

Table 1. QA Field Activity Outline

Definable Feature of Work	Reference[1, 2, 3]	Oversight Method	Documentation	Performance Indicators
▪ Work Plan Execution	▪ Work Plan	▪ Initial Compliance ▪ Periodic Field Follow-up Inspection	▪ QA Inspection and Audit Log ▪ Checklists	▪ Compliance with approved plans ▪ Personnel knowledgeable of plan requirements ▪ Personnel meeting qualifications ▪ Resources managed effectively
▪ QC	▪ Work Plan	▪ Periodic Review of QC Documentation	▪ QA Inspection and Audit Log ▪ Checklists	▪ Pass/fail rate on QC inspections ▪ Root cause analysis and correction process ▪ Blind seed recovery rate
▪ Blast and Fragmentation Protection	▪ Work Plan ▪ ESS ▪ DOD6055.9-STD	▪ Periodic Field Inspection	▪ QA Inspection and Audit Log	▪ Appropriate exclusion zones maintained ▪ Nonessential personnel not within exclusion zone ▪ Engineering controls used ▪ Demolition per ESS
▪ MPPEH Handling	▪ Work Plan ▪ DOD6055.9-STD	▪ Periodic Field Inspection	▪ QA Inspection and Audit Log	▪ No non-MEC items commingled with MEC ▪ Security of certified MDAS containers ▪ Demilitarization complete
▪ Intrusive and Anomaly Investigation Operations	▪ Work Plan	▪ Periodic Field Inspection	▪ QA Inspection and Audit Log	▪ Safe work practices for MEC ▪ Anomaly recovery per Work Plan and ESS ▪ Proper documentation of recovered items

Table 1. QA Field Activity Outline *(continued)*

Definable Feature of Work	Reference[1, 2, 3]	Oversight Method	Documentation	Performance Indicators
▪ Anomaly Detection Confidence	▪ Blind Seeding Action ▪ ERRG QA Blind Seed SOP	▪ Area Seeded ▪ Recorded and Tracked as Discovered	▪ QA Seed Tracking Maintained by ERRG QA Manager	▪ All blind seeds recovered–pass ▪ One or more missed–fail; evaluation and corrective action recommended

Notes:

1 = AECOM Technical Services, 2009a. "Final Explosives Safety Submission, Time-Critical Removal Action, Installation Restoration Program Site 1, Adjacent Property, Explosive Ordnance Disposal Training Range, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. November.

2 = AECOM Technical Services, 2009b. "Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station, El Toro, California." Prepared for Department of the Navy, Base Realignment and Closure Program Management Office West. December.

3 = U.S. Department of Defense (DoD), 2004. DoD Directive 6055.9, "DoD Ammunition and Explosives Safety Standards." October. Available Online at: <http://www.ddesb.pentagon.mil/DoD6055.9-STD%205%20Oct%202004.pdf>.

ERRG = Engineering/Remediation Resources Group, Inc.

ESS = explosives safety submission

MEC = munitions and explosives of concern

MDAS = material determined as safe

MPPEH = material potentially possessing an explosive hazard

QA = quality assurance

QC = quality control

SOP = standard operating procedure

Table 2. Data Quality Objectives

	What is the DQO?	How Was It Assessed?	Was the DQO Met?
1.	Assess the contractor field teams' overall explosive management program.	All available documentation for the project was reviewed.	Yes
2.	Assess the contractor's field operations using their site-specific SOPs.	A QA Compliance Checklist to evaluate the SOPs was developed.	Yes
3.	Assess the contractor's personnel qualifications.	Personnel qualifications were reviewed during completion of the QA Compliance Checklist.	Yes
4.	Assess the MEC and geophysical QC program and on-site procedures, activities, and documentation for UXOQC.	Construction and functionality of geophysical test strip was observed and verified by QA specialist.	Yes
5.	Assess the detection of anomalies and removal of MEC.	The ERRG QA Manager, with assistance of the QA Specialist, planned, implemented, and tracked the blind seed action. Specifically, ERRG QA personnel placed blind seeds in the adjacent property grids identified in the QA Blind Seed Report in Appendix C at a rate of no less than 10 percent of AECOM's 25 percent blind seeding for UXOQC.	Yes
6.	Assist with procedures for correcting deficiencies.	Deficiencies in the recovery of QC blind seeds during phase 1 were addressed during phase 2 through implementation of QC and QA seeding procedures. Seed recovery was verified.	Yes

Notes:

AECOM = AECOM Technical Services, Inc.

DQOs = data quality objectives

ERRG = Engineering/Remediation Resources Group, Inc.

MEC = munitions and explosives of concern

QA = quality assurance

QC = quality control

SOPs = standard operating procedures

UXOQC = unexploded ordnance quality control

Appendix A. ERRG QA Blind Seeding Report

May 21, 2010

QA BLIND SEEDING ACTION

Present on action:

Personnel	Title	Employer
Frank Cota	MEC Operations Manager	ERRG
German Peña	MEC QA Specialist	ERRG
Luis Fierro	MEC QA Specialist	ERRG

Work Accomplished:
QA Specialist German Peña attended the Blind Seeding Preparatory meeting prior to emplacing a total of seven specific blind seed items at the former MCAS El Toro, IRP Site 1, Adjacent Property at predetermined depths and attitudes as indicated in the Seeding Chart. The chart also contains the Easting and Northings of the seeds, which were captured using a Trimble GPS system and backed up with a Motion X GPS as a secondary unit.

QA SEEDING CHART

Item Number	Seed ID No.	Picture No.	Item Description	Exact Location		Depth	Horizontal	Vertical	Comments
				Easting	Northing				
01	QA 01	A-2	1” x 4” Pipe	7418905.472	629919.458	8-inch	X		Grid 30
02	QA 02	A-3	1” x 4” Pipe	7418548.350	630037.107	4-inch	X		Grid 28
03	QA 03	A-4	1” x 4” Pipe	7418721.152	629631.200	2-inch		X	Grid 25
04	QA 04	A-5	1” x 4” Pipe	7418097.862	629154.248	6-inch	X		Grid 13
05	QA 05	A-6	1” x 4” Pipe	7417814.279	629124.241	6-inch	X		Grid 10
06	QA 06	A-7	1” x 4” Pipe	7417836.362	628826.624	8-inch	X		Grid 5
07	QA 07	A-8	1” x 4” Pipe	7417692.551	628487.982	4-inch	X		Grid 1

ERRG Operations Manager

Photograph A-1. QA Blind Seeds

Photograph A-2. QA Seed 01

Photograph A-3. QA Seed 02

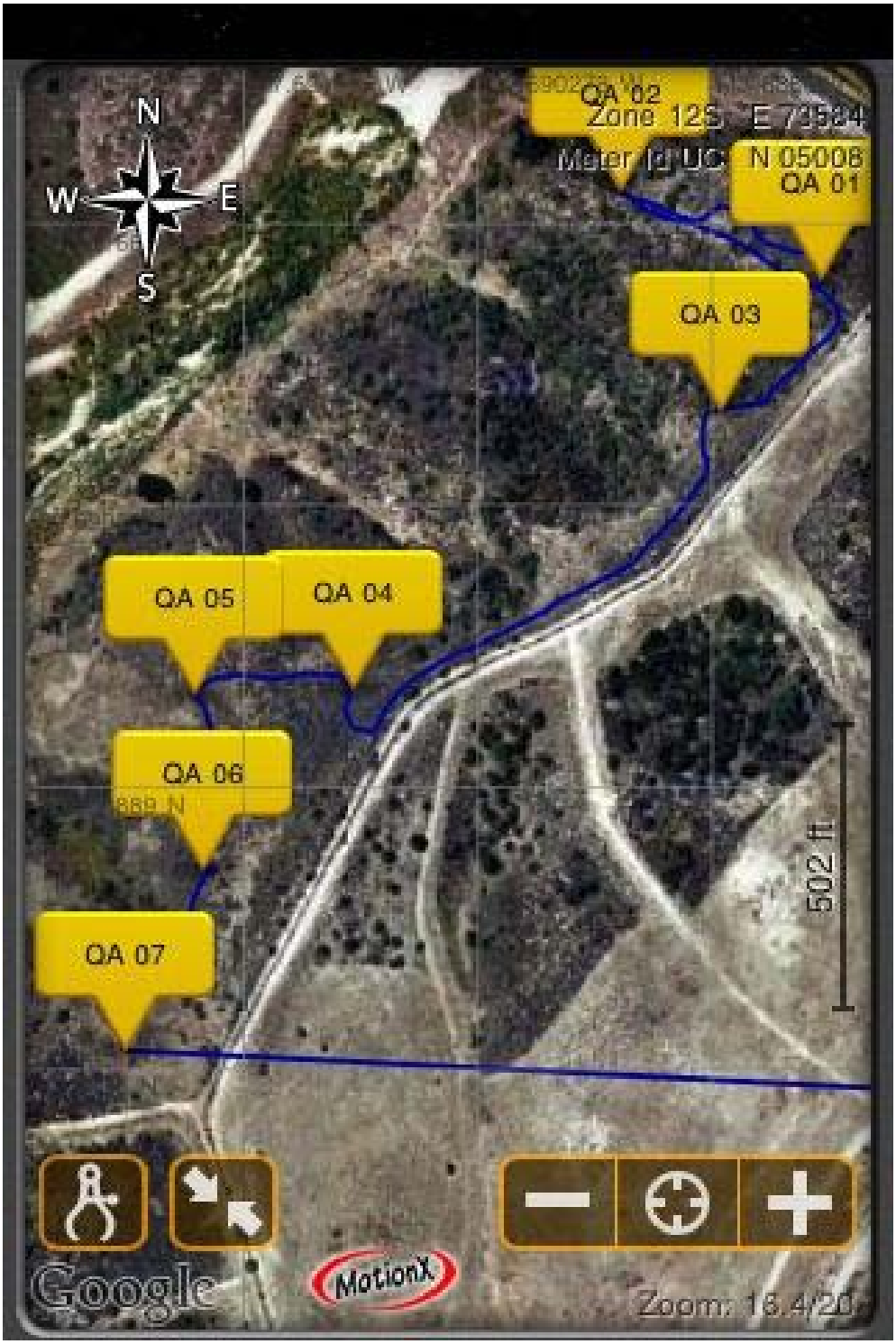
Photograph A-4. QA Seed 03

Photograph A-5. QA Seed 04

Photograph A-6. QA Seed 05

Photograph A-7. QA Seed 06

Photograph A-8. QA Seed 07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QA/QC BLIND SEEDING RECOVERY TABLES

Blind Seed Recovery:

ERRG QA Specialists having tracked the recovery of blind seeds at former MCAS El Toro, IRP Site 1, Adjacent Property and documented on a daily basis the recovery of all QA and QC blind seeds emplaced on May 21, 2010, by AECOM UXOQC and ERRG QA. The tables below list seed identification numbers, recovery date, and the grid in which the seed was recovered. The recovery of all blind seeds marks the end of the blind seeding action, June 9, 2010.

Final AECOM QC Seed Recovery (emplaced by AECOM)

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 01	16	
26 May 10	QC Seed 04	25	
26 May 10	QC Seed 29	17	
27 May 10	QC Seed 07	4	
28 May 10	QC Seed 06	18	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
01 June 10	QC Seed 30	19	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	

Date	QC Seed Found	Grid	Comments
03 June 10	QC Seed 26	32	
04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	
07 June 10	QC Seed 22	30	
07 June 10	QC Seed 25	31	

ERRG QA Seed Recovery

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	
07 June 10	QA Seed 01	30	

Francisco M Cota

ERRG Operations Manager

Appendix B. ERRG QA Blind Seeding SOP

1. Purpose

1.1. OVERVIEW OF UXO SOPS

The series of Unexploded Ordnance (UXO) Standard Operation Procedures (SOPs) provide direction for and are applicable to the Munitions and Explosives of Concern (MEC) services provided by Engineering/Remediation Resources Group, Inc. (ERRG) and cover the breadth of the performance and verification of ERRG UXO services.

These policies and procedures are not all inclusive nor are they applicable in all situations. This SOP is not a stand-alone document and is to be used together with Work Plans (WP), other ERRG SOPs, the ERRG Accident Prevention Plan (APP), applicable Federal, State, local regulations, and contract restrictions and guidance.

1.2. PURPOSE OF THIS SOP

The QA Blind Seed Program is a QA process in which QA personnel strategically emplace inert UXO items or simulant items within the project production area to test and validate the MEC operations detection process. The validity of blind seeding as a QA tool is based on assumptions that seed items will accurately mimic actual MEC items expected to be found in the production area. If the UXO team detects the blind seeds, QA personnel determine the MEC operations procedures are working as planned. If the UXO teams fail to find a blind seed, the detection process is either inadequate or being implemented inadequately. Blind seeding should be planned, implemented, a documented and controlled by the ERRG QA Manager.

2. Scope

This procedure applies to all instances where the responsibilities of ERRG QA Specialist are charged with the emplacement of QA or QC blind seeding on MEC Intrusive projects.

3. References

- ERRG Health and Safety Program;
- OSHA, 29 CFR 1910, Occupational Safety and Health Standards;
- Site Specific Health and Safety Plan;
- Applicable sections of EPA, 40 CFR Parts 260 to 299, Protection of Environment;
- Applicable sections of DOT, 49 CFR Parts 100 to 199, Transportation;
- DOD 4145.26 M, Contractors' Safety Manual for Ammunition and Explosives;
- DOD 6055.9-STD, DOD Ammunition and Explosives Safety Standards;
- DOD 4160.21-M, Defense Reutilization and Marketing Manual;

- TM 9-1300-200, Ammunition General;
- TM 9-1300-214, Military Explosives;
- TM 60 Series Publications;

4. Definitions

Discarded Military Munitions (DMM). - Military munitions that have been abandoned without proper disposal or have been removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations. (10 U.S.C. §2710(e) (2)).

Exclusion Zone (EZ) – A zone in which unauthorized personnel are not allowed to be present during MEC clearance or disposal activities.

Fuzes. - Devices that initiate the detonation sequence in munitions. Fuzes are typically associated with munitions (e.g., mortars and bombs), but they are occasionally found separately. They may contain a charge large enough to cause injury. Magnetic and proximity fuzes are the most sensitive and, depending on other factors (e.g., fuze location and arming), greatly influence the likelihood of detonation. When separated from the munitions, a fuze may not look like an explosive munitions item.

The terms fuse and fuze mean different things. For this SOP, a fuze is a mechanical or electrical device with explosive or non-explosive components designed to initiate a train of fire or detonation in ordnance (e.g., hand grenade). A fuse is a cord of readily combustible material that can be lit at one end to carry a flame along the length of the fuse to detonate an explosive at the other end (e.g., firecracker).

Military Munitions. - Ammunition products and components produced for or used by the armed forces for national defense and security. The term military munitions include ammunition products or components under the control of the Department of Defense, the U.S. Coast Guard, the Department of Energy, and the National Guard. The term includes confined gaseous, liquid, and solid propellants; explosives; pyrotechnics; chemical and riot control agents; smokes and incendiaries; bulk explosives; chemical agents; chemical munitions; rockets; guided and ballistic missiles; bombs; warheads; mortar rounds; artillery ammunition; small arms ammunition; grenades; mines; torpedoes; depth charges; cluster munitions and dispensers; demolition charges; and devices and components thereof.

Military munitions do not include wholly inert items, improvised explosive devices, or nuclear weapons, nuclear devices, or nuclear components. However, military munitions do include non-nuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 U.S.C. §2011 et seq.) have been completed. (10 U.S.C. §101(e)(4))

Minimum Separation Distance (MSD) – The minimum separation distance (MSD) is the minimum safe distance for non-essential personnel to be present during UXO Operations. Generally speaking, the maximum horizontal fragmentation distance is to be used for all unexploded ordnance (UXO) items as the MSD for all non-essential personnel for both intentional and unintentional detonations.

Munitions Constituents (MC). - Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials. MC also includes emission, degradation, or breakdown elements of such ordnance or munitions. (10 U.S.C. §2710(e)(3)) Note: Munitions constituents are MEC when explosive compounds of the munitions, such as TNT, RDX, and HMX, are in sufficient concentration as to pose an explosive hazard. This situation arises when concentration levels are 10 percent or more. Non-explosive munitions constituents and explosive concentrations less than 10 percent are not considered MEC.

Munitions and Explosives of Concern (MEC). - Specific categories of military munitions that may pose unique explosive risks, including:

- unexploded ordnance (UXO), as defined in 10 U.S.C. §101(e)(5);
- discarded military munitions (DMM), as defined in 10 U.S.C. §2710(e)(2); or
- munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. §2710(e)(3), present in high enough concentrations to pose an explosive hazard. (See "Munitions constituents")

Munitions Response. - Response actions—including investigation, removal actions, and remedial actions—to address the explosives safety, human health, or environmental risks presented by unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC), or to support a determination that no removal or remedial action is required.

Unexploded Ordnance (UXO). - Military munitions that:

- (a) have been primed, fuzed, armed, or otherwise prepared for action;
- (b) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and
- (c) remain unexploded whether by malfunction, design, or any other cause.

(10 U.S.C. §101(e)(5)(A) through (C)) P.L. 106-65, section 3031 (c)(5)(A), provides a more detailed description.

UXO Operations - UXO operations are defined as MEC identification; access procedures such as excavation, either by hand or using heavy equipment; handling of UXO, explosives or explosive items; or disposal, including movement, transportation, and final disposal of MEC.

5. Responsibilities

5.1. PROCEDURE RESPONSIBILITY

The MEC Quality Assurance Manager is responsible for maintenance, management, and revision of this procedure. Questions, comments, or suggestions regarding this SOP should be sent to the MEC Operations Manager.

5.2. PROJECT RESPONSIBILITY

ERRG QA Specialists performing this task, or any portion thereof, are responsible for meeting the requirements of this procedure. ERRG employees conducting technical review of task performance are also responsible for following appropriate portions of this SOP.

For those projects where the activities of this SOP are conducted, the UXO QA Specialist is responsible for ensuring that those activities are conducted in accordance with this and other appropriate procedures. Project participants are responsible for documenting information in sufficient detail to provide objective documentation that the requirements of this SOP have been met. Such documentation shall be retained as project records.

6. Procedure

6.1. MEC AVOIDANCE AND SAFETY CONSIDERATIONS DURING QA SEED EMPLACEMENT

MEC Avoidance procedures specified and outlined in the ERRG MEC Avoidance SOP will be utilized during the emplacement of QA/QC seeds to ensure the safety of personnel involved in operations. This is a valid safety precaution as seeding operations are performed on sites with potential. QA/QC seeding operations will be under the supervision of UXO qualified personnel. Non-UXO trained personnel will not be allowed in the exclusion zone (EZ) or work zone unless accompanied by a UXO Technician. During operations, ERRG personnel will strictly adhere to ERRG's Corporate Health and Safety Plan and Site Specific Health and Safety Plan and the following general safety practices:

- Operations will be conducted only during daylight hours;
- Access to operating areas will be limited to only those personnel necessary to accomplish the specific operation;
- UXO will not be handled during avoidance operations, personnel will be directed away/around from the item;
- During UXO operations the minimum separation distance (MSD) between UXO and non-UXO operations is the fragmentation distance of the munition with the greatest fragmentation distance (MGFD), as stated in the Work Plan. Personnel remaining on-site will be limited to those personnel needed to safely and efficiently prepare the item/s for destruction.);
- Non UXO technicians will receive initial ordnance recognition and safety training prior to beginning operations and will be escorted by qualified UXO personnel at all times;

- All personnel will attend the daily safety briefing (tailgate safety briefing) prior to entering the operating area;
- Anyone can stop operations for an unsafe act or situation;
- Safety violations and/or unsafe acts will be immediately reported to the UXO Safety Officer (UXOSO);
- Failure to comply with safety rules/procedures may result in termination of employment.

6.2. BLIND SEED EMPLACEMENT PROCEDURES

Prior to excavating for the purpose of subsurface seed placement a magnetometer will be utilized to ensure the excavation locations are free of MEC or MPPEH. This will prevent accidental detonation of buried MEC. The immediate area must be clear of metallic anomalies to ensure the intended detection of the blind seed is unimpeded. The procedures used after clearance with a magnetometer to emplace blind seeds are as follows:

- Ensure the seed item is marked with the correct ERRG seed identification number.
- Excavate the intended seed location to the predetermined depth, record depth utilizing the attached QA Seed Report.
- Emplace the blind seed and record burial data on the QA Seed Report as follows:
  - Place and record the blind seed item at depth with center mass of the item at the intended maximum depth.
  - Arrange and record the blind seed in the intended bearing and attitude. A picture of the item will then be taken.
- Once the blind seed has been emplaced and all data recorded, the item's location coordinates will be recorded on the QA Seed Report after being captured utilizing one of the following procedures, procedures are listed in order of preference priority:
  - When available an RTK GPS unit will be utilized to record the coordinates of the item.
  - When an RTK GPS is not available a handheld GPS may be utilized.
  - Measuring tapes used in conjunction with existing grid stakes and/or reacquired anomaly flags.
- The excavation will be backfilled with incremental amounts of soils, between each increment the backfill soils will be tamped to ensure optimum soil density.

6.3. CONFIDENTIALITY PROCEDURES

The confidentiality of the blind seed location coordinates is necessary to maintain the validity and effectiveness of the QA/QC blind seeding program. To maintain confidentiality the coordinate file within the GPS unit utilized in the blind seed emplacements will be erased or cleared after the coordinates have been transferred to the QA Seed Report. If possible a plot map may be generated plotting the blind seed

locations. The QA Seed Report and plot map, if generated, will be filed and secured by the ERRG QA Manager in such a way as it will not be available to project personnel. Once a blind seed has been discovered during MEC Intrusive operations the QA Manager will compare the coordinates provided by the UXOQC and the coordinated recorded on the QA Seed Report. Once the blind seed has been verified as a blind seed the QA Manager will report the blind seed as discovered.

7. Forms

QA Seed Report.

Appendix C. QA Audit Summary Table, Checklists, and Audits

Appendix C
Activities Audited/Audit Numbers

MEC Operation/Activity Audited	Method of Surveillance	Documentation	Audits Pertaining to Operation/Activity
Site/Project Compliance	QA Inspection	QA Compliance Checklist	CC-01 (2 Feb 10) CC-02 (26 Feb 10) CC-03 (18 May 10)
Vegetation Removal	QA Observation	QA Inspection and Audit Log	ET-001(2 Feb 10) ET-037 (27 May 10)
Safe Work Practices PPE Usage and Decontamination	QA Observation	QA Inspection and Audit Log	ET-002 (3 Feb 10) ET-019 (4 Mar 10) ET-032 (24 May 10) ET-043 (03 Jun 10) ET-049 (08 Jun 10)
Project and UXOQC Documentation UXOQC Preparatory Initial and Follow-up Inspections	QA Inspection	QA Inspection and Audit Log	ET-003 (4 Feb 10) ET-013 (19 Feb 10) ET-021 (11 Mar 10) ET-023 (17 Mar 10) ET-026 (19 May 10) ET-027 (19 May 10)
Site Personnel Certification Files	QA Inspection	QA Inspection and Audit Log	ET-004 (5 Feb 10)
GEO Test Strip Emplacement	QA Inspection	QA Inspection and Audit Log	ET-005 (5 Feb 10) ET-025 (18 May 10)
DGM Operations and Testing	QA Observation	QA Inspection and Audit Log	ET-006 (8 Feb 10) ET-011 (16-19 Feb 10) ET-021 (11 Mar 10)
MEC Operations: Sweep, Dig No Find and Escort Operations	QA Observation	QA Inspection and Audit Log	ET-007 (9 Feb 10) ET-008 (10 Feb 10) ET-011 (16-19 Feb 10) ET-016 (24 Feb 10) ET-018 (4 Mar 10) ET-021 (11 Mar 10) ET-022 (17 Mar 10) ET-029 (20 May 10) ET-031 (21 May 10) ET-043 (03 Jun 10)

MEC Operation/Activity Audited	Method of Surveillance	Documentation	Audits Pertaining to Operation/Activity
Blind Seeding: QC and QA Blind Seeding Operations QC and QA Seed Recovery	QA Inspections and Observations	QA Inspection and Audit Log	ET-009 (11 Feb 10) ET-019 (15 Feb 10) ET-040 (28 May 10) ET-046 (04 Jun 10) ET-051 (09 Jun 10)
Hand-Held Detector Function testing	QA Observations	QA Inspection and Audit Log	ET-010 (8-12 Feb 10) ET-14 (16-19 Feb 10) ET-017 (25 Feb 10) ET-020 (4 Mar 10) ET-021 (11 Mar 10) ET-030 (21 May 10) ET-039 (28 May 10) ET-045 (04 Jun 10)
Explosives Management; MEC, MPPEH and MDAS Management	QA Inspections and Observations	QA Inspection and Audit Log	ET-012 (16 Feb 10) ET-023 (17 Mar 10) ET-028 (20 May 10) ET-050 (09 Jun 10)
GPS and Survey Operations	QA Inspections and Observations	QA Inspection and Audit Log	ET-024 (18 May 10)
QA 10% Inspections: QA DGM Target Inspections QA Mag and Dig Grid Inspections	Inspections and Observations	QA Inspection and Audit Log	ET-033 (24 May 10) ET-034 (25 May 10) ET-035 (26 May 10) ET-036 (27 May 10) ET-038 (28 May 10) ET-041 (01 Jun 10) ET-042 (02 Jun 10) ET-044 (04 Jun 10) ET-047 (07 Jun 10) ET-048 (08 Jun 10)

QA COMPLIANCE CHECK LIST

Date: 02 February 2010 **Checklist #: CC-01**

1. Review Scope of Work & WP	Yes	No	N/A	COMMENTS
a. Check for Modifications/Changes & Up To Date			x	
b. Proper Depth of Clearance Identified	x			Until Source has been identified
c. Corrective Action Standards Established	x			
d. Proper Target Ordnance Identified/Test Sources/Test Plot Established	x			
e. Most Probable Munitions (MPM) Identified	x			See Explosive Sighting Plan
f. MSD/MFGD Established	x			See Explosive Sighting Plan
g. Standards for Turn-In of Recovered MPPEH and Range-Related Debris	x			See 2.5.14
h. Exclusion Zone (EZ) identified in WP	x			Table 3-2
2. Documentation Requirements/Publications	**Yes**	**No**	**N/A**	**COMMENTS**
a. Notice to Proceed from Client	x			
b. Approval Letter for Work Plan	x			
c. Contractor Personnel Qualifications for All UXO Personnel verified	x			Verified by QA
d. Certificate of Grounding, Lightning Protection (if Required)	x			Certified electrician on site to properly ground Type II Explosive Storage Magazines
e. Approval Letter, MSD 1/600 (if Required)			x	
f. Explosive Safety Submission (ESS) (if Required)	x			Change of ESS for proper demo procedure, will add BEM to ESS
g. Delivery Order & All Modifications & Change Orders			x	
h. Explosives Permits/License (If Required)	x			
i. GFE Inventory/Transfer Documentation (If Required)			x	
j. Dig Permits for Utilities (If Required)			x	
k. Rites of Entry (ROE) (If Required)	x			On site

l. Current MEC Sector SOPs, readily available	x			
m. Other Applicable Reference Publications/Materials, readily available	x			
3. QC Files Established	**Yes**	**No**	**N/A**	**COMMENTS**
a. Daily/Weekly QC Reports/Audits	x			
b. Approval Letter's, NTP, for contractor Operations	x			
c. Weekly/Monthly Reports (If Provided)	x			
4. Accident Prevention Plan (APP)/Site-Specific Safety & Health Plan (SSHP)	**Yes**	**No**	**N/A**	**COMMENTS**
a. Hazard Analysis & Risk Assessment for All Task & Equipment	x			
b. Training, General Site Workers HAZWOPER Qualified & Current 8-Hour Refresher	x			Verified by QA
c. Personnel Protective Equipment (PPE)	x			Observed daily
d. First Aid Equipment Shall be Immediately Available	x			
e. Emergency Eye-washes/Showers Comply with ANSI Standards	x			
f. Fire Extinguishers (Specify Type, Size, and Location)	x			
g. Visitor Safety Briefing	x			Log on site
h. Emergency Notification List Posted & Available	x			
i. Emergency Routes/Maps Available & Issued to Each Team	x			Team leader is in possession of maps and routes/all personnel have been briefed on routes
j. Work Task Identified in Activity Hazard Analysis (AHA)	x			See work plan
k. Current MSDS(s) On-Site.	x			
l. Minimum of Two Personnel On-Site 1st Aid/CPR Trained, EM 385-1-1, Section 3, Page 19, Para 03.A.02	x			
m. 16-Unit 1st Aid Kits Approved by a Licensed Physician in the Ratio of 1 for every 25 personnel or less. EM 385-1-1, Section 3, Page 19, Para 03.A.03	x			

n. Adequate means of reporting Accidents/Near Misses to Client.	x			

5. Facilities. Reference EM 385-1-1	**Yes**	**No**	**N/A**	**COMMENTS**
a. Adequate Work Space & Facilities (Restrooms, etc.)	x			
b. Good Housekeeping (No Fire Hazards, Tripping Hazards, etc.)	x			
c. Approved and Suitable Containers for Flammable, Toxic, or Explosive Materials	x			
d. Approved/Adequate Explosive Storage Facilities	x			Type II Explosive Storage Magazines on site
e. Fire/Emergency Exits Clear & Unbarred. Fire extinguisher location(s), and route of escape posted as appropriate in facility	x			
f. Personnel Limits Maintained	x			
g. Site Security Adequate	x			Padlocked gate entry/combination
h. Toilets IAW EM 385-1-1, Section 2, Page 14, Para 02.B	x			
i. Washing Facilities IAW EM 385-1-1, Section 2, Page 16, Para 02.C	x			
6. Equipment. Reference Approved WP/Manufacturers Operators Manual	**Yes**	**No**	**N/A**	**COMMENTS**
a. Tools Appropriate and Serviceable	x			
b. Personnel Protective Equipment (PPE) Present, Serviceable & Utilized	x			
c. Equipment Calibrated (Last Cal. Date -------- Next Cal Date ---------)	x			Schonstedts/Whites/EM-61 functioned checked daily.
d. Survey Equipment Inspected & Serviceable	x			GPS/base stationed checked daily
e. Heavy Equipment Inspected & Serviceable IAW EM 385-1-1, Section 16, to include back up alarm and equipped with 1 fire extinguisher of 5-BC.	x			
f. Competent Person identified to inspect and accept Heavy Equipment IAW EM 385-1-1, Section 16.A.01	x			
g. Identified Site Vehicles are equipped with First Aid Kits and a 5-BCFire Extinguisher IAW EM385-1-1, Section 18.A.02 (10)	x			

h. Geophysical Equipment on-Hand & Serviceable	x			
i. Two Separate Means of Communications, Radio(s)/Cell Phone, Land Line(s)	x			Teams have radios issued daily
7. Explosive Storage/Receipt/Transportation Requirements. Reference EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Proper Storage Containers Type 2 Magazines Conforming to Standards Set froth in Section 55.206 of ATFP 5400.7,	x			
b. Placards will be displayed on the magazine(s) IAW w/DOD 6055.9-STD, Chapter 2 & 3 for Hazard Division stored in the magazine(s)	x			
c. Explosive Compatibility Groups Segregated Into Appropriate Hazards Divisions listed in Chapter 3, DOD 6055.9-STD	x			
d. Security Locks for the Magazines Shall Meet the Requirements Listed in Section 55.208 (a) (4), ATFP 5400.7	x			
e. Key control will be documented in the WP	x			
d. Lightning Protection System Serviceable & Tested (Test Date _____)	x			Properly grounded/certified electrician
e. Fire Fighting placarding Will be Posted on the Fence IAW DOD 6055.9-STD, Chapter 8 & DA PAM 385-64, Chapter 3 for Hazard Division stored in the magazine(s)			x	
f. Fire Protection Consisting of Extinguishers, 10-BC or Larger Located at Magazine Area & Vegetation & Trash Cleared in & Around Magazine Area.	x			X2 fire extinguishers/high grass cleared around magazines ongoing
g. Quantity Distance From Magazine IAW WP & Explosive Safety Submission (ESS)	x			
h. Accountability Records Maintained IAW 55.125, ATFP 5400.7	x			
i. Explosive NEW Limits Do Not Exceed Limits Stated In the WP & ESS	x			
j. Licenses/Permits (If Required)	x			
k. Initial Receipt Procedures & Documentation On-Site	x			
l. Procedures for Transportation of Explosives IAW EM 385-1-1, Chapter 15	x			
m. Pre-Operational Checks of Vehicle Transporting Explosives Using Checklist	x			

n. Cargo Properly Segregated, Blocked, & in Approved Containers.	x			
o. Receipt Procedures Accounting for Each Item of Explosives/Documentation On-Site	x			
p. Individuals Authorized to Receive, Issue, and Transport Identified	x			
q. Final Disposition Procedures Documented	x			
r. Reconciliation, Lost/Stolen Receipt Documents/Procedures On-site	x			
s. Inventory Conducted Weekly @ Minimum	x			On site 23 Feb 10, initial inventory completed on this date

9. MEC Operational Plan. Reference Approved WP & EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Contractor Following Methodology Defined in WP	x			
1) Daily Safety Meeting Conducted by UXOSO	x			Held at 0700 daily
b. Detection Equipment Used	x			
1) Pre-Operational Checks Performed Prior to Sweep Operations	x			Observed by QA
2) Operational Condition Annotated in Log Book	x			
3) Team Composition	x			
4) Quality Control	x			AECOM QC is following the Three Phase approach
5) Quality Control Documentation	x			On site
c. Operational Teams Operating IAW WP	x			
1) UXO Supervisor conducted Physical Check Prior to Operation	x			
2) Pre-Operational/Safety Brief Conducted	x			
3) Individual Sweep Lanes Marked IAW WP	x			
4) Contacts Marked & Investigated Properly	x			QA observed mag/flag/intrusive operations and proper digging techniques were being utilized
5) Results of Sweep Operation Recorded	x			Team leaders are noting results on dig sheets and in their logbook
6) All MEC, Munitions Debris and MPPEH is examined and positively identified by at least two UXO qualified personnel. (a) Actions taken when MEC items identified are consistent with WP/MPM.	x			

7) All MEC/UXO Clearly Marked	x			
d. QC Operations IAW WP	x			Following three phase approach and conducting blind seed operations/QC of grids as per WP
e. Other Material Being Collected (as Required)	x			
f. MPPEH Inspected/Vented/Segregated	x			Inspected and separated/ongoing
g. Geophysical Test Grids Appropriate and IAW SOW	x			
h. Project Data Base and PDAs entries are consistent with Intrusive Results	x			No pda entries, all hard copy

10. Disposal Operations IAW WP and 60-1-1-31	**Yes**	**No**	**N/A**	**COMMENTS**
a. Disposal Method IAW WP			x	Have not yet been conducted
b. Adequate Security For Disposal Operation	x			
c. Disposal Notification List Available	x			
d. All Necessary Notifications Made			x	Have not yet been conducted
e. Movement of MEC Items, or is MEC Consolidation Feasible	x			
f. Protective Measures/Tamping Being Used/Appropriate for MEC Being Destroyed			x	Have not yet been conducted
g. Disposal Procedures IAW 60A-1-1-31/WP			x	Have not yet been conducted
h. Conducted adequate Demolition Brief			x	Have not yet been conducted
1) Misfire Procedures Properly Performed			x	
11. Location Survey & Mapping Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. Registered Land Surveyor	x			
b. Surveyors Received Site Specific Training	x			
c. UXO Escort Provided	x			Daily
d. Grid Stake, Locations Swept With Geophysical Equipment Prior to Driving Stakes	x			

e. Survey Notes Being Recorded	x			
12. Quality Control Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. QC Operational/Checks Being Conducted IAW WP	x			
b. QC Grid Sweep Pattern Adequate	x			Proper use of Whites and Schonstedts is being utilized
c. Results of QC Checks Being Recorded	x			
d. Nonconformance reports issued if QC checks show discrepancies, or for QA failures	x			
e. Intrusive Results/Data Base/PDAs entries are checked by UXOQC	x			Hard copies only
13. Vegetation Removal	**Yes**	**No**	**N/A**	**COMMENTS**
a. Equipment Operated To Prevent Impact With Possible Surface MEC	x			
b. Cutting Does Not Present Implement Hazard	x			
c. UXO Personnel Monitoring Cutting Operation	x			
d. MEC Discovered Marked/Handled Appropriately	x			
e. Equipment Being Operated Safely & IAW Operators Manual	x			

SIGNATURE: _____

QA COMPLIANCE CHECK LIST

Date: 26 February 2010 **Checklist #: CC-02**

1. Review Scope of Work & WP	Yes	No	N/A	COMMENTS
a. Check for Modifications/Changes & Up To Date	x			
b. Proper Depth of Clearance Identified	x			Until Source has been identified
c. Corrective Action Standards Established	x			
d. Proper Target Ordnance Identified/Test Sources/Test Plot Established	x			
e. Most Probable Munitions (MPM) Identified	x			See Explosive Sighting Plan
f. MSD/MFGD Established	x			See Explosive Sighting Plan
g. Standards for Turn-In of Recovered MPPEH and Range-Related Debris	x			See 2.5.14
h. Exclusion Zone (EZ) identified in WP	x			Table 3-2
2. Documentation Requirements/Publications	**Yes**	**No**	**N/A**	**COMMENTS**
a. Notice to Proceed from Client	x			
b. Approval Letter for Work Plan	x			
c. Contractor Personnel Qualifications for All UXO Personnel verified	x			Verified by QA
d. Certificate of Grounding, Lightning Protection (if Required)	x			Certified electrician on site to properly ground Type II Explosive Storage Magazines
e. Approval Letter, MSD 1/600 (if Required)			x	
f. Explosive Safety Submission (ESS) (if Required)	x			Change of ESS for proper demo procedure, will add BEM to ESS
g. Delivery Order & All Modifications & Change Orders			x	
h. Explosives Permits/License (If Required)	x			
i. GFE Inventory/Transfer Documentation (If Required)			x	
j. Dig Permits for Utilities (If Required)			x	
k. Rites of Entry (ROE) (If Required)	x			On site

l. Current MEC Sector SOPs, readily available	x			
m. Other Applicable Reference Publications/Materials, readily available	x			
3. QC Files Established	**Yes**	**No**	**N/A**	**COMMENTS**
a. Daily/Weekly QC Reports/Audits	x			
b. Approval Letter's, NTP, for contractor Operations	x			
c. Weekly/Monthly Reports (If Provided)	x			
4. Accident Prevention Plan (APP)/Site-Specific Safety & Health Plan (SSHP)	**Yes**	**No**	**N/A**	**COMMENTS**
a. Hazard Analysis & Risk Assessment for All Task & Equipment	x			
b. Training, General Site Workers HAZWOPER Qualified & Current 8-Hour Refresher	x			Verified by QA
c. Personnel Protective Equipment (PPE)	x			Observed daily
d. First Aid Equipment Shall be Immediately Available	x			
e. Emergency Eye-washes/Showers Comply with ANSI Standards	x			
f. Fire Extinguishers (Specify Type, Size, and Location)	x			
g. Visitor Safety Briefing	x			Log on site
h. Emergency Notification List Posted & Available	x			
i. Emergency Routes/Maps Available & Issued to Each Team	x			Team leader is in possession of maps and routes/all personnel have been briefed on routes
j. Work Task Identified in Activity Hazard Analysis (AHA)	x			See work plan
k. Current MSDS(s) On-Site.	x			
l. Minimum of Two Personnel On-Site 1st Aid/CPR Trained, EM 385-1-1, Section 3, Page 19, Para 03.A.02	x			
m. 16-Unit 1st Aid Kits Approved by a Licensed Physician in the Ratio of 1 for every 25 personnel or less. EM 385-1-1, Section 3, Page 19, Para 03.A.03	x			

n. Adequate means of reporting Accidents/Near Misses to Client.	x			

5. Facilities. Reference EM 385-1-1	**Yes**	**No**	**N/A**	**COMMENTS**
a. Adequate Work Space & Facilities (Restrooms, etc.)	x			
b. Good Housekeeping (No Fire Hazards, Tripping Hazards, etc.)	x			
c. Approved and Suitable Containers for Flammable, Toxic, or Explosive Materials	x			
d. Approved/Adequate Explosive Storage Facilities	x			Type II Explosive Storage Magazines on site
e. Fire/Emergency Exits Clear & Unbarred. Fire extinguisher location(s), and route of escape posted as appropriate in facility	x			
f. Personnel Limits Maintained	x			
g. Site Security Adequate	x			Padlocked gate entry/combination
h. Toilets IAW EM 385-1-1, Section 2, Page 14, Para 02.B	x			
i. Washing Facilities IAW EM 385-1-1, Section 2, Page 16, Para 02.C	x			
6. Equipment. Reference Approved WP/Manufacturers Operators Manual	**Yes**	**No**	**N/A**	**COMMENTS**
a. Tools Appropriate and Serviceable	x			
b. Personnel Protective Equipment (PPE) Present, Serviceable & Utilized	x			
c. Equipment Calibrated (Last Cal. Date -------- Next Cal Date ---------)	x			Schonstedts/Whites/EM-61 functioned checked daily.
d. Survey Equipment Inspected & Serviceable	x			GPS/base stationed checked daily
e. Heavy Equipment Inspected & Serviceable IAW EM 385-1-1, Section 16, to include back up alarm and equipped with 1 fire extinguisher of 5-BC.	x			
f. Competent Person identified to inspect and accept Heavy Equipment IAW EM 385-1-1, Section 16.A.01	x			
g. Identified Site Vehicles are equipped with First Aid Kits and a 5-BCFire Extinguisher IAW EM385-1-1, Section 18.A.02 (10)	x			

h. Geophysical Equipment on-Hand & Serviceable	x			
i. Two Separate Means of Communications, Radio(s)/Cell Phone, Land Line(s)	x			Teams have radios issued daily
7. Explosive Storage/Receipt/Transportation Requirements. Reference EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Proper Storage Containers Type 2 Magazines Conforming to Standards Set froth in Section 55.206 of ATFP 5400.7,	x			
b. Placards will be displayed on the magazine(s) IAW w/DOD 6055.9-STD, Chapter 2 & 3 for Hazard Division stored in the magazine(s)	x			
c. Explosive Compatibility Groups Segregated Into Appropriate Hazards Divisions listed in Chapter 3, DOD 6055.9-STD	x			
d. Security Locks for the Magazines Shall Meet the Requirements Listed in Section 55.208 (a) (4), ATFP 5400.7	x			
e. Key control will be documented in the WP	x			
d. Lightning Protection System Serviceable & Tested (Test Date _____)	x			Properly grounded/certified electrician
e. Fire Fighting placarding Will be Posted on the Fence IAW DOD 6055.9-STD, Chapter 8 & DA PAM 385-64, Chapter 3 for Hazard Division stored in the magazine(s)			x	
f. Fire Protection Consisting of Extinguishers, 10-BC or Larger Located at Magazine Area & Vegetation & Trash Cleared in & Around Magazine Area.	x			X2 fire extinguishers/high grass cleared around magazines ongoing
g. Quantity Distance From Magazine IAW WP & Explosive Safety Submission (ESS)	x			
h. Accountability Records Maintained IAW 55.125, ATFP 5400.7	x			
i. Explosive NEW Limits Do Not Exceed Limits Stated In the WP & ESS	x			
j. Licenses/Permits (If Required)	x			
k. Initial Receipt Procedures & Documentation On-Site	x			
l. Procedures for Transportation of Explosives IAW EM 385-1-1, Chapter 15	x			
m. Pre-Operational Checks of Vehicle Transporting Explosives Using Checklist	x			

n. Cargo Properly Segregated, Blocked, & in Approved Containers.	x			
o. Receipt Procedures Accounting for Each Item of Explosives/Documentation On-Site	x			
p. Individuals Authorized to Receive, Issue, and Transport Identified	x			
q. Final Disposition Procedures Documented	x			
r. Reconciliation, Lost/Stolen Receipt Documents/Procedures On-site	x			
s. Inventory Conducted Weekly @ Minimum	x			On site 23 Feb 10, initial inventory completed on this date

9. MEC Operational Plan. Reference Approved WP & EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Contractor Following Methodology Defined in WP	x			
1) Daily Safety Meeting Conducted by UXOSO	x			Held at 0700 daily
b. Detection Equipment Used	x			
1) Pre-Operational Checks Performed Prior to Sweep Operations	x			Observed by QA
2) Operational Condition Annotated in Log Book	x			
3) Team Composition	x			
4) Quality Control	x			AECOM QC is following the Three Phase approach
5) Quality Control Documentation	x			On site
c. Operational Teams Operating IAW WP	x			
1) UXO Supervisor conducted Physical Check Prior to Operation	x			
2) Pre-Operational/Safety Brief Conducted	x			
3) Individual Sweep Lanes Marked IAW WP	x			
4) Contacts Marked & Investigated Properly	x			QA observed mag/flag/intrusive operations and proper digging techniques were being utilized
5) Results of Sweep Operation Recorded	x			Team leaders are noting results on dig sheets and in their logbook
6) All MEC, Munitions Debris and MPPEH is examined and positively identified by at least two UXO qualified personnel. (a) Actions taken when MEC items identified are consistent with WP/MPM.	x			

7) All MEC/UXO Clearly Marked	x			
d. QC Operations IAW WP	x			Following three phase approach and conducting blind seed operations/QC of grids as per WP
e. Other Material Being Collected (as Required)	x			
f. MPPEH Inspected/Vented/Segregated	x			Inspected and separated/ongoing
g. Geophysical Test Grids Appropriate and IAW SOW	x			
h. Project Data Base and PDAs entries are consistent with Intrusive Results	x			No pda entries, all hard copy

10. Disposal Operations IAW WP and 60-1-1-31	**Yes**	**No**	**N/A**	**COMMENTS**
a. Disposal Method IAW WP			x	Have not yet been conducted
b. Adequate Security For Disposal Operation			x	Have not yet been conducted
c. Disposal Notification List Available	x			
d. All Necessary Notifications Made			x	Have not yet been conducted
e. Movement of MEC Items, or is MEC Consolidation Feasible	x			
f. Protective Measures/Tamping Being Used/Appropriate for MEC Being Destroyed			x	Have not yet been conducted
g. Disposal Procedures IAW 60A-1-1-31/WP			x	Have not yet been conducted
h. Conducted adequate Demolition Brief			x	Have not yet been conducted
1) Misfire Procedures Properly Performed			x	Have not yet been conducted
11. Location Survey & Mapping Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. Registered Land Surveyor	x			
b. Surveyors Received Site Specific Training	x			
c. UXO Escort Provided	x			Daily
d. Grid Stake, Locations Swept With Geophysical Equipment Prior to Driving Stakes	x			

e. Survey Notes Being Recorded	x			
12. Quality Control Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. QC Operational/Checks Being Conducted IAW WP	x			
b. QC Grid Sweep Pattern Adequate	x			Proper use of Whites and Schonstedts is being utilized
c. Results of QC Checks Being Recorded	x			
d. Nonconformance reports issued if QC checks show discrepancies, or for QA failures	x			
e. Intrusive Results/Data Base/PDAs entries are checked by UXOQC	x			Hard copies only
13. Vegetation Removal	**Yes**	**No**	**N/A**	**COMMENTS**
a. Equipment Operated To Prevent Impact With Possible Surface MEC	x			
b. Cutting Does Not Present Implement Hazard	x			
c. UXO Personnel Monitoring Cutting Operation	x			
d. MEC Discovered Marked/Handled Appropriately	x			
e. Equipment Being Operated Safely & IAW Operators Manual	x			

SIGNATURE: _____

QA COMPLIANCE CHECK LIST

Date: 18 May 2010, Second Mobilization **Checklist #: CC-03**

1. Review Scope of Work & WP	Yes	No	N/A	COMMENTS
a. Check for Modifications/Changes & Up To Date	x			
b. Proper Depth of Clearance Identified	x			Until Source has been identified
c. Corrective Action Standards Established	x			
d. Proper Target Ordnance Identified/Test Sources/Test Plot Established	x			
e. Most Probable Munitions (MPM) Identified	x			See Explosive Sighting Plan
f. MSD/MFGD Established	x			See Explosive Sighting Plan
g. Standards for Turn-In of Recovered MPPEH and Range-Related Debris	x			See 2.5.14
h. Exclusion Zone (EZ) identified in WP	x			Table 3-2
2. Documentation Requirements/Publications	**Yes**	**No**	**N/A**	**COMMENTS**
a. Notice to Proceed from Client	x			
b. Approval Letter for Work Plan	x			
c. Contractor Personnel Qualifications for All UXO Personnel verified	x			Verified by AECOM UXOQC and ERRG QA
d. Certificate of Grounding, Lightning Protection (if Required)	x			Certified electrician on site from first mobilization to properly ground Type II Explosive Storage Magazines
e. Approval Letter, MSD 1/600 (if Required)			x	
f. Explosive Safety Submission (ESS) (if Required)	x			
g. Delivery Order & All Modifications & Change Orders	x			To Include QAPP Addendum
h. Explosives Permits/License (If Required)	x			
i. GFE Inventory/Transfer Documentation (If Required)			x	
j. Dig Permits for Utilities (If Required)			x	
k. Rites of Entry (ROE) (If Required)	x			On site

l. Current MEC Sector SOPs, readily available	x			
m. Other Applicable Reference Publications/Materials, readily available	x			
3. QC Files Established	**Yes**	**No**	**N/A**	**COMMENTS**
a. Daily/Weekly QC Reports/Audits	x			
b. Approval Letter's, NTP, for contractor Operations	x			
c. Weekly/Monthly Reports (If Provided)	x			
4. Accident Prevention Plan (APP)/Site-Specific Safety & Health Plan (SSHP)	**Yes**	**No**	**N/A**	**COMMENTS**
a. Hazard Analysis & Risk Assessment for All Task & Equipment	x			
b. Training, General Site Workers HAZWOPER Qualified & Current 8-Hour Refresher	x			Verified by UXOQC and ERRG QA
c. Personnel Protective Equipment (PPE)	x			Observed daily
d. First Aid Equipment Shall be Immediately Available	x			
e. Emergency Eye-washes/Showers Comply with ANSI Standards	x			
f. Fire Extinguishers (Specify Type, Size, and Location)	x			
g. Visitor Safety Briefing	x			As needed with Visitor's Log on site
h. Emergency Notification List Posted & Available	x			
i. Emergency Routes/Maps Available & Issued to Each Team	x			Team leader is in possession of maps and routes/all personnel have been briefed on routes
j. Work Task Identified in Activity Hazard Analysis (AHA)	x			See work plan
k. Current MSDS(s) On-Site.	x			
l. Minimum of Two Personnel On-Site 1st Aid/CPR Trained, EM 385-1-1, Section 3, Page 19, Para 03.A.02	x			
m. 16-Unit 1st Aid Kits Approved by a Licensed Physician in the Ratio of 1 for every 25 personnel or less. EM 385-1-1, Section 3, Page 19, Para 03.A.03	x			

n. Adequate means of reporting Accidents/Near Misses to Client.	x			

5. Facilities. Reference EM 385-1-1	**Yes**	**No**	**N/A**	**COMMENTS**
a. Adequate Work Space & Facilities (Restrooms, etc.)	x			
b. Good Housekeeping (No Fire Hazards, Tripping Hazards, etc.)	x			
c. Approved and Suitable Containers for Flammable, Toxic, or Explosive Materials	x			
d. Approved/Adequate Explosive Storage Facilities	x			Type II Explosive Storage Magazines on site
e. Fire/Emergency Exits Clear & Unbarred. Fire extinguisher location(s), and route of escape posted as appropriate in facility	x			
f. Personnel Limits Maintained	x			
g. Site Security Adequate	x			Padlocked gate entry/combination
h. Toilets IAW EM 385-1-1, Section 2, Page 14, Para 02.B	x			
i. Washing Facilities IAW EM 385-1-1, Section 2, Page 16, Para 02.C	x			
6. Equipment. Reference Approved WP/Manufacturers Operators Manual	**Yes**	**No**	**N/A**	**COMMENTS**
a. Tools Appropriate and Serviceable	x			
b. Personnel Protective Equipment (PPE) Present, Serviceable & Utilized	x			
c. Equipment Calibrated (Last Cal. Date -------- Next Cal Date ---------)	x			Schonstedts/Whites/EM-61 functioned checked daily at the GEO Prove Out.
d. Survey Equipment Inspected & Serviceable	x			GPS/base stationed checked daily
e. Heavy Equipment Inspected & Serviceable IAW EM 385-1-1, Section 16, to include back up alarm and equipped with 1 fire extinguisher of 5-BC.	x			
f. Competent Person identified to inspect and accept Heavy Equipment IAW EM 385-1-1, Section 16.A.01	x			
g. Identified Site Vehicles are equipped with First Aid Kits and a 5-BCFire Extinguisher IAW EM385-1-1, Section 18.A.02 (10)	x			

h. Geophysical Equipment on-Hand & Serviceable	x			
i. Two Separate Means of Communications, Radio(s)/Cell Phone, Land Line(s)	x			Teams have radios issued daily
7. Explosive Storage/Receipt/Transportation Requirements. Reference EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Proper Storage Containers Type 2 Magazines Conforming to Standards Set froth in Section 55.206 of ATFP 5400.7,	x			
b. Placards will be displayed on the magazine(s) IAW w/DOD 6055.9-STD, Chapter 2 & 3 for Hazard Division stored in the magazine(s)	x			
c. Explosive Compatibility Groups Segregated Into Appropriate Hazards Divisions listed in Chapter 3, DOD 6055.9-STD	x			
d. Security Locks for the Magazines Shall Meet the Requirements Listed in Section 55.208 (a) (4), ATFP 5400.7	x			
e. Key control will be documented in the WP	x			
d. Lightning Protection System Serviceable & Tested (Test Date _____)	x			Properly grounded/certified electrician At storage magazines
e. Fire Fighting placarding Will be Posted on the Fence IAW DOD 6055.9-STD, Chapter 8 & DA PAM 385-64, Chapter 3 for Hazard Division stored in the magazine(s)			x	
f. Fire Protection Consisting of Extinguishers, 10-BC or Larger Located at Magazine Area & Vegetation & Trash Cleared in & Around Magazine Area.	x			X2 fire extinguishers/high grass cleared around magazines ongoing
g. Quantity Distance From Magazine IAW WP & Explosive Safety Submission (ESS)	x			
h. Accountability Records Maintained IAW 55.125, ATFP 5400.7	x			
i. Explosive NEW Limits Do Not Exceed Limits Stated In the WP & ESS	x			
j. Licenses/Permits (If Required)	x			
k. Initial Receipt Procedures & Documentation On-Site	x			
l. Procedures for Transportation of Explosives IAW EM 385-1-1, Chapter 15	x			
m. Pre-Operational Checks of Vehicle Transporting Explosives Using Checklist	x			As needed

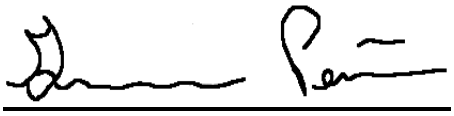
n. Cargo Properly Segregated, Blocked, & in Approved Containers.	x			As needed
o. Receipt Procedures Accounting for Each Item of Explosives/Documentation On-Site	x			
p. Individuals Authorized to Receive, Issue, and Transport Identified	x			
q. Final Disposition Procedures Documented	x			
r. Reconciliation, Lost/Stolen Receipt Documents/Procedures On-site	x			
s. Inventory Conducted Weekly @ Minimum	x			On site 20 May 10, initial inventory for second mobilization completed

9. MEC Operational Plan. Reference Approved WP & EP 1110-1-18	**Yes**	**No**	**N/A**	**COMMENTS**
a. Contractor Following Methodology Defined in WP	x			
1) Daily Safety Meeting Conducted by UXOSO	x			Held at 0700 daily
b. Detection Equipment Used	x			
1) Pre-Operational Checks Performed Prior to Sweep Operations	x			Observed by QA
2) Operational Condition Annotated in Log Book	x			
3) Team Composition	x			
4) Quality Control	x			AECOM QC is following the Three Phase approach
5) Quality Control Documentation	x			On site
c. Operational Teams Operating IAW WP	x			
1) UXO Supervisor conducted Physical Check Prior to Operation	x			
2) Pre-Operational/Safety Brief Conducted	x			
3) Individual Sweep Lanes Marked IAW WP	x			
4) Contacts Marked & Investigated Properly	x			QA observed mag/flag/intrusive operations and proper digging techniques were being utilized
5) Results of Sweep Operation Recorded	x			Team leaders are noting results on dig sheets and in their logbook
6) All MEC, Munitions Debris and MPPEH is examined and positively identified by at least two UXO qualified personnel. (a) Actions taken when MEC items identified are consistent with WP/MPM.	x			

7) All MEC/UXO Clearly Marked	x			
d. QC Operations IAW WP	x			Following three phase approach and conducting blind seed operations/QC of grids as per WP
e. Other Material Being Collected (as Required)	x			
f. MPPEH Inspected/Vented/Segregated	x			Inspected and separated/ongoing
g. Geophysical Test Grids Appropriate and IAW SOW	x			
h. Project Data Base and PDAs entries are consistent with Intrusive Results			x	No pda entries, all hard copy

10. Disposal Operations IAW WP and 60-1-1-31	**Yes**	**No**	**N/A**	**COMMENTS**
a. Disposal Method IAW WP	x			
b. Adequate Security For Disposal Operation	x			
c. Disposal Notification List Available	x			
d. All Necessary Notifications Made	x			
e. Movement of MEC Items, or is MEC Consolidation Feasible	x			
f. Protective Measures/Tamping Being Used/Appropriate for MEC Being Destroyed	x			
g. Disposal Procedures IAW 60A-1-1-31/WP	x			
h. Conducted adequate Demolition Brief	x			
1) Misfire Procedures Properly Performed			x	
11. Location Survey & Mapping Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. Registered Land Surveyor	x			
b. Surveyors Received Site Specific Training	x			
c. UXO Escort Provided	x			Daily as needed
d. Grid Stake, Locations Swept With Geophysical Equipment Prior to Driving Stakes	x			

e. Survey Notes Being Recorded	x			
12. Quality Control Plan	**Yes**	**No**	**N/A**	**COMMENTS**
a. QC Operational/Checks Being Conducted IAW WP	x			
b. QC Grid Sweep Pattern Adequate	x			Proper use of Whites and Schonstedts is being utilized
c. Results of QC Checks Being Recorded	x			
d. Nonconformance reports issued if QC checks show discrepancies, or for QA failures	x			
e. Intrusive Results/Data Base/PDAs entries are checked by UXOQC	x			Hard copies only
13. Vegetation Removal	**Yes**	**No**	**N/A**	**COMMENTS**
a. Equipment Operated To Prevent Impact With Possible Surface MEC	x			
b. Cutting Does Not Present Implement Hazard	x			
c. UXO Personnel Monitoring Cutting Operation	x			
d. MEC Discovered Marked/Handled Appropriately	x			
e. Equipment Being Operated Safely & IAW Operators Manual	x			

SIGNATURE: 

MEC QA INSPECTION AND AUDIT LOG

DATE: 02 Feb 10	**TIME:** 0700-1730	**LOG #:** ET-001
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Vegetation Removal Operations
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Perform QA observation of site safety and familiarization briefing given to Timberline Brush Crew personnel. Timberline personnel delayed operations until the required spill protection (spill kit) was acquired. Observations continued during commencement and execution of vegetation removal operations with no discrepancies observed.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 03 Feb 10	**TIME:** 0700-1730	**LOG #:** ET-002
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

PPE Usage by Site Personnel

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed a QA inspection of PPE usage by site personnel during UXO Safety Escort and vegetation removal operations. All PPE required for operations on site were utilized, no discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 04 Feb 10	**TIME:** 1500	**LOG #:** ET-003
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

AECOM UXOQC Reports

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT: Work Plan

Conducted a QA Inspection of the UXOQC documentation, all reports IAW with the Work Plan.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 05 Feb 10	**TIME:** 1430	**LOG #:** ET-004
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Site Personnel Certification Files

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed a QA inspection of the site personnel certification files. Made periodic checks throughout the week as the files were updated and completed. Site files now show all site personnel are in compliance with required training and certification.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 05 Feb 10	**TIME:** 0900-1630	**LOG #:** ET-005
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

EM-61 GEO Test Strip Establishment

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed QA inspections and observations during the construction of the EM-61GEO Test Strip. The Construction was overseen by the AECOM DGM Manager, John Dickerson. The Test Strip was constructed IAW with the Work Plan, no discrepancies observed.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 8 February 2010	**TIME:** 0700-1630	**LOG #:** ET-006
WEATHER CONDITION: Sunny and clear		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Observed DGM manager and geo team set up EM-61, perform function check of EM-61 on test plot and start geo operations by collecting data in Area A.

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

All work for EM-61 operations is being completed as per the work plan with no discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 9 February 2010	**TIME:** 0730-1630	**LOG #:** ET-007
WEATHER CONDITION: Overcast with rain starting at 1430		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Observed UXO sweep team begin operations in Area C

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Sweep team is utilizing proper spacing between lanes and sweeping lanes according to work plan.
Proper PPE is being worn by team members.
No discrepancies noted

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 10 February 2010	**TIME:** 0730-1630	**LOG #:** ET-008
WEATHER CONDITION: Clear and sunny, Low 47 High 59		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Observed UXO escort in support of Timberline brush cutting operations
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
UXO escorts are utilizing proper PPE
Safe distance from operators is being observed by UXO escorts
Escorts are visually sweeping ahead of operators
UXO escorts are observing safety precautions in every aspect of their duties
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 11 February 2010	**TIME:** 0730-1630	**LOG #:** ET-009
WEATHER CONDITION: Sunny		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

QC blind seeding operation in Area A

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Observed AECOM UXOQCQC conducting blind seed operations in Area A for confirmation of EM-61coverage of the area as per the QC work plan. Seed placement details such as depth, attitude, seed type and location coordinates were documented and kept confidential. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 08-12 Feb 10	**TIME:** Daily, Prior to operations	**LOG #:** ET-010
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Hand held detector Function Test Area

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed QA inspections and observations during the daily performance of function testing of hand held detectors by UXO team personnel at the designated function test area prior to the commencement of operations.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 16-19 February 2010	**TIME:** 0730-1630	**LOG #:** ET-011
WEATHER CONDITION: Clear		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Observed UXO teams conduct operations in Areas A and C
Geophysical operations
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Geophysical mapping and UXO teams are conducting MEC operations in accordance with the
work plan. Proper PPE is being worn by team members.
No discrepancies noted
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 16 Feb 10	**TIME:** 1400	**LOG #:** ET-012
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Explosives Storage Magazine Grounding Certification

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT: Work Plan

Conducted a QA Inspection of the grounding letter documentation/certification issued by the licensed electrician after grounding of the explosive storage magazines was performed IAW EM 1110-1-4009 and EM 365-64.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 19 Feb 10	**TIME:** 1400	**LOG #:** ET-013
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

AECOM Daily Reports

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT: Work Plan

Conducted a QA Inspection of the AECOM Daily Reports, no discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 16-19 Feb 10	**TIME:** Daily, Prior to operations	**LOG #:** ET-014
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Hand held detector Function Test Area

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed QA inspections and observations during the daily performance of function testing of hand held detectors by UXO team personnel at the designated function test area prior to the commencement of operations.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 19 Feb 10	**TIME:** 0700-1730	**LOG #:** ET-015
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Observed AECOM QC plant seeds in Area B

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA oversight of AECOM QC planting blind seeds in Area B, QC noted depth, attitude and location with the use of a GPS.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 24 Feb 10	**TIME:** 0700-1730	**LOG #:** ET-016
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Area A mag and flag intrusive operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA oversight of Team II intrusive operations, observed team using proper sweep techniques with Whites and Schonstedts. Observed proper dig techniques of anomalies(digging to the side of anomaly) and proper documentation by team leader on dig sheet and log book.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 25 Feb 10	**TIME:** 0700-1730	**LOG #:** ET-017
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

UXO teams function check of equipment

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA oversight of UXO teams performing a function check of Whites and Schonstedts in the morning before conducting operations in the grid as per the work plan ensuring proper operation
. of equipment.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 4 MAR 2010	**TIME:** 0700-1730	**LOG #:** ET-018
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

UXO teams intrusive operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Observed throughout the week proper digging techniques being implemented by UXO teams, digging to side of anomaly and documentation of same. PPE and proper safety procedures were Implemented at all times, no discrepancies observed.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 4 MAR 2010	**TIME:** 0700-1730	**LOG #:** ET-019
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
UXO teams decontamination procedures.
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Observed proper decontamination procedures performed by UXO teams when the exit the grid.
All personnel were utilizing PPE appropriately and observing safety precautions.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 4 MAR 2010	**TIME:** 0700	**LOG #:** ET-020
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

UXO teams function check of detectors at designated function check area

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA oversight of UXO teams performing a function check of Whites and Schonstedts in the morning before conducting operations in the grid as per the work plan ensuring proper operation of equipment.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 11 March 10	**TIME:** 0700-1730	**LOG #:** ET-021
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Observed AECOM UXOQC Perform Follow-up Inspections
Observed UXO Team conduct intrusive/Mag and Flag operations in Area A and B
Inspection of AECOM UXOQC Daily Reports
Shoenstedt Function Checks
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT**:**
QA oversight of AECOM UXOQC performing Follow-up inspections of Geophysical operations,
Intrusive and Mag and Flag operations.
Observed UXO teams function testing their Schonstedts daily prior to use in MEC operations.
Observed UXO teams using proper sweep techniques and proper equipment (schonstedt) usage
during MEC operations.
Performed a QA Inspection of AECOM UXOQC Daily Reports, which are being completed IAW the
QC/work plan.
No discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 17 MAR 2010	**TIME:** 0700-1730	**LOG #:** ET-022
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Mag and flag ops

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observance of intrusive ops in Area A, proper setup of sweep lanes and use of Whites and Schonstedts were being utilized by Team 1. The use of proper digging techniques and data log
. entry were also being adhered to. Proper PPE is also being utilized by Team 1

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 17 MAR 2010	**TIME:** 0700-1730	**LOG #:** ET-023
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

UXOQC Daily for Preparatory Phase for Demolition Operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA review of AECOM UXOQC conduction of the Preparatory Phase Inspection and training for Demolition Operations to be conducted next week. Proper training and inspections were performed IAW QC Plan and ESS.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 18 MAY 2010	**TIME:** 1330-1630	**LOG #:** ET-024
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

GPS Survey Operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observance of GPS survey ops of mag and dig boundaries. GPS rover was checked utilizing the GPS check point. Survey operations were conducted in a safe manner. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 18 May 10	**TIME:** 1200-1330	**LOG #:** ET-025
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

GEO Test Strip Establishment

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed QA observations during the construction of the GEO Test Strip.
The test strip location was scanned for existing anomalies by AECOM personnel prior to test strip installation, existing anomalies were identified and marked. Test items were emplaced at predetermined depths and locations and marked. QA conducted an inspection of the test strip utilizing a handheld White's detector, all items located.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 19 May 10	**TIME:** 0800	**LOG #:** ET-026
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Preparatory Phase Inspection Meeting

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Performed QA participation in the Preparatory Phase Meeting attended by site management and team leaders. Intrusive and Reacquisition operations process and procedures were covered and discussed as well as scope and objectives. Initial Phase Inspections will be the next step taken once these operations commence.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 19 May 10	**TIME:** 1030 - 1330	**LOG #:** ET-027
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Initial Phase Inspections

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Observed UXOQC perform Initial Phase inspections of Reacquisition and Intrusive operations. Operations were conducted in accordance with approved process and procedures as covered in the Preparatory Phase Meeting. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 20 May 10	**TIME:** 1030 - 1130	**LOG #:** ET-028
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Explosives Delivery and Storage Magazine Procedures

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of explosives delivery to site, delivery was done safely with no discrepancies noted.
QA and UXOQC conducted inspections of magazine storage procedures. It was noted and discussed that NAVSEA OP5 is to be followed as the site is Navy property and the magazines will be placarded accordingly with the proper explosives hazards.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 20 May 10	**TIME:** 0700 - 1630	**LOG #:** ET-029
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Intrusive Operations and Safe Work Practices

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of intrusive operations conducted on site today. AECOM personnel conducted operations utilizing proper dig techniques and operated in a safe manner with usage of proper PPE Specific poison oak precautions were implemented as needed and decontamination procedures were performed after completion of operations. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 21 May 10	**TIME:** 0700	**LOG #:** ET-030
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Detector Function Check Procedures

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of AECOM personnel conducting function checks of their detectors daily prior to the commencement of operations. Team members checked all detectors to be used for MEC operations were function checked correctly to assure proper operating condition for use during investigations.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 21 May 10	**TIME:** 0800 - 1330	**LOG #:** ET-031
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

No Find Investigation Operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observations and inspections of the No Finds Investigations performed by AECOM. Observed AECOM performing operations with no discrepancies noted. QA conducted inspections of 10% of the No Find investigations completed by AECOM with no discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

ERRG MECQA Specialist

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 24 May 10	**TIME:** 0800 - 1630	**LOG #:** ET-032
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Safe Work Practices
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
QA observations and inspections of AECOM personnel performing Mag and Dig operations. All
personnel observed performing tasks in a safe manner and utilizing all proper and required PPE.
No discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Tierri	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 24 May 10	**TIME:** 1630	**LOG #:** ET-033
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
DGM: 392, 393, 395, 398, 408, 410, 411, 415, 417, 418, 420, 425, 430, 434, 444, 448, 457, 458, 461, 467, 471, 476, 479
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of the DGM targets listed in section A utilizing a White's all metals detector. Visited each target and performed a search for any remaining anomalies. No anomalies detected, no discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Tierri	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 25 May 10	**TIME:** 1630	**LOG #:** ET-034
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Mag and Dig Grid 1
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of no less than 10% of Mag and Dig Grid #1 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Tierri	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 26 May 10	**TIME:** 1630	**LOG #:** ET-035
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Mag and Dig Grids 3 and 13
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of no less than 10% of Mag and Dig Grid #3 and 13 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Tierri	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 27 May 10	**TIME:** 1630	**LOG #:** ET-036
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Mag and Dig Grids 8,12,14,16,17,and 25
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of no less than 10% of Mag and Dig Grids 8,12,14,16,17,and 25 utilizing
a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed
a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Tierri	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 27 May 10	**TIME:** 0800 - 1630	**LOG #:** ET-037
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Vegetation/Brush Cutting Operations
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
QA observations of AECOM personnel performing vegetation/brush cutting operations.
Tasks were performed in a safe manner and all proper and required PPE were utilized.
No discrepancies noted.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Fierro	Francisco M Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 28 May 10	**TIME:** 1630	**LOG #:** ET-038
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Mag and Dig Grids 2, 5, 14 and 18
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of no less than 10% of Mag and Dig Grids 2, 5, 14 and 18 utilizing
a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed
a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 28 May 10	**TIME:** 0700	**LOG #:** ET-039
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Detector Function Check Procedures

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of AECOM personnel conducting function checks of their detectors daily prior to the commencement of operations. Team members checked all detectors to be used for MEC operations were function checked correctly to assure proper operating condition for use during investigations.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 28 May 10	**TIME:** 1430	**LOG #:** ET-040
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

QA and QC Blind Seed recovery from 24 May to 28 May

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

This QA Audit documents the recovery of QA and QC blind seeds by the MEC Teams for the work week ending 28 May 2010. Both QA and QC Blind seed recovery is documented daily in the QA Daily Report by seed number and grid location. The seed numbers are listed below.

QC Blind Seeds: 02, 03, 05, 10, 18, 19, 21, 23, 24, 28, 29

QA Blind Seeds: 03, 04, 06, 07

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 01 June 10	**TIME:** 1630	**LOG #:** ET-041
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Mag and Dig Grids 4, 20, 21 and 6

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Conducted QA inspections of no less than 10% of Mag and Dig Grids 4, 20, 21 and 6 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 02 June 10	**TIME:** 1630	**LOG #:** ET-042
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
Mag and Dig Grids 11, 15, 19, 22 and 23
Re-inspect Grid 7 after QC failure on 01 June, 2010
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
Conducted QA inspections of no less than 10% of Mag and Dig Grids 11, 15, 19, 22 and 23 utilizing
a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed
a search for any remaining anomalies within the grid. No anomalies detected, no discrepancies.
Re-inspect Grid 7 after 01June Deficiency Notice, Grid 7 QA pass with no discrepancies noted
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Fierro	Francisco M Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 03 June 10	**TIME:** 0700 - 1630	**LOG #:** ET-043
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Intrusive Operations and Safe Work Practices

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of intrusive operations conducted on site today. AECOM personnel conducted operations utilizing proper dig techniques and operated in a safe manner with usage of proper PPE Specific poison oak precautions were implemented as needed and decontamination procedures were performed after completion of operations. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 04 June 10	**TIME:** 1630	**LOG #:** ET-044
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Mag and Dig Grids 24, 28, 29 and 32

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Conducted QA inspections of no less than 10% of Mag and Dig Grids 24, 28, 29 and 32 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected and no discrepancies.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 04 June 10	**TIME:** 0700	**LOG #:** ET-045
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Detector Function Check Procedures for week from 01 June to 04 June, 2010

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of AECOM personnel conducting function checks of their detectors daily prior to the commencement of operations. Team members checked all detectors to be used for MEC operations were function checked correctly to assure proper operating condition for use during investigations.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

Luis E. Fierro

ERRG MECQA Specialist

Francisco M. Cole

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 04 June 10	**TIME:** 1430	**LOG #:** ET-046
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

QA and QC Blind Seed recovery from 01 June to 04 June, 2010

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

This QA Audit documents the recovery of QA and QC blind seeds by the MEC Teams for the work week ending 04 June 2010. Both QA and QC Blind seed recovery is documented daily in the QA Daily Report by seed number and grid location. The seed numbers are listed below.

QC Blind Seeds: 08, 09, 11, 12, 13, 14, 15, 16, 17, 20, 26 and 27

QA Blind Seeds: 02 and 05

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 07 June 10	**TIME:** 1630	**LOG #:** ET-047
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Mag and Dig Grids 26, 27, 9, and 10

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Conducted QA inspections of no less than 10% of Mag and Dig Grids 26, 27, 9, and 10 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected and no discrepancies.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 08 June 10	**TIME:** 1630	**LOG #:** ET-048
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Mag and Dig Grids 30, 31, and 33

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

Conducted QA inspections of no less than 10% of Mag and Dig Grids 30, 31 and 33 utilizing a White's all metals detector. Used a meandering pattern and intersecting lines pattern to performed a search for any remaining anomalies within the grid. No anomalies detected and no discrepancies.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM

Luis E. Fierro

ERRG MECQA Specialist

Francisco M. Cole

ERRG QA Manager

MEC QA INSPECTION AND AUDIT LOG

DATE: 08 June 10	**TIME:** 0700 - 1630	**LOG #:** ET-049
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Intrusive Operations and Back Hoe Safe Work Practices

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of intrusive operations conducted on site today. AECOM personnel conducted operations utilizing proper dig techniques and operated in a safe manner with usage of proper PPE Also conducted observations of Back-Hoe operations conducted to dig demolition pits for upcoming Demolition operations. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 09 June 10	**TIME:**	**LOG #:** ET-050
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)

Demolition Operations

B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:

QA observation of Demo operations conducted on site today. AECOM personnel conducted Demo Safety and operational briefs to all AECOM Personnel. QA Also observed the set up and performance of demolition procedures. All operations were conducted in a safe manner with usage of proper PPE. No discrepancies noted.

C. CORRECTIVE ACTIONS RECOMMENDED (If required):

N/A

D. REINSPECTION RESULTS (If required):

N/A

E. SIGNATURE:

I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).

NAVFAC RPM	
Luis E. Fierro	Francisco M. Cole
ERRG MECQA Specialist	**ERRG QA Manager**

MEC QA INSPECTION AND AUDIT LOG

DATE: 09 June 10	**TIME:** 1430	**LOG #:** ET-051
WEATHER CONDITION:		

A. AREAS INSPECTED: (Listed by grid number, coordinates or description)
QA and QC Blind Seed recovery from 07 June to 09 June, 2010
QA verification od discovery of QC Seeds 01, 04, 06, 07 and 30
Verify all QA Seeds have been discovered
B. INSPECTION RESULTS: QA PASS REFERENCE DOCUMENT:
This QA Audit documents the recovery of QA and QC blind seeds by the MEC Teams for the work week ending 09 June 2010. QA and QC Blind seed recovery is documented daily in the QA Daily Report by seed number and grid location. The seed numbers are listed below.
QC Blind Seeds: 22 and 25
QA Blind Seeds: 01
QA also verified the discovery of QC Seeds 01, 04 and 06 were recovered on 26 May, QC Seed 07 recovered on 27 May and QC Seed 30 recovered on 01 June.
C. CORRECTIVE ACTIONS RECOMMENDED (If required):
N/A
D. REINSPECTION RESULTS (If required):
N/A

E. SIGNATURE:	I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary).
NAVFAC RPM	
Luis E. Fierro	Francisco M Cole
ERRG MECQA Specialist	**ERRG QA Manager**

Appendix D. ERRG Field QA Daily and Weekly Reports

MEC QA DAILY REPORT

Date: 01, 02 FEB, 2010

Name/Location of Work Area/s:
Weather Conditions: Clear and Sunny **Temperature: Low:** 40 **High**: 70

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - 01 Feb, Site kick off meeting and site familiarization is conducted with AECOM and Stakeholders, site set-up commences.
   - AECOM assigned three escort UXO Techs to conduct Schonstedt assisted visual sweeps ahead of vegetation removal personnel.
   - Timberline performed vegetation removal operations utilizing a bobcat /brush hog, chainsaw and weed trimmer.

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline arrives on site and given a UXO safety/AHA brief by site safety and UXO safety.
   - Timberline preps for the day's work and starts brush cutting operations at 1430 after acquiring the required spill protection.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - Prep work continues for AECOM, team sent off site to pick up MOFB (miniature open front barricade).

4. **QA AUDITS AND ACTIVITIES:**
   - Observe and audit brush cutting operations, see QA Audit EL-001.
   - Continue to audit certifications for work crew on site until all certifications are established; see QA Audit EL-002.

5. **Work Day's Highlights:**
   - Timberline starts vegetation removal operations.

Production Units Completed Today: N/A

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Truck	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 3 FEB 2010

Name/Location of Work Area/s:
Weather Conditions: Sunny **Temperature: Low:** 40 **High**: 68

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO escort operations continue in support of Timberline brush cutting operations in Area A.
   - UXO teams conduct visual survey of Area C in preparation for survey operations in Area C.

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline vegetation removal continues in Area A.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - AECOM UXOQC conducts follow up phase inspection on vegetation removal operations.

4. **QA AUDITS AND ACTIVITIES:**
   - Continue QA inspection of required certifications for AECOM employees on site.
   - Proper PPE being utilized by all site personnel with safe distances from machinery observed, See QA Audit ET-003.

5. **Work Day's Highlights:**
   - Area C visually inspected by UXO team in preparation for survey operations.
   - Brush cutting continues in Area A.

Production Units Completed Today: N/A

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

No pictures documented today.

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 4 FEB 2010

Name/Location of Work Area/s:
Weather Conditions: Sunny/overcast **Temperature: Low:** 40 **High**: 67

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM provided UXO escort for survey crew and for brush cutting operations.

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline is continuing brush cutting operations in Area A.
   - Survey crew is placing 200 by 200 foot grids in Area C.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   AECOM QC is performing inspections as required by the QC/work plan

4. **QA AUDITS AND ACTIVITIES:**
   - Inspected AECOM QC reports with no discrepancies noted, see AQ Audit ET-004.
   - Observed proper PPE is being utilized and work is being performed according to SOW.

5. **Work Day's Highlights:**
   - AECOM UXO team clears a path for Schonstedt and Whites test plot in accordance to work plan.

Production Units Completed Today: N/A

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by AVFAC RPM/ROICC/Client Personnel:

PICTURES

Survey operations

Progression of cutting ops

Setting up test plot

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 5 FEB 2010

Name/Location of Work Area/s:
Weather Conditions: Rain **Temperature: Low:** 46 **High**: 57

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM UXO escort operations continue in support of Timberline brush cutting in Area A.
   - AECOM UXO escort continues in support of survey operations in Area C.

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline continues brush cutting operations in Area A.
   - Survey team working in Area C placing 200 by 200ft grids with UXO escort. Survey crew stops work mid day due to rain.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - AECOM QC holds Preparatory and Initial phase QC Inspections for UXO mag and flag/intrusive operations in Area C.

4. **QA AUDITS AND ACTIVITIES:**
   - Audit updated certification files for site personnel, see QA Audit ET-004.
   - Observe brush cutting operations with no discrepancies noted.
   - Observe DGM manager set up the EM-61test strip; see QA Audit ET-005.

5. **Work Day's Highlights:**
   - DGM manager on site with EM-61 team, safety brief given to team.
   - DGM team proceeds to put GPO in, no discrepancies noted.

   Production Units Completed Today: N/A

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Setting up test plot for EM-61

Checking for depth of test items for test plot

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 8 FEB 2010

Weather Conditions: Sunny **Temperature: Low:** 44 **High**: 70

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO escorts provided for brush cutting operations and for survey operations in Area A
   - UXO escort also provided for EM-61 operations in Area A and B.

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.
   - Survey team placing grid stakes in Area A.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC does follow up inspections on brush cutting operations and survey operations.

4. **QA AUDITS AND ACTIVITIES:**
   - Inspected AECOM new hire certifications with no discrepancies noted.
   - Visually observed EM-61 set up and conduct function checks and operations in Area A, see QA Audit ET-006.
   - Observed brush crew operations in Area A.
   - All operations are being performed according to work plan and proper safety measures are being utilized.

5. **Work Day's Highlights:**
   - Geo team sets up EM-61 and performs equipment check over test plot for data check.
   - Geo team starts collecting data in Area A. Survey team completes placing 200 by 200ft grid stakes for the site.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Testing EM-61 on prove out grid

Collecting data in Area A

Brush cutting ops in Area A

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 9 FEB 2010

Weather Conditions: Overcast/rain **Temperature: Low:** 53 **High**: 59

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM UXO sweep team starts operations in Area C and is performing work according to work plan
   - UXO escort also provided for brush cutting and geo operations in Area A

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts initial phase for UXO sweep operations in Area C and continues follow up inspections of brush cutting and geo operations.

4. **QA AUDITS AND ACTIVITIES:**
   - Observe off loading of Explosive storage magazines
   - Observe UXO teams perform function check of Schonstedt and Whites
   - Observe UXO sweep team start operations in Area C, see QA audit ET-007
   - Observe geo operations in Area A

5. **Work Day's Highlights:**
   - Explosive storage magazines arrive on site
   - Sweep operations have begun in Area C

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Function check of Whites all metal detector

UXO team conducting sweep operations

Brush cutting operations with UXO escorts

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date:10 FEB 2010

Weather Conditions: Clear/sunny **Temperature: Low:** 46 **High**: 59

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO escorts provided for brush cutting and Geo EM-61 operations
   - UXO sweep team conducting intrusive operations in Area C

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspection on UXO intrusive operations in Area C

4. **QA AUDITS AND ACTIVITIES:**
   - Observes UXO team intrusive operations in Area C
   - Observes UXO escort operations in support of brush cutting, see QA audit 008
   - Observe QC implement blind seed operations in Area C
   - Observe Geo team prepare and complete function check for EM-61

5. **Work Day's Highlights:**
   - QC begins placing blind seeds in Area C

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

QC OPERATIONS

QC SEED

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 11 FEB 2010

Weather Conditions: Clear/Sunny **Temperature: Low:** 53 **High**: 59

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Geo team continues to collect data in Area A.
   - UXO continues intrusive operations in Area C.

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts follow up inspections of brush cutting and geo operations.
   - UXOQC performs follow up inspections of intrusive operation in Area C.

4. **QA AUDITS AND ACTIVITIES:**
   - Observes certified electrician properly ground explosive storage magazines.
   - Observes Geo EM-61 operations in Area A.
   - Observes QC seeds being placed in Area A and Area C, see QA Audit 009.
   - Observes brush cutting operations in Area A.

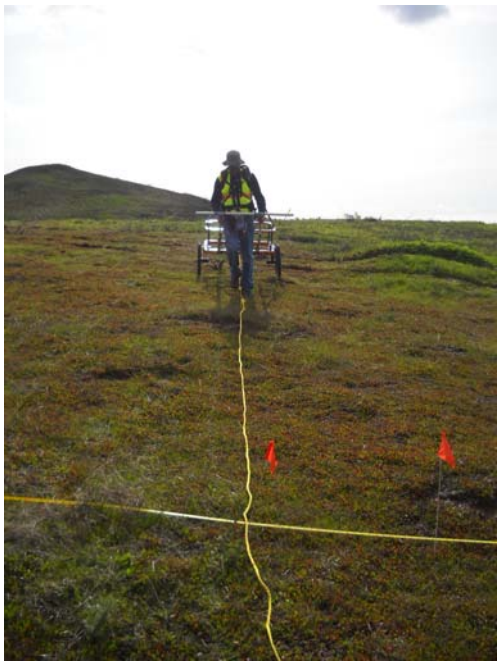
5. **Work Day's Highlights:**
   - QC seeds placed in Area A for Geo EM-61 to confirm proper coverage of area.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Placing seeds in Area A to confirm proper coverage of area by EM-61



EM-61 operations in Area A

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 12 FEB 2010

Weather Conditions: Clear/Sunny **Temperature: Low:** 49 **High**: 59

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO team doing intrusive operations in Area C
   - UXO escort also provided for brush cutting and geo operations in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of, intrusive, brush and Geo operations

4. **QA AUDITS AND ACTIVITIES:**
   - Performed QA Oversight inspection of AECOM UXOQC follow up activities, UXOQC is following the three phases of control as per the work plan.
   - Observed intrusive team on an anomaly dig. Proper dig techniques were applied i.e. digging to the side of the anomaly, proper identification of item by a Tech II and the Team leader, GPS coordinates taken and logged onto dig sheet by the team leader and proper backfill of dig to show as little disturbance as possible.
   - Observed Geo and brush cutting operations.

5. **Work Day's Highlights:**
   - Biologist on site for follow up inspection of vegetation removal as to the effect on the California gnatcatcher and other birds which may be protected by the MBTA. No discrepancies were observed.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Sweeping with Whites all metal

Anomaly GPS

Proper backfill of dig

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 16 FEB 2010

Weather Conditions: Clear/Sunny **Temperature: Low:** 50 **High**: 80

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO team doing intrusive operations in Area C
   - UXO escort also provided for brush cutting and geo operations in Area A

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of, intrusive, brush and Geo operations

4. **QA AUDITS AND ACTIVITIES:**
   - QA inspection of letter from electrician stating that the explosive storage magazines are properly grounded
   - Observed UXO teams performing a function check of Whites and Schonstedts
   - Observed Geo EM-61, brush cutting and UXO intrusive operations on site with no discrepancies noted

5. **Work Day's Highlights:**
   - AECOM holds an emergency response drill for personnel on site

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

NO PICTURES

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 17 FEB 2010

Weather Conditions: Clear/Sunny **Temperature: Low:** 49 **High**: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO Team 1 doing intrusive operations in Area C, UXO Team 2 starts anomaly investigation operations in Area A
   - UXO escort also provided for brush cutting and geo operations in Area A

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Timberline brush cutting crew continues operations.

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of, intrusive, brush and Geo operations and conducts Initial Phase for UXO operations of anomaly investigations in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO intrusive operations in Area C
   - Observed brush cutting and GEO operations with UXO escort, no discrepancies noted
   - Observed UXO team start anomaly investigations in Area A

5. **Work Day's Highlights:**
   - UXO Team 2 starts anomaly investigation in Area A, Timberline completes brush cutting operations

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Reacquisition of anomalies in Area A

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 18 FEB 2010

Weather Conditions: Clear/Sunny **Temperature: Low:** 49 **High**: 69

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO Team 1 performing intrusive operations in Area A, UXO Team 2 performing intrusive operations in Area C
   - Geo team continues to collect data in Area A with UXO escort

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of intrusive operations in Area A and Area C
   - QC conducts follow up inspection of Geo operations in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO intrusive operations in Area A and Area C
   - Observed Geo operations in Area A
   - Inspected UXO new hire certifications, no discrepancies noted

5. **Work Day's Highlights:**
   - Five seeds planted by QC recovered by Team 1 in Area C, QC seed found by Team 2 in Area A.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Setting up base station

Geo prove out/function check in morning

Inputting data/ intrusive operations

Known point test for GPS

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 19 FEB 2010

Weather Conditions: Cloudy **Temperature: Low:** 51 **High**: 63

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO Team 1 performing intrusive operations in Area C, UXO Team 2 performing reacquisition/intrusive operations in Area A.
   - Geo team continues to collect data in Area A with UXO escort.

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of intrusive operations in Area C.
   - QC conducts follow up inspection of Geo operations in Area A.
   - QC conducts follow up inspection of reacquisition/intrusive operations in Area A.

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO reacquisition / intrusive operations in Area A and Area C.
   - Observed Geo operations in Area A.
   - Audit of AECOM QC daily reports.
   - Observed QC plant seeds in Area B.

5. **Work Day's Highlights:**
   - QC plants seeds in Area B

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Schonstedt use in heavy brush

QC planting seeds

Geo collecting data

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 22 FEB 2010

Weather Conditions: Sunny **Temperature: Low:** 41 **High**: 67

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO Team 1 performing intrusive operations in Area C, UXO Team 2 performing intrusive operations in Area A
   - Geo team continues to collect data in Area A with UXO escort

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up inspections of intrusive operations in Area C
   - QC conducts follow up inspection of Geo operations in Area A
   - QC conducts follow up inspection of intrusive operations in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO intrusive operations in Area A and Area C
   - Observed Geo operations in Area A
   - Observed UXO teams perform function check of Whites and Schonstedts

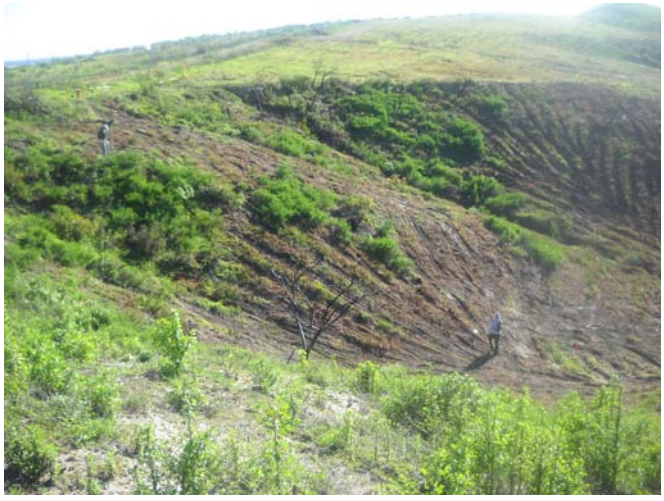
5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:
   - Navy RPM Jacqueline Dunn calls a halt to intrusive operations at 1300 hours on IRP Site 1 Adjacent Property Former MCASET, due to no explosives on site.

PICTURES

Intrusive operations of area not accessible to EM-61



Area to steep for EM-61 completed by UXO team

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 23 FEB 2010

Weather Conditions: Cloudy **Temperature: Low:** 46 **High**: 70

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Mag and flag operations continuing in Area A. Intrusive operations begin (after explosives show up on site and are inventoried) in Area A/C
   - Geo team continues to collect data in Area A with UXO escort

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC observes explosives received and inventory of same
   - QC conducts follow up of mag and flag and intrusive operations in Area A/C

4. **QA AUDITS AND ACTIVITIES:**
   - Observed/ read QC write up of QDN on geo/processing activities in Area A
   - Observed hazard classification of MPPEH, items separated and documented IAW WP
   - Observed receiving of explosives and inventory of explosives. Explosives stored and secured IAW WP

5. **Work Day's Highlights:**
   - Explosives are received on site

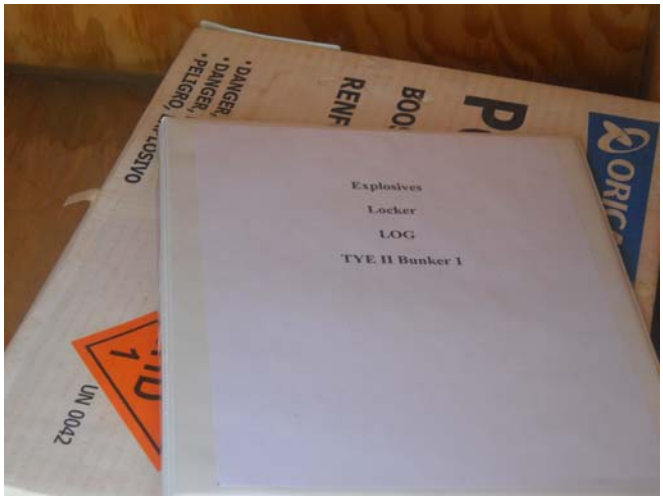
Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

40 MM Practice Grenade

Receiving explosives



Explosives log

Sweeping grid

Poison oak

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 24 FEB 2010

Weather Conditions: Sunny/cloudy **Temperature: Low:** 49 **High**: 65

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Mag and flag intrusive operations in Area A/B
   - Geo team continues to collect data in Area A with UXO escort
   - Reac operations performed in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC performs inspection of completed grids in Area A/C
   - QC conducts follow up of mag and flag intrusive operations in Area A/B

4. **QA AUDITS AND ACTIVITIES:**
   - Inspected new hire certifications
   - Observed mag and flag intrusive operations in Area B
   - Observed mag and flag intrusive operations in Area A(See QA audit ET-016)
   - Observed Geo operations in Area A

5. **Work Day's Highlights:**

   - Area C mag and flag/ intrusive operations completed

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

QC of grids in Area C

Collection of anomaly data

Sweeping grid in Area B

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 25 FEB 2010

Weather Conditions: Sunny/cool **Temperature: Low** 51 **High**: 66

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Mag and flag operations in Area B
   - Geo team continues to collect data in Area A with UXO escort
   - Reac operations performed in Area A
   - Mag and flag/intrusive operations in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up of reac operations in Area A
   - QC conducts follow up of mag and flag intrusive operations in Area A/B

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed Team 2 reac operations in Area A and mag and flag intrusive operations
   - Observed Team 3 mag and flag/intrusive operations in Area B

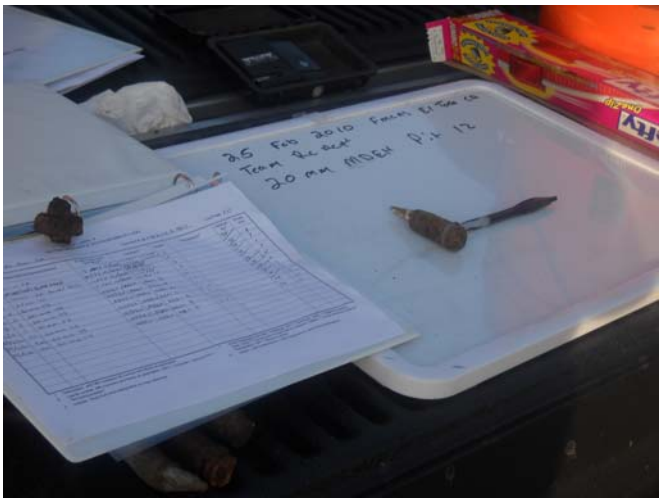
5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

PICTURES

Mag and flag operations



Documentation of items found

Function check of EM-61

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 1 MAR 2010

Weather Conditions: Sunny/cloudy **Temperature: Low** 44 **High**: 66

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive operations in Area A
   - Geo EM-61 collects data with UXO escort

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts follow up Geo operations in Area A
   - QC conducts follow up of mag and flag/intrusive operations in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed Geo set up and function check EM-61
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed UXO teams conduct mag and flag/intrusive operations in Area A
   - Observed QC perform inspection of completed grids in Area B
   - Inspected and confirmed new hire qualifications
   - Observed Geo operations in Area A

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:** AECOM
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel: Suxos put a halt to all work on the former MCASET and has placed all employees on a safety stand down until measures are put into place to prevent any AECOM employee from contacting poison oak. Steps are being taken by AECOM to employ these measures and be back in the grid by early/late afternoon on Tuesday.

PICTURES

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 2 MAR 2010

Weather Conditions: Sunny/cloudy **Temperature: Low** 45 **High**: 68

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM conducts training on hotline set up and proper decon procedures
   - Geo with UXO escort conducts reac operations in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducted follow up phase inspections of blind seed operations
   -

4. **QA AUDITS AND ACTIVITIES:**
   - Observed AECOM set up hotline and practice proper decon procedures
   - Observed Geo with UXO escort dress up in proper PPE(Tyvek, over boots and latex glove inserts) and reac in Area A
   - Audit of QC blind seed operations and follow up phase inspections

5. **Work Day's Highlights:** Jim Taylor (MARCORSYSCOM) on site for audit of operation on the former MCASET.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Practice decon setup

Tape up of gloves on Tyvek

Separation of cultural debris

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 3 MAR 2010

Weather Conditions: Breezy/cloudy **Temperature: Low** 46 **High**: 68

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive/reac operations in Area A
   - Geo EM-61 with UXO escort collects data in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducted follow up phase inspections of Geo operations and intrusive operations

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed decon procedures of UXO and Geo teams
   - Observed UXO team operations

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Taping up

Decon

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 4 MAR 2010

Weather Conditions: Breezy/cloudy **Temperature: Low** 48 **High**: 64

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive/ operations in Area A
   - Geo EM-61 with UXO escort collects data in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducted follow up phase inspections of Geo operations and intrusive operations
   - QC conducts inspection of completed grids in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed decon procedures of UXO teams
   - Observed UXO team operations in Area A/B
   - Observed Geo operations in Area A

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Sweeping grid in Area A

Disposal of waste

Excavating anomaly

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 10 MAR 2010

Weather Conditions: Cool/cloudy **Temperature: Low** 36**High**: 58

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive/ operations in Area A/B
   - Geo EM-61 with UXO escort collects data\gaps in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducted follow up phase inspections of Geo operations and UXO intrusive operations
   - QC conducts inspection of completed grids in Area A

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed decon procedures of UXO teams
   - Observed UXO team operations in Area A/B
   - Observed Geo decon of equipment
   - Observed QC conduct inspection of completed grids in Area A
   - Conducted audit of QC required daily reports

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Decon coming off grid

Known point function check of gps

Mag and flag in Area B

Mag and flag operations

Decon of EM-61

Function check of EM-61

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 11 MAR 2010

Weather Conditions: Cool/cloudy **Temperature:** Low 49 High: 69

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive/ operations in Area A/B
   - Geo EM-61 with UXO escort continues to collect data gaps in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts inspection of dig sheets
   - All QC seeds have been recovered

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed decon procedures of UXO teams
   - Observed UXO team operations in Area A/B
   - Observed Geo collect data gaps

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Mag and flag ops in Area A

Setting up 5ft sweep lanes

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 17 MAR 2010

Weather Conditions: Sunny and warm **Temperature:** Low 54 High: 81

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - UXO teams conduct mag and flag/intrusive/reac operations in Area A
   - Geo w/UXO escort investigate "no finds" with EM-61 in Area A

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts inspection of completed grids in Area B
   - QC performs inspection of dig sheets

4. **QA AUDITS AND ACTIVITIES:**
   - Observed UXO teams perform function check of Whites and Schonstedts
   - Observed decon procedures of UXO teams
   - Observed UXO team operations in Area A
   - Observed Geo investigate no finds in Area A
   - QA audit of QC dailies/prep phase for demo ops

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Digging on reac flags

Mag and flag/intrusive ops

EM-61 confirming no finds

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 23 MAR 2010

Weather Conditions: Sunny **Temperature:** Low 49 High 72

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM UXO demo team prepares for demo operations

   Demo Operations: ***4 shots total, 3 at 1000 hrs and 4th at 1500 hrs.***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - QC conducts initial and follow up inspection of demo operations
   - QC generates a Quality Deficiency Notice of DGM missed picks, data interpretation (see pictures)

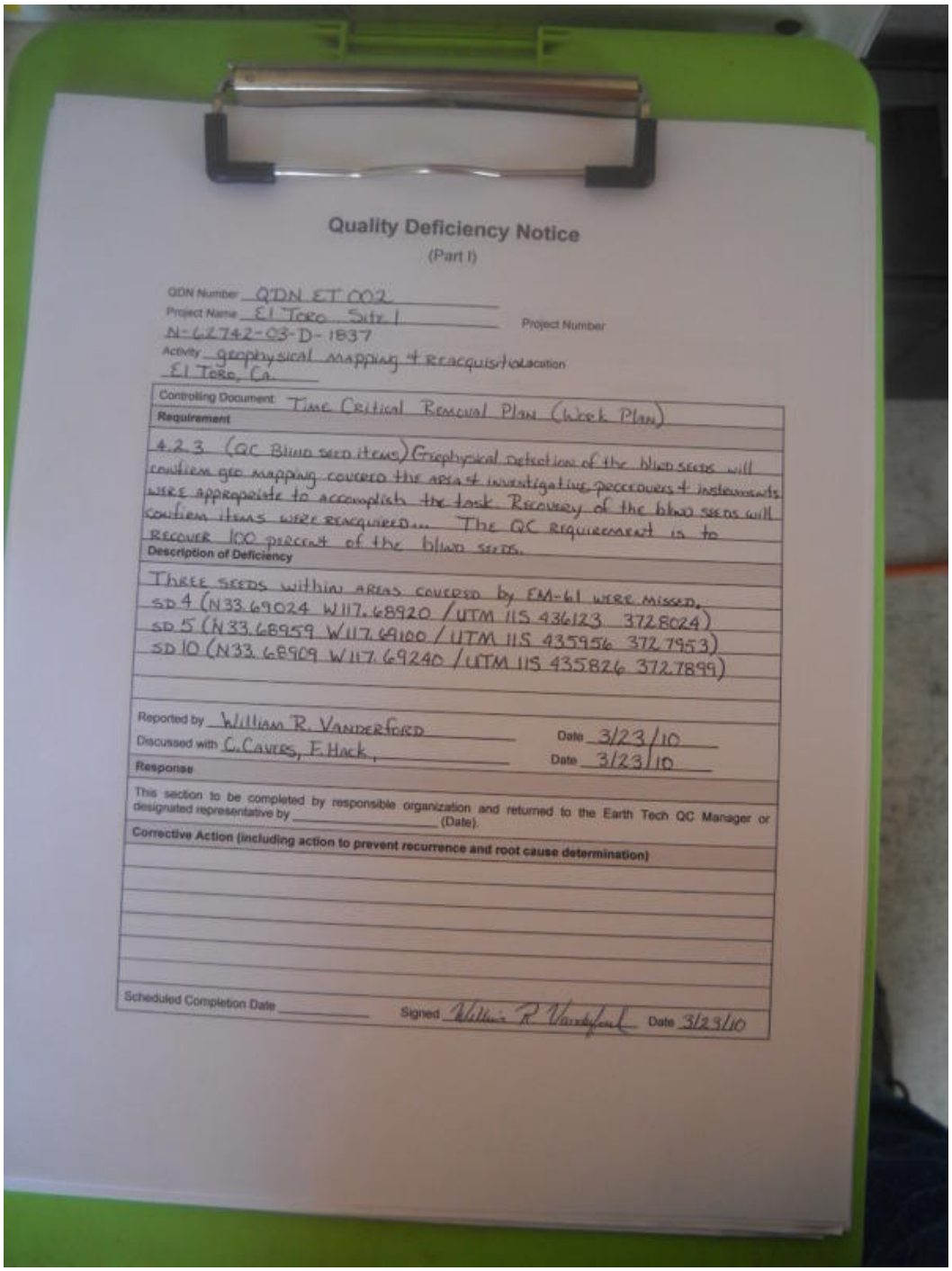
4. **QA AUDITS AND ACTIVITIES:**
   - Observed demo team prepare shot holes and demo set up
   - Observed proper tamping of demo shots in accordance with BEM
   - Observed AECOM perform proper safety techniques for demo operations
   - Inspection of QC daily reports and
   - Discussed the actions taken with UXOQC on the Quality Deficiency Notice

5. **Work Day's Highlights:** All demo shots go off as planned with no deficiencies and no incidents. MDAS has been inspected and will be picked up by Timberline Wednesday morning.
   Completion of all field work for AECOM is pending corrective action of GEO missed picks.

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures



Quality Deficiency Notice
(Part I)

QDN Number QDN ET 002
Project Name El Toro Site 1
Project Number N-62742-03-D-1837
Activity geophysical mapping & reacquisition
Location El Toro, Ca.

Controlling Document Time Critical Removal Plan (Work Plan)

Requirement

4.2.3 (QC Blind seed items) Geophysical detection of the blind seeds will confirm geo mapping covered the area & investigative peccouvers & instruments were appropriate to accomplish the task. Recovery of the blind seeds will confirm items were reacquired... The QC requirement is to recover 100 percent of the blind seeds.

Description of Deficiency

Three seeds within areas covered by EM-61 were missed.
SD 4 (N33.69024 W117.68920 / UTM 11S 436123 3728024)
SD 5 (N33.68959 W117.69100 / UTM 11S 435956 3727953)
SD 10 (N33.68909 W117.69240 / UTM 11S 435826 3727899)

Reported by William R. Vanderford Date 3/23/10
Discussed with C. Cavers, F. Hack, Date 3/23/10

Response

This section to be completed by responsible organization and returned to the Earth Tech QC Manager or designated representative by _____ (Date).

Corrective Action (including action to prevent recurrence and root cause determination)

Scheduled Completion Date _____ Signed William R. Vanderford Date 3/23/10

QC Deficiency Notice

Drawing demo

Setting up shot with boosters/det cord

Tamping

Shot out

Clean up

Confirming MDAS

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

MEC QA DAILY REPORT

Date: 18 MAY 2010

Weather Conditions: Cloudy and cool **Temperature:** Low 54 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Site Kick Off Meeting conducted, attended by AECOM, Navy BRAC Program Office and ERRG personnel
   - Navy biologists access and handle Finch situation on explosives storage magazine lock hood
   - Site Set Up by AECOM
   - Emplacement of Geophysical Test Strip
   - GPS Base Station set up
   - Commence Survey of Mag and Dig boundaries

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC and site management conduct scheduling meeting for upcoming Preparatory Inspections
   - UXOQC performs inspection of personnel certifications

4. **QA AUDITS AND ACTIVITIES:**
   - Attend Kick off meeting
   - Coordinate QA activities with UXOQC
   - Observed test strip installation
   - Inspect test strip with a handheld magnetometer (White's)
   - Observe GPS set up and survey operations

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Surveying the Mag and Dig Boundaries

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

ERRG QA Specialist

ERRG QA M

MEC QA DAILY REPORT

Date: 19 MAY 2010

Weather Conditions: Cloudy and cool **Temperature:** Low 55 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Site management preparatory phase meeting for reacquisition and intrusive operations conducted
   - Grass mowing operations conducted to clear the required (fifty foot on all sides) area around the explosives storage magazines
   - Reacquisition operations of the 95 anomalies
   - Intrusive operations of reacquired anomalies

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - No subcontractors on site

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts initial phase inspection of reacquisition and dig operations
   - UXOQC continues inspection of personnel certifications

4. **QA AUDITS AND ACTIVITIES:**
   - Attend QC preparatory meeting
   - Coordinate QA activities with UXOQC
   - Observed test initial reacquisition and intrusive operations

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Mowing Operations

Completed Mowed Area around Magazines

Reacquisition Operations

Reacquisition Ops in the Foreground /Intrusive Ops in the Background

Intrusive Operations

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

ERRG QA Specialist

ERRG QA Manager

MEC QA DAILY REPORT

Date: 20 MAY 2010

Weather Conditions: Cloudy in the AM/warm **Temperature:** Low 52 High: 72

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Survey of boundaries continue
   - Explosives delivered
   - Intrusive operations of reacquired anomalies continue

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   - Explosives delivered today

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of explosives storage magazines

4. **QA AUDITS AND ACTIVITIES:**
   - QA inspects explosive magazines with UXOQC
   - Coordinate QA activities with UXOQC
   - Observed reacquisition and intrusive operations

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Intrusive Operations

Explosives Delivery

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

ERRG QA Specialist

ERRG QA Manager

MEC QA DAILY REPORT

Date: 21 MAY 2010

Weather Conditions: Cloudy in the AM/warm **Temperature:** Low 52 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Survey of boundaries continues and completed
   - Investigation of No Finds performed
   - UXOQC Blind Seeding Operations performed
   - QA Blind Seed Operations performed

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of No Finds operations
   - UXOQC conducts blind seeding operations

4. **QA AUDITS AND ACTIVITIES:**
   - QA conducts inspections of No Finds with UXOQC
   - Coordinate QA activities with UXOQC
   - Performed QA Blind Seeding operations
   - Introduce Luis Fierro to Site Management and site procedures

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Intrusive Operations

No Find Investigations

Picture Showing the Visual Difference Between QC and QA Seeds

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	2	2		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

ERRG QA Specialist

ERRG QA Manager

MEC QA DAILY REPORT

Date: 24 MAY 2010

Weather Conditions: Warm **Temperature:** Low 55 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM MEC teams perform Mag and Dig operations
   - UXOQC follow up and 25% DGM inspections
   - QA 10% DGM inspections

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of DGM: 392, 393, 395, 398, 408, 410, 411, 415, 417, 418, 420, 425, 430, 434, 444, 448, 457, 458, 461, 467, 471, 476, 479

4. **QA AUDITS AND ACTIVITIES:**
   - QA conducts inspections of conducts inspection of DGM: 392, 393, 395, 398, 408, 410, 411, 415, 417, 418, 420, 425, 430, 434, 444, 448, 457, 458, 461, 467, 471, 476, 479
   - Coordinate QA activities with UXOQC
   - Log discovery of QA Seed 4 in grid 13 and QA Seed 7 in Grid 1
   - Log discovery QC Seed 3 and QC seed 21
   - Observe safe work practices

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**
   List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

Luis E. Fierro

ERRG QA Specialist

Francis M Ote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 25 MAY 2010

Weather Conditions: Warm **Temperature:** Low 55 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Preparatory Meeting with SUXO, UXOQC, PM and Jacqueline Dunn NAVFAC.
   - AECOM QC and ERRG QA Performed 25% check of Grid 1.
   - AECOM MEC teams perform Mag and Dig operations

Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grid #1

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 3	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	

4. **QA AUDITS AND ACTIVITIES:**
   - QA conducts inspections of Mag and Dig Grid #1
   - Coordinate QA activities with UXOQC
   - Log discovery QC seeds found; # 24 found in Grid 14; #23 found in grid 13
   - Observe safe work practices

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA seed 07	1	

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Cote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 26 MAY 2010

Weather Conditions: Warm **Temperature:** Low 55 High: 75

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM QC and ERRG QA Performed 25% check of Grid 3 and 13.
   - AECOM MEC teams perform Mag and Dig operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grids #3 and 13

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - Coordinate QA activities with UXOQC
   - Log discovery QC seeds found; # 05 and 29
   - Log discovery QA seeds found; # 03
   - Observe safe work practices

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete

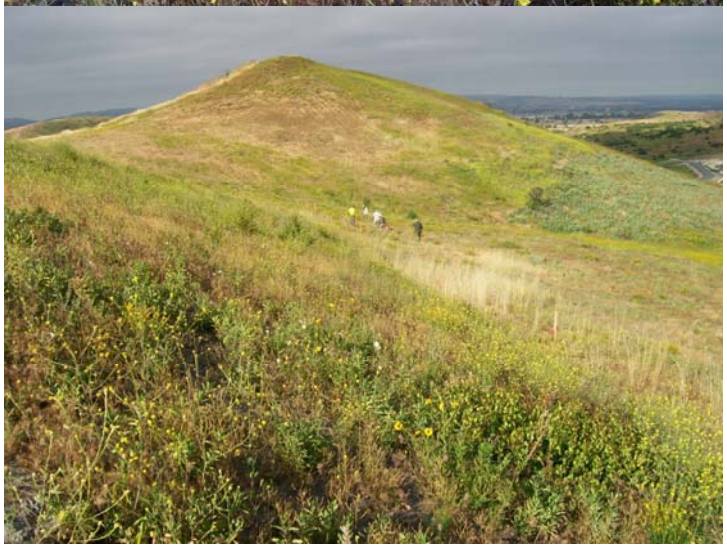
5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures



Mag and Dig

Equipment Check Area

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Cote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 27 MAY 2010

Weather Conditions: Warm **Temperature:** Low 45 High: 72

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 8,12,14,16,17,and 25
   - AECOM MEC teams perform Mag and Dig operations
   - Vegetation /Brush Cutting Operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grids 8,12,14,16,17,and 25

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - Log discovery QA seeds found; # 06
   - QA Inspection of Mag and Dig grids 8,12,14,16,17,and 25

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		
g. Trimble GPS	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Cote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 28 MAY 2010

Weather Conditions: Warm **Temperature:** Low 49 High: 71

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 2, 5, 14 and 18
   - AECOM MEC teams perform Mag and Dig operations
   - Vegetation /Brush Cutting Operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grids 2, 5, 14 and 18

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - Log discovery QC seeds found; # 02, 10, 18 and 28
   - QA Inspection of Mag and Dig grids 2, 5, 14 and 18

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

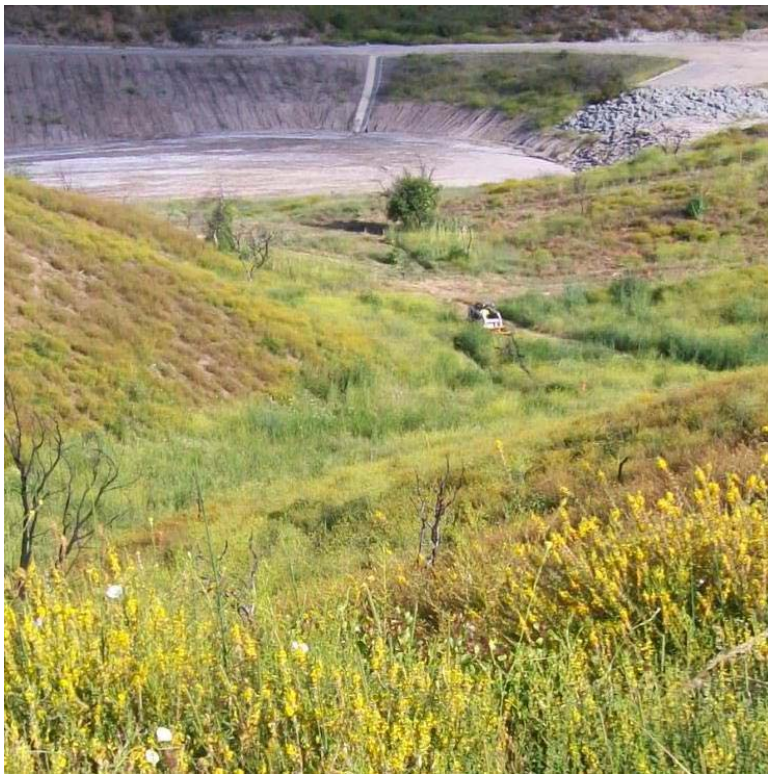
6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations



Brush Cutting

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Ch

ERRG QA Manager

MEC QA DAILY REPORT

Date: 01 June 2010

Weather Conditions: Cloudy **Temperature:** Low 54 High: 73

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 4, 20, 21, 6 and 7
   - AECOM MEC teams perform Mag and Dig operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grids 4, 20, 21, 6 and 7
   - AECOM QC initiated a Quality Deficiency Notice for Grid 7, Grid Failed. A 20MM projectile was found by QC at 3 inches.

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - Log discovery QC seeds found; # 12, 20, 17 and 13
   - QA Inspection of Mag and Dig grids 4, 20, 21, 6 and 7

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Deficiency Notice	
Grid 8	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

Brush Cutting

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Ch

ERRG QA Manager

MEC QA DAILY REPORT

Date: 02 June 2010

Weather Conditions: Cloudy **Temperature:** Low 57 High: 76

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 7, 11, 15, 19, 22 and 23
   - AECOM MEC teams perform Mag and Dig operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)
   - UXOQC conducts inspection of Mag and Dig Grids 7, 11, 15, 19, 22 and 23
   - AECOM QC re-inspects Grid 7, QC passed Grid 7

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - QA Inspection of Mag and Dig grids 7, 11, 15, 19, 22 and 23
   - QA re-inspects Grid 7, QA passed

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francisco M Ch

ERRG QA Manager

MEC QA DAILY REPORT

Date: 03 June 2010

Weather Conditions: Partly Cloudy **Temperature:** Low 59 High: 78

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM MEC teams perform Mag and Dig operations

   Demo Operations: ***N/A***
2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	

4. **QA AUDITS AND ACTIVITIES:**
   - QA observation of Mag and Dig operations
   - QA log discovery of QA seeds; QA 05 and QA 02
   - QA log discovery of QC seeds; QC 15, QC 26 and QC 14

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

ERRG QA Manager

MEC QA DAILY REPORT

Date: 04 June 2010

Weather Conditions: Partly Cloudy **Temperature:** Low 61 High: 81

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM MEC teams perform Mag and Dig operations
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 24, 28, 29 and 32

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A

3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	
04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	

4. QA AUDITS AND ACTIVITIES:

- QA observation of Mag and Dig operations
- QA log discovery of QC seeds; QC 09, QC 16, QC 08, QC 11 and QC 27

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 24	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete
Grid 28	Complete	Complete	Complete
Grid 29	Complete	Complete	Complete
Grid 32	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Cote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 07 June 2010

Weather Conditions: Partly Cloudy **Temperature:** Low 59 High: 81

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM MEC teams perform Mag and Dig operations
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 26, 27, 9, and 10

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	
04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	
07 June 10	QC Seed 22	30	
07 June 10	QC Seed 25	31	

4. QA AUDITS AND ACTIVITIES:

- QA observation of Mag and Dig operations
- QA conducted 10% inspections of grids 26, 27, 9, and 10
- QA log discovery of QC seeds; QC 22 and QC 25
- QA log discovery of QC seeds; QC 01 and QC 30

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	
07 June 10	QA Seed 01	30	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 9	Complete	Complete	Complete
Grid 10	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 24	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete
Grid 26	Complete	Complete	Complete
Grid 27	Complete	Complete	Complete
Grid 28	Complete	Complete	Complete
Grid 29	Complete	Complete	Complete
Grid 32	Complete	Complete	Complete

5. **Work Day's Highlights:**

Production Units Completed Today: See AECOM Daily

6. **WRITTEN/VERBAL INSTRUCTIONS RECEIVED:**

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francois M Cote

ERRG QA Manager

MEC QA DAILY REPORT

Date: 08June 2010

Weather Conditions: Partly Cloudy **Temperature:** Low 58 High: 78

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - AECOM MEC teams perform Mag and Dig operations
   - AECOM QC and ERRG QA Performed 25%/10% check of Grids 30, 31, and 33
   - Back- hoe operations for Demo Pit

   Demo Operations: ***N/A***

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)

QC conducted 25% inspections of grids 30, 31 and 33

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	
04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	
07 June 10	QC Seed 22	30	

07 June 10	QC Seed 25	31	

4. QA AUDITS AND ACTIVITIES:

- QA observation of Mag and Dig operations
- QA conducted 10% inspections of grids 30, 31 and 33

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	
07 June 10	QA Seed 01	30	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 9	Complete	Complete	Complete
Grid 10	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 24	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete
Grid 26	Complete	Complete	Complete
Grid 27	Complete	Complete	Complete
Grid 28	Complete	Complete	Complete
Grid 29	Complete	Complete	Complete
Grid 30	Complete	Complete	Complete
Grid 31	Complete	Complete	Complete
Grid 32	Complete	Complete	Complete
Grid 33	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

Equipment Function Check

Mag and Dig Operations

Demo Pit

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

Luis E. Fierro

ERRG QA Specialist

Francisco M. Ch

ERRG QA Manager

MEC QA DAILY REPORT

Date: 09June 2010

Weather Conditions: Partly Cloudy **Temperature:** Low 58 High: 76

1. **OPERATIONS PERFORMED TODAY: (Indicate location and description of activity)**
   - Demo Safety brief and operations brief conducted

   Demo Operations:
   - First controlled detonation. Blast pit checked and cleared no debris found.
   - Second controlled detonation. Blast pit checked and cleared no debris found
   - Inspected and certified the MDAS

2. **SUBCONTRACTOR ACTIVITIES:**
   N/A
3. **CONTRACTOR QC PREPARATORY, INITIAL and FOLLOW-UP INSPECTIONS:**
   (Assure performing contractor QC is in compliance with the Work Plan)

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 01	16	
26 May 10	QC Seed 04	25	
26 May 10	QC Seed 29	17	
27 May 10	QC Seed 07	4	
28 May 10	QC Seed 06	18	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
01 June 10	QC Seed 30	19	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	

04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	
07 June 10	QC Seed 22	30	
07 June 10	QC Seed 25	31	

4. QA AUDITS AND ACTIVITIES:

- QA observation of demolition operations
- QA re-verified that QC Seeds 1, 4, and 6 were found on 26 May; and QC Seed 7 was found on 27 May; and QC Seed 30 was found on 01 June. These seeds and discovery dates were then placed into the Seed tracking table.

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	
07 June 10	QA Seed 01	30	

QA Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 9	Complete	Complete	Complete
Grid 10	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 24	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete
Grid 26	Complete	Complete	Complete
Grid 27	Complete	Complete	Complete
Grid 28	Complete	Complete	Complete
Grid 29	Complete	Complete	Complete
Grid 30	Complete	Complete	Complete
Grid 31	Complete	Complete	Complete
Grid 32	Complete	Complete	Complete
Grid 33	Complete	Complete	Complete

5. Work Day's Highlights:

Production Units Completed Today: See AECOM Daily

6. WRITTEN/VERBAL INSTRUCTIONS RECEIVED:

List any instructions given by NAVFAC RPM/ROICC/Client Personnel:

Pictures

PZZ-302

Demo Operation

ERRG EQUIPMENT STATUS

DISCRIPTION	QTY ON HAND	QTY IN USE	QTY DOWN FOR REPAIRS	QTY ON STANDBY
a. Schonstedt	1	1		
b. Whites	1	1		
c. Site Trucks	1	1		
d. Camera	1	1		
e. fire extinguisher	1	1		
f. first aid kit	1	1		

ERRG QA Specialist

ERRG QA Manager

Project: Former MCAS El Toro TCRA 3rd Party QA
Contract No. N62473-07-G-8201
Location: Former MCAS El Toro, Lake Forest, CA
Prepared by: Richard Ramirez

QA Weekly Report for Week Ending: 05 Feb 10

QA Activities:

- Performed QA observation of site set-up to ensure the project site is compliant IAW safety standards and the Work Plan.
- Observed Site Safety and Familiarization briefings conducted for project site personnel.
- Observed AECOM subcontractors conducting survey and vegetation removal operations within the site throughout the week.
- Observed the installation of the Schonstedt Function Check Area and GEO Test Strip for use by the UXO Clearance teams and GEO Mapping teams respectively throughout the project.
- Conducted QA Inspections of Site Operations, Site Personnel Certification files, PPE usage by Site personnel and GEO Test Strip construction.

QA Documents Generated:

- QA Audits ET- 001, ET-002, ET-003, ET-004 and ET- 005 (Attached)
- QA Daily Reports (Internal) for 01 -05 February, 2010

General Notes:

- Site set-up, vegetation removal and GEO Test Strip installation performed this week.

Upcoming Activities:

- MEC operations to commence next week
- Vegetation removal to continue

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 12 Feb 10

QA Activities:

- Performed QA observations and oversight of Timberline conducting vegetation removal operations.
- Observed AECOM subcontractors conducting survey operations for the gridding of Area A.
- Conducted QA oversight observations of geophysical mapping operations within Area A.
- Conducted QA oversight observations of AECOM UXOQC conducting Initial Inspection of AECOM MEC operations in Area C.
- Conducted QA oversight observations of AECOM conducting UXO escort operations throughout the week.
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Observed delivery, setup, grounding and grounding certification of explosive storage magazines.
- Conducted QA oversight observations of AECOM UXOQC Seed placement and location verification in Areas A and C.

QA Documents Generated:

- QA Audits ET- 006, 007, 008, 009 and 010 (Attached)
- QA Daily Reports (Internal) for 08 -12 February, 2010

General Notes:

- Vegetation removal continues
- GEO operations continue
- MEC operations Continue

Upcoming Activities:

- MEC operations
- Vegetation removal
- GEO Mapping
- Explosives acquisition

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 19 Feb 10

QA Activities:

- Performed QA observations of UXOQC follow up inspections of intrusive (Areas A and C), brush removal and Geo operations.
- Conducted QA oversight observations of geophysical mapping within Area A and C.
- Conducted QA oversight observations of AECOM UXOQC conducting QC Initial Inspection of AECOM MEC operations in Area A.
- Conducted QA oversight observations of AECOM Team 1 and 2 conducting intrusive operations in Area A and C.
- Conducted QA oversight observations of AECOM conducting UXO escort operations throughout the week.
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Inspected the grounding letter certification by the licensed electrician of explosive storage magazines.
- Conducted QA oversight observations of AECOM UXOQC Seed placement and location verification in Areas B.
- Conducted QA Audit of AECOM QC daily reports

QA Documents Generated:

- QA Audits ET- 011, 012, 013, 014 and 015 (Attached)
- QA Daily Reports (Internal) for 16 -19 February, 2010

General Notes:

- Vegetation removal concludes
- GEO operations continue
- MEC operations Continue

Upcoming Activities:

- MEC operations
- GEO Mapping

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 26 Feb 10

QA Activities:

- Performed QA observations of UXOQC follow up inspections of intrusive (Areas A and C).
- Conducted QA oversight observations of geophysical mapping within Area A.
- Conducted QA audit of AECOM Team 1 and 2 conducting intrusive operations in Area A and B.
- Conducted QA oversight observations of AECOM conducting UXO escort operations throughout the week.
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Conducted QA oversight observations of AECOM UXOQC conducting QC follow-up inspections throughout the week.
- Conducted QA oversight observations of AECOM inventory of newly received explosives and stored IAW the work plan.
- Reviewed QC write up on geo/processing activities in Area A.
- Conducted QA audit of new hire certifications.

QA Documents Generated:

- QA Audits ET- 016 and 017 (Attached)
- QA Compliance Checklist (Attached)
- QA Daily Reports (Internal) for 22 -25 February, 2010

General Notes:

- GEO operations continue
- MEC operations Continue
- Explosives received

Upcoming Activities:

- MEC and GEO operations continue

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 05 Mar 10

QA Activities:

- Performed QA observations of UXOQC follow up inspections of intrusive in Area A.
- Conducted QA oversight observations of geophysical mapping within Area A.
- Conducted QA oversight observations of Mag and Flag operations within Area A.
- Observed AECOM conduct training on hotline set up and proper decontamination procedures.
- Conducted QA oversight observations of AECOM conducting UXO escort operations throughout the week.
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Conducted QA oversight observations of AECOM UXOQC conducting QC follow-up inspections throughout the week.

QA Documents Generated:

- QA Audits ET- 018, 019 and 020 (Attached)
- QA Daily Reports (Internal) for 01 -04 March, 2010

General Notes:

- GEO operations continue
- MEC operations Continue

Upcoming Activities:

- MEC and GEO operations continue

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 12 Mar 10

QA Activities:

- Performed QA observations of UXOQC follow up inspections of intrusive in Area A and B.
- Conducted QA oversight observations of geophysical operations.
- Conducted QA oversight observations of Mag and Flag operations within Area A.
- Conducted QA oversight observations of AECOM conducting UXO escort operations.
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Observed AECOM personnel performing decontamination procedures on themselves and equipment.
- Conducted QA oversight observations of AECOM UXOQC conducting QC follow-up inspections throughout the week.
- Performed a QA inspection of UXOQC Daily Reports.

QA Documents Generated:

- QA Audit ET- 021 (Attached)
- QA Daily Reports (Internal) for 10 -11 March, 2010

General Notes:

- GEO operations continue
- MEC operations Continue

Upcoming Activities:

- MEC and GEO operations continue

ERRG QA Specialist

ERRG QA Manager

QA Weekly Report for Week Ending: 21 May 10

QA Activities:

- ERRG QA personnel attended Site Kick off meeting on 18 May 2010
- ERRG QA personnel attended Preparatory meeting for Reacquisition and Mag and Dig operations on 19 May 2010
- Observe set up of Geophysical Test Strip and inspection of the buried anomalies utilizing a White's all-metals detector
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Conducted QA oversight observations of AECOM conducting "No Find" Investigations throughout the week
- Conducted QA oversight observations of AECOM inventory of newly received explosives
- ERRG QA and AECOM UXOQC perform blind seed emplacement operations, all seed locations recorded and kept confidential
- Conducted QA audit of personnel certifications.

QA Documents Generated:

- QA Audits ET- 024 and 031 (Attached)
- QA Daily Reports for 18 -21 May, 2010
- QA Seed Report

General Notes:

- No Find Investigations
- Explosives received
- QC and QA Seeds emplaced and recorded

Upcoming Activities:

- Mag and Dig Operations

ERRG QA Manager

QA Weekly Report for Week Ending: 28 May 10

QA Activities:

- ERRG QA personnel attended Preparatory meeting for Grid Close Out and Brush Cutting operations on 25 May 2010
- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Conducted QA oversight observations of AECOM conducting Mag and Dig operations throughout the week
- Conducted QA oversight observations of AECOM conducting Brush Cutting operations
- Conducted QA Tracking of recovered QA and QC blind seeds throughout the week
- ERRG QA and AECOM UXOQC perform 25%/10% completed grid inspections all week

QA Documents Generated:

- QA Audits ET- 032 and 040 (Attached)
- QA Daily Reports for 24 -28 May, 2010

General Notes:

- Mag and Dig operations
- Brush cutting operations
- QA/QC Grid Inspections

Upcoming Activities:

- Mag and Dig Operations
- Demo
- QA/QC Grid Inspections

QC Seed Recovery Tracking

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	

QA Weekly Report for Week Ending: 28 May 10

QA Seed Recovery Tracking

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	

Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete

ERRG QA Manager

QA Weekly Report for Week Ending: 04 June 10

QA Activities:

- Conducted QA oversight observations of AECOM conducting function testing of White's detectors prior to the commencement of operations daily.
- Conducted QA oversight observations of AECOM conducting Mag and Dig operations throughout the week
- Conducted QA Tracking of recovered QA and QC blind seeds throughout the week
- ERRG QA and AECOM UXOQC perform 10%/25% inspections on completed grids all week

QA Documents Generated:

- QA Audits ET- 041 and 046 (Attached)
- QA Daily Reports for 01 -04 June, 2010

General Notes:

- Mag and Dig operations
- QA/QC Grid Inspections

Upcoming Activities:

- Mag and Dig Operations
- Demo
- QA/QC Grid Inspections

QC Seed Recovery Tracking

Date	QC Seed Found	Grid	Comments
24 May 10	QC Seed 03	2	
24 May 10	QC seed 21	13	
25 May 10	QC Seed 24	14	
25 May 10	QC Seed 23	13	
25 May 10	QC Seed 19	13	
26 May 10	QC Seed 05	5	
26 May 10	QC Seed 29	17	
28 May 10	QC Seed 02	20	
28 May 10	QC Seed 10	7	
28 May 10	QC Seed 18	21	
28 May 10	QC Seed 28	6	
01 June 10	QC Seed 12	11	
01 June 10	QC Seed 20	22	
01 June 10	QC Seed 17	15	
01 June 10	QC Seed 13	23	
03 June 10	QC Seed 14	28	
03 June 10	QC Seed 15	24	
03 June 10	QC Seed 26	32	
04 June 10	QC Seed 09	29	
04 June 10	QC Seed 11	9	
04 June 10	QC Seed 16	10	
04 June 10	QC Seed 08	27	
04 June 10	QC Seed 27	26	

QA Seed Recovery Tracking

Date	QA Seed Found	Grid	Comments
24 May 10	QA Seed 04	13	
24 May 10	QA Seed 07	1	
26 May 10	QA Seed 03	25	
27 May 10	QA Seed 06	05	
03 June 10	QA Seed 02	10	
03 June 10	QA Seed 05	28	

QA Weekly Report for Week Ending: 04 June 10

Grid Status

Grid	Production Status	QC Status	QA
Grid 1	Complete	Complete	Complete
Grid 2	Complete	Complete	Complete
Grid 3	Complete	Complete	Complete
Grid 4	Complete	Complete	Complete
Grid 5	Complete	Complete	Complete
Grid 6	Complete	Complete	Complete
Grid 7	Complete	Complete	Complete
Grid 8	Complete	Complete	Complete
Grid 11	Complete	Complete	Complete
Grid 12	Complete	Complete	Complete
Grid 13	Complete	Complete	Complete
Grid 14	Complete	Complete	Complete
Grid 15	Complete	Complete	Complete
Grid 16	Complete	Complete	Complete
Grid 17	Complete	Complete	Complete
Grid 18	Complete	Complete	Complete
Grid 19	Complete	Complete	Complete
Grid 20	Complete	Complete	Complete
Grid 21	Complete	Complete	Complete
Grid 22	Complete	Complete	Complete
Grid 23	Complete	Complete	Complete
Grid 24	Complete	Complete	Complete
Grid 25	Complete	Complete	Complete
Grid 28	Complete	Complete	Complete
Grid 29	Complete	Complete	Complete
Grid 32	Complete	Complete	Complete

ERRG QA Manager

Appendix I
Blind Seed Standard Operating Procedure, Blind Seed Tracking List, and Project Work Flow

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Blind Seed Management, Grid Investigation, and Close-Out Process for Project Using Hand-held Geophysical Equipment

Preparatory Phase

- Dig teams and unexploded ordnance (UXO) Quality Control Specialist (UXOQCS) shall be provided with a site map with grid system surveyed in by licensed land surveyor.
- A test bed is setup for daily checking/calibrating the functionality of the hand-held geophysical equipment.
- A test bed it set up for daily checking/calibrating the functionality of the Digital Geophysical Mapping (DGM) equipment.
- Dig teams and UXOQCS shall be provided with a global positioning system (GPS) meeting the project accuracy requirement with grid system uploaded.
- Dig teams shall be provided with proper forms including dig request list and dig result sheet (blank at this time) for documentation of work completed and findings.
- Dig teams shall be provided with proper training for blind seed identification, investigation methodology and documentation of work completed and findings.

Initial Phase

- UXOQCS shall place quality control (QC) blind seeds, using GPS, and provide proper documentation using the Blind Seed Tracking Log (attached). A blind seed shall be placed in each 200-foot by 200-foot grid or every 1-acre area.
- Dig teams shall work within designated grids with close tracking by SUXOS and UXOQCS.
- UXOQCS shall check each dig team's documentation, including the dig result sheets, at the close of each day to determine whether QC blind seeds should have been encountered in the work area, and whether they were collected. If QC blind seeds should have been collected but were not, UXOQCS shall conduct a grid QC at the beginning of the next business day to verify that the QC blind seed is still present, and then issue a Quality Deficiency Notice (QDN), conduct a root cause analysis and implement corrective action including request Senior UXO Supervisor (SUXOS) to send the team to re-work the grid. The Navy RPM will be notified immediately of any failure of a field team to find a blind seed item.
- UXOQCS shall conduct 25% QC check of each grid area or 25% of the anomalies in the dig request list within 1 day of investigation completion. If a grid does not pass the 25% QC check, UXOQCS shall issue a QDN, conduct a root cause analysis and implement corrective action including request SUXOS to send the team to re-work the grid. UXOQCS shall subsequently conduct an additional 25% QC check on the grid in question. The dig team in question will not be allowed to continue work in subsequent grids until pass the 25% QC check of the previous grid they worked on.
- After UXOQCS identifies proper QC blind seed recovery and conducts the 25% QC check, UXOQCS shall complete the QC/QA Inspection Report (attached) for each grid, with UXOQCS signature and PM or Project Engineer signature. The UXOQCS

will coordinate with the Navy's QA contractor when they have completed their QC of a grid so QA can evaluate the grid.

Follow-on Phase

- For grids that pass the QC, the UXOQCS will ensure that all documentation is recorded and provided to the Project Manager. The UXOQCS will coordinate with the Navy's QA contractor when they have completed their QC of a grid so QA can evaluate the grid and follow up to ensure no additional issues were identified.
- Grids shall not be closed out until all QC and QA procedures are completed and the grids are accepted by the QA and acceptance is documented.

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide the procedures applicable to the placement and tracking of Quality Control blind seeds used in the Military Munitions Response Program (MMRP)

2.0 SCOPE

This SOP applies to all site personnel, including contractor and subcontractor personnel, involved in the placement of blind seeds. This SOP is not intended to contain all of the requirements needed to ensure complete compliance, and should be used in conjunction with site specific project plans. Consult the documents listed in Section 3.0 of this SOP for additional compliance issues.

3.0 REGULATORY REFERENCES

Applicable sections and paragraphs in the documents listed below will be used as references for the conduct of surface investigation:

Latest version of the USACE Engineering Manual 1110-1-4009, Ordnance and Explosives Response

4.0 RESPONSIBILITIES

4.1 PROJECT MANAGER

The AECOM Project Manager (PM) shall be responsible for ensuring the availability of the personnel and equipment resources needed to implement this SOP, and shall also ensure that this SOP is incorporated in plans, procedures and training for sites where this SOP is to be implemented.

4.2 SENIOR UXO SUPERVISOR

The Senior UXO Supervisor (SUXOS) will ensure that this SOP is implemented for operations that involve personnel exposure to the hazards associated with the investigation for MEC. The SUXOS will also ensure that relevant sections of this SOP are discussed in the daily safety briefings and that information related to its daily implementation is properly recorded in appropriate site documentation.

4.3 UXO QUALITY CONTROL SPECIALIST

The UXOQCS has the responsibility and authority to enforce the site MEC-specific QC plans and procedures. This individual reports to directly to the AECOM Project Quality Control

Manager (PQCM) and coordinates site activities with the PM and SUXOS on site. The UXOQCS responsibilities include:

- Maintain a QC log to document details for field activities during MEC QC monitoring activities;
- Placement and management of Blind Seed items to evaluate the effectiveness of analog and DGM mapping procedures;
- Conducting periodic QC surveillances of site MEC activities and recording the findings in the Daily Activities Report;
- Reporting noncompliance with MEC QC criteria to AECOM's PQCM, PM and SUXOS and documenting these non-conformances on the AECOM Nonconformance Report;
- Initiate a Rework Items List on MEC nonconformance areas that must be re-accomplished to meet quality specifications;
- Conduct a root cause analysis when a QC failure occurs;
- Coordinating with the responsible parties to initiate the proper corrective actions to be taken in the event of a QC deviation and documenting these actions on the Corrective Action Request; and
- Ensuring that Lessons Learned are documented and forwarded to the AECOM PQCM for analysis.

5.0 BLIND SEED PLACEMENT PROCEDURES

5.1 GENERAL SITE PRACTICES

All personnel, including subcontractor personnel, involved in any area where MEC could be encountered during placement of blind seeds will be knowledgeable of the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards. The site safety practices detailed in the project safety plans will be observed.

All MEC-related operational activities at the site will be under the direction of and performed by qualified UXO personnel. Non-essential personnel will be prohibited from entering within the minimum separation distance (MSD) where MEC-related activities are being conducted, and must remain outside of the exclusion zone (EZ) defined by the MSD unless escorted by a UXO Technician and authorization to access or transit the EZ has been approved by the SUXOS.

5.2 SITE PREPARATION

5.2.1 Grid/GPS Site Map

The site map provides project management a visual tool by reflecting the location of the site boundaries and grid stakes. It will also be used to track several layers of activity such as the progress, coverage, and completion of geophysical mapping and mag/flag/reacquisition.

An RTK GPS 'rover' unit with a base station for correcting data will be used to capture the grid stakes and site boundary. The recorded data will be incorporated into the GIS and a plotter used to generate a site map of sufficient size. Each individual grid will be assigned its own unique designation. The map can also depict areas that are inaccessible due to man-made or natural barriers such as steep terrain, streams or wetlands where intrusive activity is prohibited and analog or DGM mapping will not be conducted.

The map will reflect completed work and up-dated daily by UXOQCS in consultation with UXO team leaders and Geophysicist team to avoid inadvertent duplication of work and confirm areas are not missed.

5.2.2 Geophysical Prove Out (GPO)

A test area is necessary to determine and document site geophysical conditions and to test geophysical effectiveness and accuracy. It can be used for daily tests of analog detection equipment (Schonstedt, White, Vallon) as well as digital geophysical equipment (e.g. EM-61Mk2) that have undergone a change of cables, GPS units, data recorders etc. The design and size of the GPO test bed is dependent on the size of the site and the expected amount of geophysical mapping.

5.2.3 Proper Integration of GPS Equipment Systems

The GPS equipment used to record coordinates for blind seeds should be the same as used to record GPS data for the site map. Furthermore, the RTK 'rover' GPS equipment should be compatible with the equipment used for geophysical mapping (e.g., Trimble RTK GPS and EM-61 Mk2 coils). The UXOQCS should have free use of a RTK 'rover' GPS system to ensure proper seed/anomaly recovery by UXO teams. This will be in addition to the RTK 'rover' GPS system used by UXO teams to locate reacquisition points.

5.2.4 Seed Preparation

Quality Control seeds will be individually identified for tracking purposes. The procedure used will be determined by the UXOQCS. The system for marking the seeds will be unique and reserved for use by the UXOQCS.

Each seed should have its GPS coordinates, depth, and orientations of the long axis recorded on a QC Blind Seed Tracking Log(attached) along with a description of the seed itself (pipe nipple, inert 60mm mortar etc…) the following data will be entered into the Tracking Log (see attached log):

- Seed Number/Designation
- Grid Number
- Seed Placement Date
- Seed depth and orientation (horizontal, vertical, or inclination in degrees)
- Seed Placed by
- Seed GPS Coordinates
- Designate if seed location is a DGM or Mag/Flag Area
- DGM Mapping date
- Date grid worked by UXO team for reacquisition
- Date seed is recovered or the grid work is completed.
- Date Cleared by UXOQCS
- Date Seed Recovered/Remarks

After the site boundaries and grid stake coordinates are recorded, the UXOQCS and one other person not involved with production (the Safety officer) will place the seeds, record the coordinates with a RTK GPS 'rover' unit, and fill out the pertinent information on the QC Blind Seed Tracking Log.

Field seeds will be placed uniformly between mag/flag areas and DGM mapped areas if both DGM and analog mapping will be conducted. This would make it necessary to delineate the mag/flag areas from DGM-mapped areas and which will be considered before mobilization of production personnel.

The GPS data for the field seeds is forwarded electronically to GIS and overlaid on the GPS site map to create a second map…. a Quality Control site map. This information will be available to the UXOQCS, PQCM , QC geophysicist, PM, third party QA if assigned, and the client with no dissemination to production-oriented personnel (UXO/DGM field team members).

5.3 PROCEDURES

5.3.1 Analog Mapping Seed Placement

The purpose of blind seed placement is to verify analog geophysical mapping coverage. The goal is to use pieces of metal that will produce relatively large amplitude anomalies over small areas. If inert munitions are used as seeds they should be similar to the actual munitions of interest. If this is not possible, surrogate items may be substituted as long as they have similar composition, size & shape of the most probable munitions

The protocol established by the UXOQCS for placing these seed items can be on a per team basis. Failure of the Mag and Dig team to properly recover all seed items will require causual analysis of the failure and possibly require the re-mapping of all parcels of land affected after the point of failure.

5.3.2 Digital Geophysical Mapping Seed Placement

The number of QC seeds depends on the size of the site and grid dimensions established for the project. Seeding rates will vary, but optimum rates would evaluate each DGM dataset. A map of the project site grids should accompany a QC Blind Seed Tracking Log. QC seeds should be placed at various depths and orientations to approximate possible field conditions. Also, UXO team dig result sheets and team leader logbooks must be accurate and list all recovered seeds as well as significant finds.

As DGM mapping progresses, the data is processed and sent to GIS to create updated GPS site maps that will track proper area coverage and show anomaly picks. Dig sheets with reacquisition points shall be supplied to the UXO teams within two days after a grid has been fully DGM mapped. The reacquisition points should be sent electronically to the GPS units for the UXO teams and to the UXOQCS to negate mistakes made by manual data entry. Some grids may be mag/flag and DGM mapped areas due to terrain, so it will be important for the geophysical team and UXOQCS to coordinate their efforts and let each other know when they have completed their respective grid areas.

UXOQCS will enter the reacquisition points as well as the seed coordinates into the Rover GPS. After a grid is completed by mag/flag and/or DGM reacquisition, the UXOQCS will audit reacquisition point quota (25% normal QC) and ensure that all field seeds in that grid have been recovered before clear the grid (see attached QC/QA Grid Inspection Report).

UXOWCS shall identify any failure to properly detect, select and remove the anomalies including blind seeds and require the geophysical team to conduct a process-specific root cause analysis and implement corrective actions. For DGM operations, corrective actions may include re-processing the data or re-collecting the data.

AECOM

QC BLIND SEED TRACKING LOG

Seed Number	Grid Number	Date Seed Placed	GPS Coordinates		DGM or Mag/ Flag	Depth/ Orientation	Date Grid Mapped	Date Grid Worked by UXO Teams(s)	Date Blind Seed Recovered by UXO Team(s)	Date QC Performed
			X-Coord	Y-Coord						

Appendix J
MEC Hazard Assessment

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CONTENTS

ACRONYMS AND ABBREVIATIONS iii

MUNITIONS AND EXPLOSIVES OF CONCERN I

HAZARD ASSESSMENT I

1. INTRODUCTION 1

2. METHODOLOGY 1

3. MUNITIONS RESPONSE SITE MEC HA SUMMARIES 2

3.1 IRP Site 1 Adjacent Property Areas A and B 2
3.1.1 Investigation Results Summary 2
3.1.2 MEC HA Input 2
3.1.3 MEC HA Results 3
3.2 IRP Site 1 Adjacent Property Area C 5
3.2.1 Investigation Results Summary 5
3.2.2 MEC HA Input 5
3.2.3 MEC HA Results 6

4. UNCERTAINTY 8

5. CONCLUSIONS 8

5.1 Areas A and B 8
5.2 Area C 8

6. REFERENCES 8

TABLES

3-1 MEC HA Scoring Summary forAdjcacent Property Areas A and B, Future Use Activities, Pre-Removal-Action 4

3-2 MEC HA Scoring Summary for Adjacent Property Areas A and B, Future Use Activities, Post-Removal-Action 4

3-3 MEC HA Scoring Summary forAdjcacent Property Area C, Future Use Activities, Pre-Removal-Action 7

3-4 MEC HA Scoring Summary forAdjcacent Property Area C, Future Use Activities, Post-Removal-Action 7

ATTACHMENTS

1 MEC HA Calculation Spreadsheet – IRP Site 1 Adjacent Property, Areas A and B

2 MEC HA Calculation Spreadsheet – IRP Site 1 Adjacent Property, Area C

ACRONYMS/ABBREVIATIONS

bgs	below ground surface
DDESB	Department of Defense Explosives Safety Board
DMM	Discarded Military Munitions
EOD	Explosive Ordnance Disposal
ESQD	Explosives Safety Quantity-Distance
IRP	Installation Restoration Program
MCAS	Marine Corps Air Station
MD	munitions debris
MDAS	material documented as safe
MDEH	material documented as an explosive hazard
MEC	munitions and explosives of concern
MEC HA	MEC hazard assessment
mm	millimeter
MPPEH	material potentially presenting an explosive hazard
MRS	munitions response site
TCRA	Time-Critical Removal Action
USEPA	United States Environmental Protection Agency
UXO	unexploded ordnance

1. INTRODUCTION

During February-June 2010, a Time-Critical Removal Action (TCRA) for munitions was conducted at Marine Corps Air Station (MCAS) El Toro Installation Restoration Program (IRP) Site 1, Adjacent Property. The Adjacent Property is immediately to the west of and adjacent to IRP Site 1, the Explosive Ordnance Disposal (EOD) Training Range at former MCAS El Toro. Munitions and explosives of concern (MEC) and material potentially presenting an explosive hazard (MPPEH) items were recovered on the Adjacent Property during munitions characterization activities in 2002 and 2008. These items were likely kick-outs from EOD training activities conducted within IRP Site 1. For conducting the TCRA, the Adjacent Property was subdivided into three areas, based on results of the 2008 munitions characterization and on the relative probability of encountering MEC as follows:

- Area A, an area with a relatively high probability of encountering MPPEH based primarily on the close proximity to IRP Site 1.
- Area B, an area with a relatively lower probability of encountering MPPEH, includes the area east of the Agua Chinon Retarding Basin to the western boundary of Area A, and areas northeast of the Agua Chinon Retarding Basin.
- Area C, an area with relatively lower probability of encountering MPPEH, includes the area west of Agua Chinon Wash.

The MEC hazard assessment (MEC HA) methodology for assessing potential explosive hazards to human receptors at munitions response sites (MRSs) (United States Environmental Protection Agency [USEPA] 2008) has been used to evaluate MEC hazards at IRP Site 1, Adjacent Property. The MEC HA was developed to assist project teams in evaluating the potential explosive hazard associated with project sites, given current or reasonably anticipated future conditions, and under various cleanup, land use activities, and land use control alternatives (USEPA 2008).

2. METHODOLOGY

For this project, the MEC HA was conducted to compare pre-removal-action explosive hazards under future land use conditions with post-removal action explosive hazards under future land use conditions. Because the future land use of Areas A and B are consistent (open space), Areas A and B have been evaluated together as one MRS. Area C has a different future land use (medium-density residential housing) and thus has been evaluated as a separate MRS.

The MEC HA is structured around three components of potential explosive hazard incidents (USEPA 2008):

- Severity, which is the potential consequences of the effect on a human receptor should a MEC item detonate.
- Accessibility, which is the likelihood that a human receptor will be able to come in contact with a MEC item.
- Sensitivity, which is the likelihood that a human receptor will be able to interact with a MEC item such that it will detonate.

Each of these components is assessed in the MEC HA by input factors, which are determined from the project Work Plan (AECOM Technical Services, Inc. [ATS] 2010) and the TCRA results. The input factors and results of the MEC HA for each MRS are summarized below.

3. MUNITIONS RESPONSE SITE MEC HA SUMMARIES

3.1 IRP SITE 1 ADJACENT PROPERTY AREAS A AND B

Areas A and B encompass a total of 38 acres of property adjacent to the western boundary of IRP Site 1. Area A consists of 32 acres on the hillside immediately adjacent to IRP Site 1. Area B consists of 6.4 acres to the east and northeast of the Agua Chinon Retarding Basin, to the west of Area A. The site boundaries encompass the areas where material documented as an explosive hazard (MDEH) and material documented as safe (MDAS) were encountered during 2008 munitions characterization activities. Current land use for the site is open space, with access via private, gated gravel roads. Future land use plans for the site indicate open space (ATS 2010).

3.1.1 Investigation Results Summary

A total of 25 MEC items were recovered from Areas A and B during the 2008 munitions characterization activities. An additional 159 MDEH items were collected during the 2010 TCRA activities, with additional MDAS items. The predominant MEC/MDEH item was the 20 millimeter (mm) projectile, although several fuzes were collected and determined to be live, and one M38/M39 submunition was collected from the ground surface within Area A, near the IRP Site 1 fenceline. All MEC and MDEH items were collected from depths of 0 inches to 9 inches below ground surface (bgs).

3.1.2 MEC HA Input

Input factors for four of the Excel Spreadsheet pages in the MEC HA (EPA 2008) for IRP Site 1 Adjacent Property Areas A and B are summarized below.

Summary Info Page. The area was set to 38 acres. The past munitions-related use was Safety Buffer Areas, and the current land use was Open Space. Removal action activities were conducted during the 2008 munitions characterization and during the 2010 TCRA activities.

Munitions, Bulk Explosives Info Page. Three types of munitions were identified during site activities:

- For the first munition type, the munition type was set to Artillery; munition size and units were set to 20 mm, with no mark or model. Energetic Material Type was set to High Explosive, Fuzed, Impact Fuze Type, and Armed. Minimum depth was set to 0 feet, with location of munitions as Surface and Subsurface.
- For the second munition type, the munition type was set to Submunitions; No munition size was selected; Mark/Model was set to M38/M40. Energetic Material Type was set to High Explosive, Fuzed, Impact Fuze Type, and Armed. Minimum depth was set to 0 feet, with location of munitions as Surface and Subsurface.
- For the third munition type, the munition type was set to Fuzes; No munition size was selected; and no Mark/Model was selected. Energetic Material Type was set to High Explosive, Unfuzed, Fuzing Type Unknown, and Armed. Minimum depth was set to 0 feet, with location of munitions as Surface and Subsurface.

No bulk explosives were identified during sampling activities.

Current and Future Activities Page. Two activities are currently occurring at the site:

- The first activity is Open Space, with 5 people participating per year for 20 hours per year per person, for a total of 100 potential contact hours per year.

- The second activity is Maintenance of Stormwater Detemtion Basin, with 5 people participating per year for 20 hours per year per person, for a total of 100 potential contact hours per year.

Remedial-Removal Action Page

Two remedial/removal actions were evaluated:

- The first potential response action was No Action. The expected resulting minimum MEC depth was set to 0 feet, and expected resulting site accessibility was set to Limited Accessibibility. Land use activities are not expected to change if the response action is implemented, and the expected scope of cleanup is, "No MEC Cleanup".
- The second potential response action was Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS. The expected resulting minimum MEC depth was set to 1 foot, and expected resulting site accessibility was set to Limited Accessibility. Land use activities are not expected to change if the response action is implemented, and the expected scope of cleanup is, "Cleanup of MECs Located Both on the Surface and Subsurface".

Input Factors Page. Generally, results of previous pages are used as the basis for entries on this page, with minimal additional input. Under Location of Additional Human Receptors Input Factor Categories, the Explosives Safety Quantity-Distance (ESQD) from the Explosive Siting Plan for this MRS was set to 200 feet, and there are currently no features or facilities where people may congregate within this MRS, or within the ESQD arc. Under Current Use Activities, because the site is accessible only via private, gated, gravel roads, the accessibility was set to Very Limited Accessibility. When selecting the category that best describes the most hazardous amount of MEC, Safety Buffer Areas was selected. Under Migration Potential Input Factor Categories, historical evidence does indicate that natural physical forces in the area have exposed subsurface MEC items or moved surface or subsurface MEC items. The primary cause of migration was summarized as erosion on the hillside adjacent to IRP Site 1 that may reveal additional MEC. MEC on the site has been determined to be Discarded Military Munitions (DMM) and due to the submunitions and fuzes collected from the site, the MEC has been determined to be Special Case. Because each munition collected from the site has weighed less than 90 pounds, the MEC Size Input Factor has been set to Small.

A modification was made from the automatically generated values on the Input Factors Page. Because the Amount of MEC category is set to Safety Buffer Areas, the MEC HA program makes the conservative assumption that the MEC items in the MRS are unexploded ordnance (UXO). However, it has been determined that the MEC items in the MRS are DMM. Thus, the MEC classification has been determined to be Fuzed DMM Special Case, with a resulting score of 55 for Baseline Conditions and Subsurface Cleanup, rather than the automatically selected 180.

3.1.3 MEC HA Results

Table 3-1 summarizes the pre-removal-action scoring for IRP Site 1, Adjacent Property, Areas A and B, under future use conditions. Table 3-2 summarizes the post-removal-action scoring under future use conditions.

Table 3-1. MEC HA Scoring Summary for Adjcacent Property Areas A and B, Future Use Activities, Pre-Removal-Action

Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Outside of the ESQD Arc	0
III. Site Accessibility	Limited Accessibility	5
IV. Potential Contact Hours	Less than 10,000 receptor-hours per year	15
V. Amount of MEC	Safety Buffer Areas	30
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC	240
VII. Migration Potential	Possible	30
VIII. MEC Classification	DMM Special Case	55
IX. MEC Size	Small	40
	Total Score	515
	Hazard Level Category	4

Notes:
DMM = Discarded Military Munition
ESQD = Explosives Safety Quantity-Distance
HA = hazard assessment
MEC = munitions and explosives of concern

Table 3-2. MEC HA Scoring Summary for Adjacent Property Areas A and B, Future Use Activities, Post-Removal-Action

Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Outside of the ESQD Arc	0
III. Site Accessibility	Limited Accessibility	15
IV. Potential Contact Hours	Less than 10,000 receptor-hours per year	5
V. Amount of MEC	Safety Buffer Areas	5
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC	25
VII. Migration Potential	Possible	10
VIII. MEC Classification	DMM Special Case	55
IX. MEC Size	Small	40
	Total Score	255
	Hazard Level Category	4

Notes:
DMM = Discarded Military Munition
ESQD = Explosives Safety Quantity-Distance
HA = hazard assessment
MEC = munitions and explosives of concern

3.2 IRP SITE 1 ADJACENT PROPERTY AREA C

Area C consists of approximately 5.4 acres to the west of Agua Chinon Retarding Basin. The site was included in the 2010 TCRA because one piece of munitions debris (MD) was identified during the 2008 muntions characterization activites. The site boundaries encompass the area containing the one MD item collected in 2008. Land use for the site is currently open space, with access via private, gated, gravel roads, but future plans call for the site to be developed into medium-density residential homes.

3.2.1 Investigation Results Summary

A total of 2 MDEH items were recoverd from Area C during the 2010 TCRA, including one 20 mm projectile collected at a depth of approximately 5 inches and one M103 or M163 bomb fuze collected at a depth of 12 inches. A total of four MDAS items (including the one MD item collected in 2008) were recovered from Area C.

3.2.2 MEC HA Input

Input factors for four of the Excel Spreadsheet pages in the MEC HA (EPA 2008) for IRP Site 1 Adjacent Property Area C are summarized below.

Summary Info Page. The area was set to 5.4 acres. The past munitions-related use was Safety Buffer Areas, and the current land use was Open Space. Removal action activities were conducted during the 2008 munitions characterization and during the 2010 TCRA activities.

Munitions, Bulk Explosives Info Page. Two types of munitions were identified during site activities:

- For the first munition type, the munition type was set to Artillery; munition size and units were set to 20 mm, with no mark or model. Energetic Material Type was set to High Explosive, Fuzed, Impact Fuze Type, and Armed. Minimum depth was set to 0 feet, with location of munitions as Surface and Subsurface.

- For the second munition type, the munition type was set to Fuzes; No munition size was selected; and no Mark/Model was set. Energetic Material Type was set to High Explosive, Unfuzed, Fuzing Type Unknown, and Armed. Minimum depth was set to 0 feet, with location of munitions as Surface and Subsurface.

No bulk explosives were identified during sampling activities.

Current and Future Activities Page. For Activities Currently Ocurring at the Site, Open Space was selected, with 5 people participating per year for 20 hours per year per person, for a total of 100 potential contact hours per year. For Activities Planned for the Future at the Site, two activities were selected:

- Medium-Density Residential – Construction was selected, with 100 people per year, 2,000 hours each (based on 40 hours per week, 50 weeks per year), for a total potential contact time of 200,000 hours per year. The maximum intrusive depth for this activity was determined to be 14 feet (an 8-foot-deep pool with two feet of foundation and a buffer of 4 feet, per Department of Defense Explosives Safety Board [DDESB] guidance document DDESB-KO [DDESB 1998]).
- Medium-Density Residential – Occupancy was selected, with 100 people per year, 5,600 hours each (based on 16 hours per day, 350 days per year), for a total potential contact time of 560,000 hours per year. The maximum intrusive depth for this activity was determined to be 7 feet (a maximum 3-foot excavation and a buffer of 4 feet, per DDESB-KO [DDESB 2008]).

Remedial-Removal Action Page

Two remedial/removal actions were evaluated:

- The first potential response action was No Action. The expected resulting minimum MEC depth was set to 0 feet, and expected resulting site accessibility was set to Full Accessibibility. Land use activities are not expected to change if the response action is implemented, and the expected scope of cleanup is No MEC Cleanup.

- The second potential response action was Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS. The expected resulting minimum MEC depth was set to 1 foot, and expected resulting site accessibility was set to Full Accessibility. Land use activities are not expected to change if the response action is implemented, and the expected scope of cleanup is Cleanup of MECs Located Both on the Surface and Subsurface.

Because there will be a change between current and future land uses, land-use activities were selected to be assessed against future land use.

Input Factors Page. Generally, results of previous pages are used as the basis for entries on this page, with minimal additional input. Under Location of Additional Human Receptors Input Factor Categories, the ESQD from the Explosive Siting Plan for this MRS was set to 200 feet, and there are currently no features or facilities where people may congregate within this MRS, or within the ESQD arc. There are future plans to locate or construct features or facilities where people may congregate within the MRS (medium-density residential housing, to the west of Agua Chinon Wash). Under Current Use Activities, because the site is accessible only via private, gated, gravel roads, the accessibility was set to Very Limited Accessibility. Under Future Use Activities, because residential housing is to be constructed, the accessibility was set to Full Accessibility. When selecting the category that best describes the most hazardous amount of MEC, Safety Buffer Areas was selected. Under Migration Potential Input Factor Categories, historical evidence does indicate that natural physical forces in the area have exposed subsurface MEC items or moved surface or subsurface MEC items. The primary cause of migration was summarized as erosion on the hillside adjacent to IRP Site 1 that may reveal additional MEC.Slope Erosion. MEC on the site has been determined to be DMM and due to the fuze collected from the site, the MEC has been determined to be Special Case. Because each munition collected from the site has weighed less than 90 pounds, the MEC Size Input Factor has been set to Small.

A modification was made from the automatically generated values on the Input Factors Page. Because the Amount of MEC category is set to Safety Buffer Areas, the MEC HA program makes the conservative assumption that the MEC items in the MRS are UXO. However, it has been determined that the MEC items in the MRS are DMM. Thus, the MEC classification has been determined to be Fuzed DMM Special Case, with a resulting score of 55 for Baseline Conditions and Subsurface Cleanup, rather than the automatically selected 180.

3.2.3 MEC HA Results

Table 3-3 summarizes the pre-removal-action scoring for IRP Site 1, Adjacent Property, Area C, under future use conditions. Table 3-4 summarizes the post-removal-action scoring under future use conditions.

Table 3-3. MEC HA Scoring Summary forAdjcacent Property Area C, Future Use Activities, Pre-Removal-Action

Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Inside the MRS or inside the ESQD Arc	30
III. Site Accessibility	Full Accessibility	80
IV. Potential Contact Hours	100,000 to 999,999 receptor hours per year	70
V. Amount of MEC	Safety Buffer Areas	30
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC	240
VII. Migration Potential	Possible	30
VIII. MEC Classification	DMM Special Case	55
IX. MEC Size	Small	40
	Total Score	675
	Hazard Level Category	3

Notes:
DMM = Discarded Military Munition
ESQD = Explosives Safety Quantity-Distance
HA = hazard assessment
MEC = munitions and explosives of concern

Table 3-4. MEC HA Scoring Summary forAdjcacent Property Area C, Future Use Activities, Post-Removal-Action

Input Factor	Input Factor Category	Score
I. Energetic Material Type	High Explosive and Low Explosive Filler in Fragmenting Rounds	100
II. Location of Additional Human Receptors	Inside the MRS or inside the ESQD Arc	30
III. Site Accessibility	Full Accessibility	80
IV. Potential Contact Hours	100,000 to 999,999 receptor hours per year	20
V. Amount of MEC	Safety Buffer Areas	5
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth	Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC	95
VII. Migration Potential	Possible	10
VIII. MEC Classification	DMM Special Case	55
IX. MEC Size	Small	40
	Total Score	435
	Hazard Level Category	4

Notes:
DMM = Discarded Military Munition
ESQD = Explosives Safety Quantity-Distance
HA = hazard assessment
MEC = munitions and explosives of concern

4. UNCERTAINTY

Some level of uncertainty exists with any environmental investigation. Assumptions that impact conclusions are discussed below:

- For current use activities, Very Limited Accessibility was selected for both MRS sites. For future use activities in Areas A and B, Limited Accessibility was selected because, although medium-density residential housing is to be constructed nearby, the site is fairly steep and thus the likelihood of tresspassers walking on the site is low. This assumption potentially underestimates hazard for Areas A and B. For Area C, Full Accessibility was selected because medium-density residential housing is to be constructed.

5. CONCLUSIONS

5.1 AREAS A AND B

For Areas A and B, the hazard score of 515 (Hazard Level 4) under the pre-removal-action scenario was reduced to 255 (Hazard Level 4) after the 2008 and 2010 removal action activities. The post-TCRA MEC hazard is classified as having the lowest of the four hazard categories.

5.2 AREA C

For Area C, the hazard score of 675 (Hazard Level 3) under the pre-removal-action scenario was reduced to 435 (Hazard Level 4) after the 2008 and 2010 removal action activities. The post-TCRA MEC hazard is classified as having the lowest of the four hazard categories.

6. REFERENCES

AECOM Technical Services, Inc. (ATS). 2010. *Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former Marine Corps Air Station El Toro, California.* February.

Department of Defense Explosives Safety Board (DDESB). 1998. *Memorandum for US Army Technical Center for Explosives Safety: Guidance for Clearance Plans.* February.

United States Environmental Protection Agency (USEPA). 2008. *Munitions and Explosives of Concern Hazard Assessment Methodology.* EPA 505B08001. Interim. October.

Attachment 1
MEC HA Calculation Spreadsheet – IRP Site 1 Adjacent Property Areas A and B

MEC HA Summary Information

Comments

Site ID: IRP Site 1 Adjacent Property - Areas A and B

Date: 7/12/2010

Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.

A. Enter a unique identifier for the site:

IRP Site 1 Adjacent Property - Areas A and B

Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.

Ref. No.	Title (include version, publication date)
1	Characterization, IRP Site 1, EOD Training Range,
2	Installation Restoration Program Site 1, Adjacent
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

B. Briefly describe the site:

1. Area (include units): 38 acres
2. Past munitions-related use:

Safety Buffer Areas

3. Current land-use activities (list all that occur):

Open Space

4. Are changes to the future land-use planned? No
5. What is the basis for the site boundaries?

Munitions characterization activities in 2008 conducted on 43 acres of property adjacent to IRP Site 1 revealed a total of 25 MDEH items, primarily on the hillside immediately adjacent to IRP Site 1, a former EOD Training facility. A subsequent Time-Critical Removal Action (TCRA) has been conducted (February-June 2010) and resulted in the collection of an additional 160 MDEH items. The current site boundaries are based on MPPEH locations during those two investigations.

6. How certain are the site boundaries?

The 2010 TCRA was comprehensive and based on the distribution of MPPEH items collected, the site boundary appears to encompass all likely MPPEH areas.

Reference(s) for Part B:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

C. Historical Clearances

1. Have there been any historical clearances at the site? Yes, subsurface clearance
2. If a clearance occurred:
   a. What year was the clearance performed? 2010
   b. Provide a description of the clearance activity (e.g., extent, depth, amount of munitions-related items removed, types and sizes of removed items, and whether metal detectors were used):

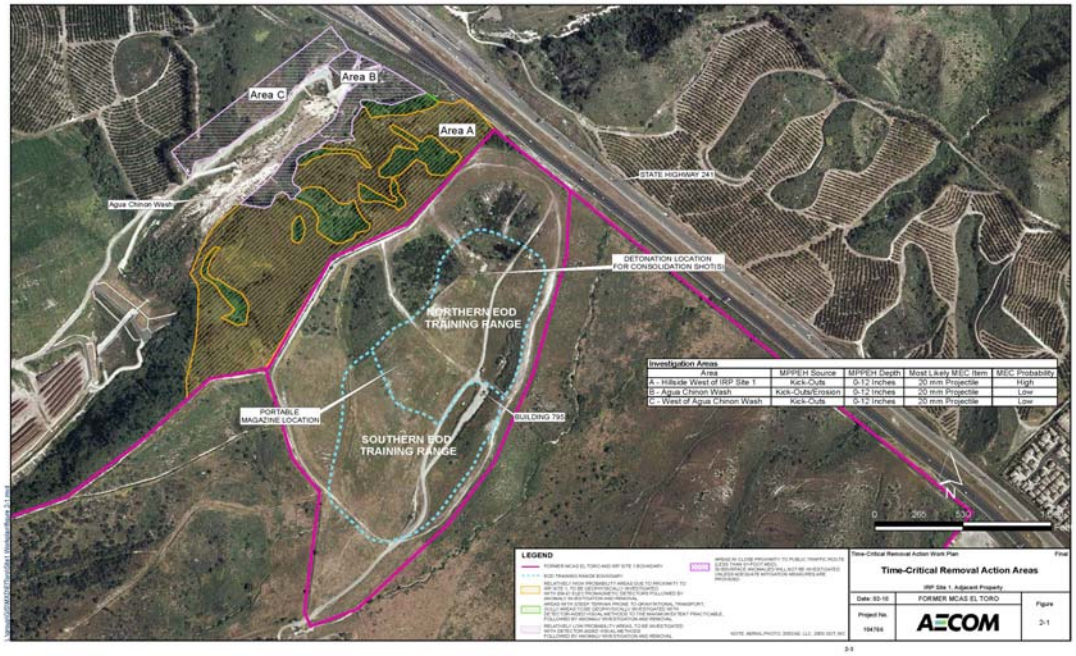
Clearance was conducted to depth. On relatively flat terrain, DGM survey was conducted followed by anomaly investigation and removal. In steeper areas, mag-and-flag investigation was conducted followed by anomaly investigation and removal. Primarily 20 mm projectiles were collected, along with various fuzes.

Reference(s) for Part C:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)



Site ID: **IRP Site 1 Adjacent Property - Areas A and B**
Date: **7/12/2010**

Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Artillery	20	mm		High Explosive	Yes	Impact	Armed	0	Surface and Subsurface	
2	Submunitions			M38/M40	High Explosive	Yes	Impact	Armed	0	Surface and Subsurface	
3	Fuzes				High Explosive	No	UNK	Armed	0	Surface and Subsurface	
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Reference(s) for table above:
DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro. February.

Select Ref(s)

Bulk Explosive Information

Item No.	Explosive Type	Comments
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Reference(s) for table above:

Select Ref(s)

Site ID: **IRP Site 1 Adjacent Property - Areas A and B**
Date: **7/12/2010**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Open Space	5	20	**100**	0	
2	Maintenance of Stormwater Detention Basin	5	20	**100**	0	
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Total Potential Contact Time (receptor hrs/yr): **200**
Maximum intrusive depth at site (ft): **0**

Reference(s) for table above:
DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro. February.

Select Ref(s)

Site ID: **IRP Site 1 Adjacent Property - Areas A and B**
Date: **7/12/2010**

Planned Remedial or Removal Actions

Response Action No.	Response Action Description	Expected Resulting Minimum MEC Depth (ft)	Expected Resulting Site Accessibility	Will land use activities change if this response action is implemented?	What is the expected scope of cleanup?	Comments
1	No Action	0	Limited Accessibility	No	No MEC cleanup	
2	Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS	1	Limited Accessibility	No	cleanup of MECs located both on the surface and subsurface	
3						
4						
5						
6						

According to the 'Summary Info' worksheet, no future land uses are planned. For those alternatives where you answered 'No' in Column E, the land use activities will be assessed against current land uses.

Reference(s) for table above:

Select Ref(s)

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent

Site ID: **IRP Site 1 Adjacent Property - Areas A and B**

Date: **7/12/2010**

Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

	Score
Baseline Conditions:	**100**
Surface Cleanup:	**100**
Subsurface Cleanup:	**100**

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS? 200 feet
2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? No
3. Please describe the facility or feature.

MEC Item(s) used to calculate the ESQD for current use activities

Select MEC(s)

Item #1. Artillery (20mm, High Explosive)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

Comments

4. Current use activities are 'Outside of the ESQD arc', based on Question 2.'

	Score
Baseline Conditions:	**0**
Surface Cleanup:	**0**
Subsurface Cleanup:	**0**

5. Are there future plans to locate or construct features or facilities where people may congregate within the MRS, or within the ESQD arc? No

6. Please describe the facility or feature.

MEC Item(s) used to calculate the ESQD for future use activities

Select MEC(s)

Item #1. Artillery (20mm, High Explosive)

The following table is used to determine scores associated with the location of additional human receptors (future use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

7. Future use activities are 'Outside of the ESQD arc', based on Question 5.'

	Score
Baseline Conditions:	**0**
Surface Cleanup:	**0**
Subsurface Cleanup:	**0**

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities — ***Score***

Select the category that best describes the site accessibility under the current use scenario:

Very Limited Accessibility

Baseline Conditions: **5**
Surface Cleanup: **5**
Subsurface Cleanup: **5**

Future Use Activities

Select the category that best describes the site accessibility under the future use scenario:

Full Accessibility

Baseline Conditions: **80**
Surface Cleanup: **80**
Subsurface Cleanup: **80**

Reference(s) for above information:

DON 2009b. Draft Action Memorandum, Time-Critical Removal Action, IRP Site 1 Unit 2 - Adjacent Property, EOD Training Range, Former MCAS El Toro

Select Ref(s)

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Limited Accessibility'.

Baseline Conditions: **15**
Surface Cleanup: **15**
Subsurface Cleanup: **15**

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Limited Accessibility'.

Baseline Conditions: **15**

Surface Cleanup:	15	
Subsurface Cleanup:	15	
Response Alternative No. 3:		
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.		
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:		
Response Alternative No. 4:		
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.		
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:		
Response Alternative No. 5:		
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.		
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:		
Response Alternative No. 6:		
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.		
Baseline Conditions:		
Surface Cleanup:		
Subsurface Cleanup:		

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

Current Use Activities :

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **200** receptor hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **15** Score

Future Use Activities :

Input factors are only determined for baseline conditions for future use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: receptor hrs/yr

Based on the table above, this corresponds to a input factor score of: Score

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **200**

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions: **15**

Surface Cleanup: **10**

Subsurface Cleanup: **5**

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time, based on the contact time listed for current use activities (see 'Current and Future Activities' Worksheet) **200**

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions: **15**

Surface Cleanup: **10**

Subsurface Cleanup: **5**

Response Alternative No. 3:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 4:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 5:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: **Score**

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 6:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: **Score**

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

Safety Buffer Areas

Baseline Conditions:	30
Surface Cleanup:	10
Subsurface Cleanup:	5

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: 0 ft

The deepest intrusive depth: 0 ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' For 'Current Use Activities', only Baseline Conditions are considered.

240 ***Score***

Future Use Activities

Deepest intrusive depth: **0** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'. For 'Future Use Activities', only Baseline Conditions are considered.

240 ***Score***

Response Alternative No. 1: No Action

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0** ft

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **0** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'

Score

Baseline Conditions: **240**

Surface Cleanup:

Subsurface Cleanup:

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization of MEC, and

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **1** ft

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Maximum Intrusive Depth, based on the maximum intrusive depth listed for current use activities (see 'Current and Future Activities' Worksheet) **0** ft

Because the shallowest minimum MEC depth is greater than the deepest intrusive depth, the intrusive depth does not overlap. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.'

Score

Baseline Conditions:

Surface Cleanup:

Subsurface Cleanup: **25**

Response Alternative No. 3:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 4:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 5:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 6:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

	Score
Baseline Conditions:	
Surface Cleanup:	
Subsurface Cleanup:	

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? Yes

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion on hillside adjacent to IRP Site 1 may reveal additional MEC

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.'

	Score
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**10**

Reference(s) for above information:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Safety Buffer Areas'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Has a technical assessment shown that MEC in the OB/OD Area is DMM? Yes

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: Yes

· Submunitions

· Rifle-propelled 40mm projectiles (often called 40mm grenades)
· Munitions with white phosphorus filler
· High explosive anti-tank (HEAT) rounds
· Hand grenades
· Fuzes
· Mortars

At least one item listed in the 'Munitions, Bulk Explosive Info' Worksheet was identified as 'fuzed'.

The following table is used to determine scores associated with MEC classification categories:

UXO Special Case	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'.

	Score	
Baseline Conditions:	**55**	Modified from 180
Surface Cleanup:	**55**	Modified from 180
Subsurface Cleanup:	**55**	Modified from 180

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: Small

	Score
Baseline Conditions:	**40**
Surface Cleanup:	**40**
Subsurface Cleanup:	**40**

Scoring Summary

Site ID:	IRP Site 1 Adjacent Property - Ar	a. Scoring Summary for Current Use Activities
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		Very Limited Accessibility
IV. Potential Contact Hours		<10,000 receptor-hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	b. Scoring Summary for Future Use Activities
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		Full Accessibility
IV. Potential Contact Hours		
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		UXO Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	c. Scoring Summary for Response Alternative 1: No Action
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		Limited Accessibility
IV. Potential Contact Hours		<10,000 receptor-hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	d. Scoring Summary for Response Alternative 2: Munitions Removal,
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		Limited Accessibility
IV. Potential Contact Hours		<10,000 receptor-hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score
		Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	e. Scoring Summary for Response Alternative 3:
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		
IV. Potential Contact Hours		
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		
VII. Migration Potential		Possible
VIII. MEC Classification		UXO Special Case
IX. MEC Size		Small
		Total Score
		Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	f. Scoring Summary for Response Alternative 4:
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		
IV. Potential Contact Hours		
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		
VII. Migration Potential		Possible
VIII. MEC Classification		UXO Special Case
IX. MEC Size		Small
		Total Score
		Hazard Level Category

0

MEC HA Hazard Level Determination		
Site ID: Areas A and B		
Date: 7/12/2010		
	Hazard Level Category	**Score**
a. Current Use Activities	4	515
b. Future Use Activities	3	575
c. Response Alternative 1: No Action	4	525
Demilitarization of MEC, and Off-Site Recycling of MDAS	4	255
e. Response Alternative 3:		
f. Response Alternative 4:		
g. Response Alternative 5:		
h. Response Alternative 6:		

Characteristics of the MRS	
Is critical infrastructure located within the MRS or within the ESQD arc?	No
Are cultural resources located within the MRS or within the ESQD arc?	No
Are significant ecological resources located within the MRS or within the ESQD arc?	No

Attachment 2
MEC HA Calculation Spreadsheet – IRP Site 1 Adjacent Property Area C

MEC HA Summary Information

Comments

Site ID: IRP Site 1 Adjacent Property - Area C
Date: 7/12/2010

Please identify the single specific area to be assessed in this hazard assessment. From this point forward, all references to "site" or "MRS" refer to the specific area that you have defined.

A. Enter a unique identifier for the site:

IRP Site 1 Adjacent Property - Area C

Provide a list of information sources used for this hazard assessment. As you are completing the worksheets, use the "Select Ref(s)" buttons at the ends of each subsection to select the applicable information sources from the list below.

Ref. No.	Title (include version, publication date)
1	Characterization, IRP Site 1, EOD Training Range,
2	Installation Restoration Program Site 1, Adjacent
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

B. Briefly describe the site:

1. Area (include units): 5.4 Acres
2. Past munitions-related use:

Safety Buffer Areas

3. Current land-use activities (list all that occur):

Open Space

4. Are changes to the future land-use planned? Yes
5. What is the basis for the site boundaries?

Munitions characterization activities in 2008 conducted on 43 acres of property adjacent to IRP Site 1 revealed one Munitions Debris items being collected within the MRS to the west of Agua Chinon Wash.. A subsequent Time-Critical Removal Action (TCRA) has been conducted (February-June 2010) and resulted in the collection of two additional Material Documented as an Explosive Hazard (MDEH) items as well as several Material Documented as Safe (MDAS) items. Site boundaries are based on items collected during those two investigations.

6. How certain are the site boundaries?

The 2010 TCRA was comprehensive and based on the distribution of MPPEH items collected, the site boundary appears to encompass all likely MPPEH areas.

Reference(s) for Part B:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

C. Historical Clearances

1. Have there been any historical clearances at the site? Yes, subsurface clearance
2. If a clearance occurred:
   a. What year was the clearance performed? 2008 and 2010
   b. Provide a description of the clearance activity (e.g., extent, depth, amount of munitions-related items removed, types and sizes of removed items, and whether metal detectors were used):

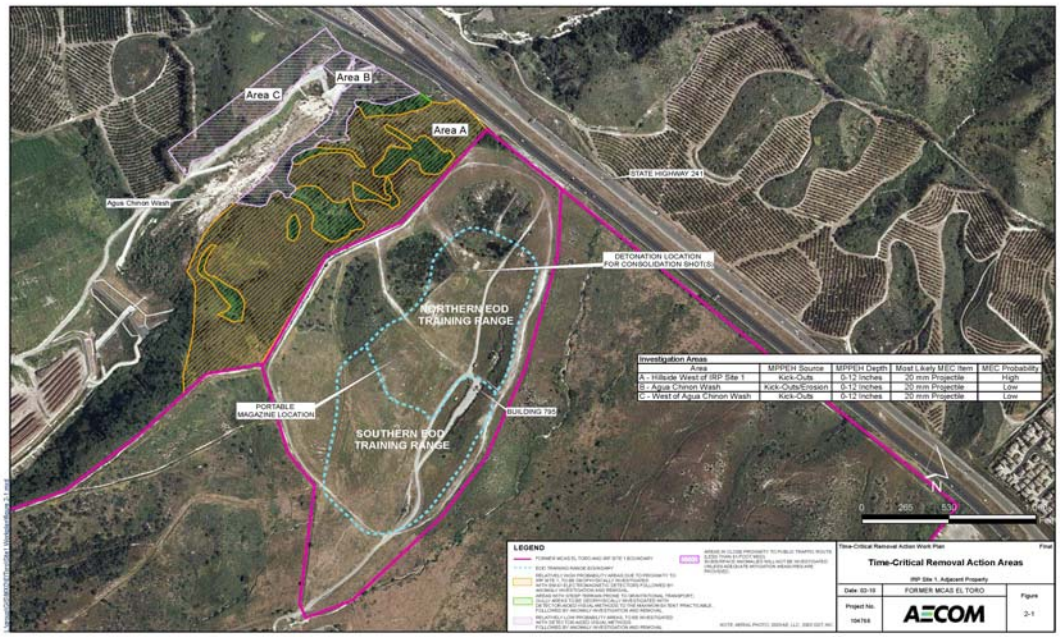
Clearance was conducted to depth using mag-and-flag techniques followed by anomaly investigation and removal. One 20 mm projectile and one fuze were collected, along with several MDAS items.

Reference(s) for Part C:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

D. Attach maps of the site below (select 'Insert/Picture' on the menu bar.)



Cased Munitions Information

Item No.	Munition Type (e.g., mortar, projectile, etc.)	Munition Size	Munition Size Units	Mark/ Model	Energetic Material Type	Is Munition Fuzed?	Fuzing Type	Fuze Condition	Minimum Depth for Munition (ft)	Location of Munitions	Comments (include rationale for munitions that are "subsurface only")
1	Artillery	20	mm		High Explosive	Yes	Impact	Armed	0	Surface and Subsurface	
2	Fuzes				High Explosive	No	UNK	Armed	0	Surface and Subsurface	
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Reference(s) for table above:
DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

Bulk Explosive Information

Item No.	Explosive Type	Comments
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Reference(s) for table above:

Select Ref(s)

Site ID: **IRP Site 1 Adjacent Property - Area C**
Date: **7/12/2010**

Activities Currently Occurring at the Site

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Open Space	5	20	**100**	0	
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Total Potential Contact Time (receptor hrs/yr): **100**

Maximum intrusive depth at site (ft): **0**

Reference(s) for table above:
DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

Activities Planned for the Future at the Site (If any are planned: see 'Summary Info' Worksheet, Question 4)

Activity No.	Activity	Number of people per year who participate in the activity	Number of hours per year a single person spends on the activity	Potential Contact Time (receptor hours/year)	Maximum intrusive depth (ft)	Comments
1	Medium-Density Residential - Construction	100	2,000	**200,000**	14	Based on 40 hours per week, 50 weeks per year
2	Medium-Density Residential - Occupancy	100	5,600	**560,000**	7	Based on 16 hours per day, 350 days per year
3						
4					0	
5						
6						
7						
8						
9						
10						
11						
12						
			Total Potential Contact Time (receptor hrs/yr):	**760,000**		
			Maximum intrusive depth at site (ft):		**14**	

Reference(s) for table above:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1

Select Ref(s)

Site ID: **IRP Site 1 Adjacent Property - Area C**
Date: **7/12/2010**

Planned Remedial or Removal Actions

Response Action No.	Response Action Description	Expected Resulting Minimum MEC Depth (ft)	Expected Resulting Site Accessibility	Will land use activities change if this response action is implemented?	What is the expected scope of cleanup?	Comments
1	No Action	0	Full Accessibility	No	No MEC cleanup	
2	Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS	1	Full Accessibility	No	cleanup of MECs located both on the surface and subsurface	
3						
4						
5						
6						

For those alternatives where you answered 'No' in Column E, are land-use activities to be assessed against current or future land uses?	Future	

Reference(s) for table above:

Select Ref(s)

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent

Site ID: **IRP Site 1 Adjacent Property - Area C**

Date: **7/12/2010**

Energetic Material Type Input Factor Categories

The following table is used to determine scores associated with the energetic materials. Materials are listed in order from most hazardous to least hazardous.

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
High Explosive and Low Explosive Filler in Fragmenting Rounds	100	100	100
White Phosphorus	70	70	70
Pyrotechnic	60	60	60
Propellant	50	50	50
Spotting Charge	40	40	40
Incendiary	30	30	30

The most hazardous type of energetic material listed in the 'Munitions, Bulk Explosive Info' Worksheet falls under the category 'High Explosive and Low Explosive Filler in Fragmenting Rounds'.

	Score
Baseline Conditions:	**100**
Surface Cleanup:	**100**
Subsurface Cleanup:	**100**

Location of Additional Human Receptors Input Factor Categories

1. What is the Explosive Safety Quantity Distance (ESQD) from the Explosive Siting Plan or the Explosive Safety Submission for the MRS? 200 feet
2. Are there currently any features or facilities where people may congregate within the MRS, or within the ESQD arc? No
3. Please describe the facility or feature.

MEC Item(s) used to calculate the ESQD for current use activities

Select MEC(s)

Item #1. Artillery (20mm, High Explosive)

The following table is used to determine scores associated with the location of additional human receptors (current use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

4. Current use activities are 'Outside of the ESQD arc', based on Question 2.' *Score*

Comments

Baseline Conditions:	**0**
Surface Cleanup:	**0**
Subsurface Cleanup:	**0**

5. Are there future plans to locate or construct features or facilities where people may congregate within the MRS, or within the ESQD arc? Yes

6. Please describe the facility or feature.

Medium-density residential housing is to be constructed within the MRS, to the west of Agua Chinon Wash.

MEC Item(s) used to calculate the ESQD for future use activities

Select MEC(s)

Item #1. Artillery (20mm, High Explosive)

The following table is used to determine scores associated with the location of additional human receptors (future use activities):

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Inside the MRS or inside the ESQD arc	30	30	30
Outside of the ESQD arc	0	0	0

7. Future use activities are 'Inside the MRS or inside the ESQD arc', based on Question 5.'

	Score
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**30**

Site Accessibility Input Factor Categories

The following table is used to determine scores associated with site accessibility:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Full Accessibility	No barriers to entry, including signage but no fencing	80	80	80
Moderate Accessibility	Some barriers to entry, such as barbed wire fencing or rough terrain	55	55	55
Limited Accessibility	Significant barriers to entry, such as unguarded chain link fence or requirements for special transportation to reach the site	15	15	15
Very Limited Accessibility	A site with guarded chain link fence or terrain that requires special equipment and skills (e.g., rock climbing) to access	5	5	5

Current Use Activities

Select the category that best describes the site accessibility under the current use scenario:

Very Limited Accessibility

	Score
Baseline Conditions:	**5**
Surface Cleanup:	**5**
Subsurface Cleanup:	**5**

Future Use Activities

Select the category that best describes the site accessibility under the future use scenario:

Full Accessibility

Baseline Conditions:	**80**
Surface Cleanup:	**80**
Subsurface Cleanup:	**80**

Reference(s) for above information:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Full Accessibility'.

Baseline Conditions:	**80**
Surface Cleanup:	**80**
Subsurface Cleanup:	**80**

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization of MEC, and Off-Site Recycling of MDAS

Based on the 'Planned Remedial or Removal Actions' Worksheet, this alternative will lead to 'Full Accessibility'.

Baseline Conditions:	**80**

Surface Cleanup:	**80**
Subsurface Cleanup:	**80**

Response Alternative No. 3:
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.
Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 4:
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.
Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 5:
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.
Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 6:
Please enter site accessibility information in the 'Planned Remedial or Removal Actions' Worksheet to continue.
Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Potential Contact Hours Input Factor Categories

The following table is used to determine scores associated with the total potential contact time:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Many Hours	≥1,000,000 receptor-hrs/yr	120	90	30
Some Hours	100,000 to 999,999 receptor hrs/yr	70	50	20
Few Hours	10,000 to 99,999 receptor-hrs/yr	40	20	10
Very Few Hours	<10,000 receptor-hrs/yr	15	10	5

Current Use Activities :

Input factors are only determined for baseline conditions for current use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **100** receptor hrs/yr

Based on the table above, this corresponds to a input factor score for baseline conditions of: **15** Score

Future Use Activities :

Input factors are only determined for baseline conditions for future use activities. Based on the 'Current and Future Activities' Worksheet, the Total Potential Contact Time is: **760,000** receptor hrs/yr

Based on the table above, this corresponds to a input factor score of: **70** Score

Response Alternative No. 1: No Action

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time based on the contact time listed for future use activities (see 'Current and Future Activities' Worksheet) **760,000**

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Total Potential Contact Time based on the contact time listed for future use activities (see 'Current and Future Activities' Worksheet) **760,000**

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions: **70**

Surface Cleanup: **50**

Subsurface Cleanup: **20**

Response Alternative No. 3:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 4:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: ***Score***

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 5:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: **Score**

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 6:

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Total Potential Contact Time

Based on the table above, this corresponds to input factor scores of: **Score**

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Amount of MEC Input Factor Categories

The following table is used to determine scores associated with the Amount of MEC:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Target Area	Areas at which munitions fire was directed	180	120	30
OB/OD Area	Sites where munitions were disposed of by open burn or open detonation methods. This category refers to the core activity area of an OB/OD area. See the "Safety Buffer Areas" category for safety fans and kick-outs.	180	110	30
Function Test Range	Areas where the serviceability of stored munitions or weapons systems are tested. Testing may include components, partial functioning or complete functioning of stockpile or developmental items.	165	90	25
Burial Pit	The location of a burial of large quantities of MEC items.	140	140	10
Maneuver Areas	Areas used for conducting military exercises in a simulated conflict area or war zone	115	15	5
Firing Points	The location from which a projectile, grenade, ground signal, rocket, guided missile, or other device is to be ignited, propelled, or released.	75	10	5
Safety Buffer Areas	Areas outside of target areas, test ranges, or OB/OD areas that were designed to act as a safety zone to contain munitions that do not hit targets or to contain kick-outs from OB/OD areas.	30	10	5
Storage	Any facility used for the storage of military munitions, such as earth-covered magazines, above-ground magazines, and open-air storage areas.	25	10	5
Explosive-Related Industrial Facility	Former munitions manufacturing or demilitarization sites and TNT production plants	20	10	5

Select the category that best describes the ***most hazardous*** amount of MEC: ***Score***

Safety Buffer Areas

Baseline Conditions:	30
Surface Cleanup:	10
Subsurface Cleanup:	5

Minimum MEC Depth Relative to the Maximum Intrusive Depth Input Factor Categories

Current Use Activities

The shallowest minimum MEC depth, based on the 'Cased Munitions Information' Worksheet: 0 ft

The deepest intrusive depth: 0 ft

The table below is used to determine scores associated with the minimum MEC depth relative to the maximum intrusive depth:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.	240	150	95
Baseline Condition: MEC located surface and subsurface, After Cleanup: Intrusive depth does not overlap with subsurface MEC.	240	50	25
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth overlaps with minimum MEC depth.	150	N/A	95
Baseline Condition: MEC located only subsurface. Baseline Condition or After Cleanup: Intrusive depth does not overlap with minimum MEC depth.	50	N/A	25

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth will overlap after cleanup. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.' For 'Current Use Activities', only Baseline Conditions are considered.

240 ***Score***

Future Use Activities

Deepest intrusive depth: **14** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'. For 'Future Use Activities', only Baseline Conditions are considered.

240 ***Score***

Response Alternative No. 1: No Action

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **0** ft

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Maximum Intrusive Depth, based on the maximum intrusive depth listed for future use activities (see 'Current and Future Activities' Worksheet) **14** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'

Score

Baseline Conditions: **240**

Surface Cleanup:

Subsurface Cleanup:

Response Alternative No. 2: Munitions Removal, On-Site Demilitarization of MEC, and

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): **1** ft

Based on the 'Planned Remedial or Removal Actions' Worksheet, land use activities will not change if this alternative is implemented.

Maximum Intrusive Depth, based on the maximum intrusive depth listed for future use activities (see 'Current and Future Activities' Worksheet) **14** ft

Because the shallowest minimum MEC depth is less than or equal to the deepest intrusive depth, the intrusive depth overlaps. MECs are located at both the surface and subsurface, based on the 'Munitions, Bulk Explosive Info' Worksheet. Therefore, the category for this input factor is 'Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.'

Score

Baseline Conditions:

Surface Cleanup:

Subsurface Cleanup: **95**

Response Alternative No. 3:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 4:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 5:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

Score

Baseline Conditions:
Surface Cleanup:
Subsurface Cleanup:

Response Alternative No. 6:

Expected minimum MEC depth (from the 'Planned Remedial or Removal Actions' Worksheet): ft

Not enough information has been entered in the 'Planned Remedial or Removal Actions' Worksheet. Please complete the table before returning to this section.

Maximum Intrusive Depth ft

Not enough information has been entered to calculate this input factor.

	Score
Baseline Conditions:	
Surface Cleanup:	
Subsurface Cleanup:	

Migration Potential Input Factor Categories

Is there any physical or historical evidence that indicates it is possible for natural physical forces in the area (e.g., frost heave, erosion) to expose subsurface MEC items, or move surface or subsurface MEC items? Yes

If "yes", describe the nature of natural forces. Indicate key areas of potential migration (e.g., overland water flow) on a map as appropriate (attach a map to the bottom of this sheet, or as a separate worksheet).

Erosion may reveal additional MEC

The following table is used to determine scores associated with the migration potential:

	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Possible	30	30	10
Unlikely	10	10	10

Based on the question above, migration potential is 'Possible.'

	Score
Baseline Conditions:	**30**
Surface Cleanup:	**30**
Subsurface Cleanup:	**10**

Reference(s) for above information:

DON 2010. Final Time-Critical Removal Action Work Plan, Installation Restoration Program Site 1, Adjacent Property, Former MCAS El Toro

Select Ref(s)

MEC Classification Input Factor Categories

Cased munitions information has been inputed into the 'Munitions, Bulk Explosive Info' Worksheet; therefore, bulk explosives do not comprise all MECs for this MRS.

The 'Amount of MEC' category is 'Safety Buffer Areas'. It cannot be automatically assumed that the MEC items from this category are DMM. Therefore, the conservative assumption is that the MEC items in this MRS are UXO.

Has a technical assessment shown that MEC in the OB/OD Area is DMM? Yes

Are any of the munitions listed in the 'Munitions, Bulk Explosive Info' Worksheet: Yes

· Submunitions

· Rifle-propelled 40mm projectiles (often called 40mm grenades)
· Munitions with white phosphorus filler
· High explosive anti-tank (HEAT) rounds
· Hand grenades
· Fuzes
· Mortars

At least one item listed in the 'Munitions, Bulk Explosive Info' Worksheet was identified as 'fuzed'.

The following table is used to determine scores associated with MEC classification categories:

UXO Special Case	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
UXO Special Case	180	180	180
UXO	110	110	110
Fuzed DMM Special Case	105	105	105
Fuzed DMM	55	55	55
Unfuzed DMM	45	45	45
Bulk Explosives	45	45	45

Based on your answers above, the MEC classification is 'UXO Special Case'.

	Score	
Baseline Conditions:	**55**	Modified from 180
Surface Cleanup:	**55**	Modified from 180
Subsurface Cleanup:	**55**	Modified from 180

MEC Size Input Factor Categories

The following table is used to determine scores associated with MEC Size:

	Description	Baseline Conditions	Surface Cleanup	Subsurface Cleanup
Small	Any munitions (from the 'Munitions, Bulk Explosive Info' Worksheet) weigh less than 90 lbs; small enough for a receptor to be able to move and initiate a detonation	40	40	40
Large	All munitions weigh more than 90 lbs; too large to move without equipment	0	0	0

Based on the definitions above and the types of munitions at the site (see 'Munitions, Bulk Explosive Info' Worksheet), the MEC Size Input Factor is: Small

	Score
Baseline Conditions:	**40**
Surface Cleanup:	**40**
Subsurface Cleanup:	**40**

Scoring Summary

Site ID:	IRP Site 1 Adjacent Property - Ar	a. Scoring Summary for Current Use Activities
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Outside of the ESQD arc
III. Site Accessibility		Very Limited Accessibility
IV. Potential Contact Hours		<10,000 receptor-hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	b. Scoring Summary for Future Use Activities
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Inside the MRS or inside the ESQD arc
III. Site Accessibility		Full Accessibility
IV. Potential Contact Hours		100,000 to 999,999 receptor hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	c. Scoring Summary for Response Alternative 1: No Action
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Inside the MRS or inside the ESQD arc
III. Site Accessibility		Full Accessibility
IV. Potential Contact Hours		100,000 to 999,999 receptor hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	d. Scoring Summary for Response Alternative 2: Munitions Removal,
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Inside the MRS or inside the ESQD arc
III. Site Accessibility		Full Accessibility
IV. Potential Contact Hours		100,000 to 999,999 receptor hrs/yr
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		Baseline Condition: MEC located surface and subsurface. After Cleanup: Intrusive depth overlaps with subsurface MEC.
VII. Migration Potential		Possible
VIII. MEC Classification		DMM Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	e. Scoring Summary for Response Alternative 3:
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Inside the MRS or inside the ESQD arc
III. Site Accessibility		
IV. Potential Contact Hours		
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		
VII. Migration Potential		Possible
VIII. MEC Classification		UXO Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

Site ID:	IRP Site 1 Adjacent Property - Ar	f. Scoring Summary for Response Alternative 4:
Date:	7/12/2010	Response Action Cleanup:
Input Factor		Input Factor Category
I. Energetic Material Type		High Explosive and Low Explosive Filler in Fragmenting Rounds
II. Location of Additional Human Receptors		Inside the MRS or inside the ESQD arc
III. Site Accessibility		
IV. Potential Contact Hours		
V. Amount of MEC		Safety Buffer Areas
VI. Minimum MEC Depth Relative to Maximum Intrusive Depth		
VII. Migration Potential		Possible
VIII. MEC Classification		UXO Special Case
IX. MEC Size		Small
		Total Score Hazard Level Category

MEC HA Hazard Level Determination		
Site ID: Area C		
Date: 7/12/2010		
	Hazard Level Category	**Score**
a. Current Use Activities	4	515
b. Future Use Activities	3	675
c. Response Alternative 1: No Action	3	675
Demilitarization of MEC, and Off-Site Recycling of MDAS	4	435
e. Response Alternative 3:		
f. Response Alternative 4:		
g. Response Alternative 5:		
h. Response Alternative 6:		

Characteristics of the MRS	
Is critical infrastructure located within the MRS or within the ESQD arc?	No
Are cultural resources located within the MRS or within the ESQD arc?	No
Are significant ecological resources located within the MRS or within the ESQD arc?	No